



FALLBROOK PUBLIC UTILITY DISTRICT

**SEWER MAIN RELINING
FY 25**

JOB No. 3197

CONTRACT DOCUMENTS

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**SECTION 00100 – CONTRACT DOCUMENTS
NOTICE INVITING BIDS**

NOTICE INVITING BIDS

The Fallbrook Public Utility District (“District”) will receive sealed bids for the SEWER MAIN RELINING FY25 Project at **Fallbrook Public Utility District, 990 E. Mission Road, Fallbrook, CA 92028** no later than **THURSDAY November 14th, 2024 at 3:00 PM**, at which time or thereafter said bids will be opened and read aloud. Bids received after this time will be returned unopened. Bids shall be valid for 60 calendar days after the bid opening date.

The Work generally consists of the Cleaning, Derooting, Repairing and Relining approximately **925** linear feet of **6”**, **1251** linear feet of **8”**, and **101** linear feet of **10”** Gravity Sewer Main and cutting **11** respective laterals. This shall include any necessary Cleaning, Derooting, Chemical Grouting infiltration / repairing of said Sewer Mains, and respective Lateral interfaces. The construction estimate for this project is **\$140,000**.

Electronic copies of project documents will be made available for no cost at the District’s office at 990 E. Mission Road, Fallbrook, CA 92028, or via email by contacting Joyej@fpud.com.

Bids must be accompanied by cash, a certified or cashier’s check, or a Bid Bond in favor of District in an amount not less than ten percent (10%) of the submitted Total Bid Price.

A **Non-Mandatory Pre-Bid Conference** will be held at 990 E. Mission Road, Fallbrook CA, on the following date(s) and time(s): **TUESDAY OCTOBER 29TH, 2024 at 1:00 PM**. Prospective bidders may visit the Project Site.

The successful bidder must submit a Performance Bond equal to 100% of the contract price prior to execution of the Contract. Also, if a contract awarded to the successful bidder will exceed \$25,000, a Payment Bond equal to 100% of the contract price must also be submitted to the District prior to execution of the Contract. All bonds are to be secured from a surety that meets all of the State of California bonding requirements, as defined in Code of Civil Procedure Section 995.120, and is admitted by the State of California.

Pursuant to Public Contract Code Section 22300, the successful bidder may substitute certain securities for funds withheld by District to ensure his performance under the Contract.

The Director of Industrial Relations has determined the general prevailing rate of per diem wages in the locality in which this work is to be performed for each craft or type of worker needed to execute the Contract which will be awarded to the successful bidder, copies of which are on file and will be made available to any interested party upon request at FPUD Corporate Office at 990 E. Mission Road, Fallbrook, CA 92028 or online at <http://www.dir.ca.gov/dlsr>. A copy of these rates shall be posted by the successful bidder at the job site. The successful bidder and all subcontractor(s) under him, shall comply with all applicable Labor Code provisions, which include, but are not limited to the payment of not less than the required prevailing rates to all workers employed by them in the execution of the Contract, the employment of apprentices, the hours of labor and the debarment of contractors and subcontractors.

Pursuant to Labor Code sections 1725.5 and 1771.1, all contractors and subcontractors that wish to bid on, be listed in a bid proposal, or enter into a contract to perform public work must be registered with the Department of Industrial Relations. No bid will be accepted nor any contract entered into without proof of the contractor’s and subcontractors’ current registration with the

SECTION 00100 – CONTRACT DOCUMENTS
NOTICE INVITING BIDS

Department of Industrial Relations to perform public work. If awarded a Contract, the bidder and its subcontractors, of any tier, shall maintain active registration with the Department of Industrial Relations for the duration of the Project.

This Project is subject to compliance monitoring and enforcement by the Department of Industrial Relations. In bidding on this project, it shall be the bidder's sole responsibility to evaluate and include the cost of complying with all labor compliance requirements under this Contract and applicable law in its bid.

Each bidder shall be a licensed contractor pursuant to the Business and Professions Code and shall be licensed in the following appropriate classification(s) of contractor's license(s), for the work bid upon, and must maintain the license(s) throughout the duration of the Contract: **Class A** General Engineering Contractor.

Award of Contract: District shall award the Contract for the Project to the lowest responsible bidder as determined from the base bid alone by District. District reserves the right to reject any or all bids or to waive any irregularities or informalities in any bids or in the bidding process.

For further information, contact Kevin Collins at (760) 999-2734, or kcollins@fpud.com

END OF NOTICE INVITING BIDS

**SECTION 00100 – CONTRACT DOCUMENTS
INSTRUCTIONS TO BIDDERS**

INSTRUCTIONS TO BIDDERS

1. AVAILABILITY OF CONTRACT DOCUMENTS

Bids must be submitted to District on the Bid Forms which are a part of the Bid Package for the Project. Prospective bidders may obtain one (1) complete set of Contract Documents at no cost. Contract Documents may be obtained from District at the location(s) and at the time(s) indicated in the Notice Inviting Bids. Prospective bidders are encouraged to telephone in advance to determine the availability of Contract Documents. Any applicable charges for the Contract Documents are outlined in the Notice Inviting Bids.

District may also make the Contract Documents available for review at one or more plan rooms, as indicated in the Notice Inviting Bids. Please Note: Prospective bidders who choose to review the Contract Documents at a plan room must contact District to obtain the required Contract Documents if they decide to submit a bid for the Project.

2. EXAMINATION OF CONTRACT DOCUMENTS

District has made copies of the Contract Documents available, as indicated above. Bidders shall be solely responsible for examining the Project Site and the Contract Documents, including any Addenda issued during the bidding period, and for informing itself with respect to local labor availability, means of transportation, necessity for security, laws and codes, local permit requirements, wage scales, local tax structure, contractors' licensing requirements, availability of required insurance, and other factors that could affect the Work. Bidders are responsible for consulting the standards referenced in the Contract. Failure of Bidder to so examine and inform itself shall be at its sole risk, and no relief for error or omission will be given except as required under State law.

3. INTERPRETATION OF CONTRACT DOCUMENTS

Discrepancies in, and/or omissions from the Plans, Specifications or other Contract Documents or questions as to their meaning shall be immediately brought to the attention of District by submission of a written request for an interpretation or correction to District. Such submission, if any, must be sent to the Operations Specialist by emailing to kcollins@fpud.com

Any interpretation of the Contract Documents will be made only by written addenda duly issued and mailed or delivered to each person or firm who has purchased a set of Contract Documents. District will not be responsible for any explanations or interpretations provided in any other manner. No person is authorized to make any oral interpretation of any provision in the Contract Documents to any bidder, and no bidder should rely on any such oral interpretation.

Bids shall include complete compensation for all items that are noted in the Contract Documents as the responsibility of the Contractor.

4. INSPECTION OF SITE; PRE-BID CONFERENCE AND SITE WALK

Each prospective bidder is responsible for fully acquainting itself with the conditions of the Project Site (which may include more than one site), as well as those relating to the construction and

**SECTION 00100 – CONTRACT DOCUMENTS
INSTRUCTIONS TO BIDDERS**

labor of the Project, to fully understand the facilities, difficulties and restrictions which may impact the cost or effort required to complete the Project. To this end, a Pre-Bid Conference and Site Walk will be held on the date(s) and time(s) indicated in the Notice Inviting Bids.

5. ADDENDA

District reserves the right to revise the Contract Documents prior to the bid opening date. Revisions, if any, shall be made by written Addenda. All Addenda issued by District shall be included in the bid and made part of the Contract Documents. Pursuant to Public Contract Code Section 4104.5, if District issues an Addendum which includes material changes to the Project less than 72 hours prior to the deadline for submission of bids, District will extend the deadline for submission of bids. District may determine, in its sole discretion, whether an Addendum warrants postponement of the bid submission date. Each prospective bidder shall provide District a name, address and facsimile number to which Addenda may be sent, as well as a telephone number by which District can contact the bidder. Copies of Addenda will be furnished by facsimile, first class mail, express mail or other proper means of delivery without charge to all parties who have obtained a copy of the Contract Documents and provided such current information. Please Note: Bidders are responsible for ensuring that they have received any and all Addenda. To this end, each bidder should contact the District's Engineering Department to verify that he has received all Addenda issued, if any, prior to the bid opening.

6. ALTERNATE BIDS

If alternate bid items are called for in the Contract Documents, the lowest bid will be determined on the basis of the base bid only. However, District may choose to award the contract on the basis of the base bid alone or the base bid and any alternate or combination of alternates. The time required for completion of the alternate bid items has been factored into the Contract duration and no additional Contract time will be awarded for any of the alternate bid items. District may elect to include one or more of the alternate bid items, or to otherwise remove certain work from the Project scope of work, accordingly each Bidder must ensure that each bid item contains a proportionate share of profit, overhead and other costs or expenses which will be incurred by the Bidder.

7. COMPLETION OF BID FORMS

Bids shall only be prepared using copies of the Bid Forms which are included in the Contract Documents. The use of substitute bid forms other than clear and correct photocopies of those provided by District will not be permitted. Bids shall be executed by an authorized signatory as described in these Instructions to Bidders. In addition, Bidders shall fill in all blank spaces (including inserting "N/A" where applicable) and initial all interlineations, alterations, or erasures to the Bid Forms. Bidders shall neither delete, modify, nor supplement the printed matter on the Bid Forms nor make substitutions thereon. **USE OF BLACK OR BLUE INK, INDELIBLE PENCIL OR A TYPEWRITER IS REQUIRED.** Deviations in the bid form may result in the bid being deemed non-responsive.

8. MODIFICATIONS OF BIDS

Each Bidder shall submit its Bid in strict conformity with the requirements of the Contract

**SECTION 00100 – CONTRACT DOCUMENTS
INSTRUCTIONS TO BIDDERS**

Documents. Unauthorized additions, modifications, revisions, conditions, limitations, exclusions or provisions attached to a Bid may render it non-responsive and may cause its rejection. Bidders shall neither delete, modify, nor supplement the printed matter on the Bid Forms, nor make substitutions thereon. Oral, telephonic and electronic modifications will not be considered, unless the Notice Inviting Bids authorizes the submission of electronic bids and modifications thereto and such modifications are made in accordance with the Notice Inviting Bids.

9. DESIGNATION OF SUBCONTRACTORS

Pursuant to State law, the Bidders must designate (a) the name and location of each subcontractor who will perform work or render services for the Bidder in an amount that exceeds one-half of one percent (1/2%) of the Bidder's Total Bid Price, (b) the California contractor license number, and (c) the portion of work each such subcontractor will perform on the form provided herein by District. No additional time will be provided to bidders to submit any of the requested information in the Designation of Subcontractor form.

10. LICENSING REQUIREMENTS

Pursuant to Section 7028.15 of the Business and Professions Code and Section 3300 of the Public Contract Code, all bidders must possess proper licenses for performance of this Contract. Subcontractors must possess the appropriate licenses for each specialty subcontracted. Pursuant to Section 7028.5 of the Business and Professions Code, District shall consider any bid submitted by a contractor not currently licensed in accordance with state law and pursuant to the requirements found in the Contract Documents to be non-responsive, and District shall reject the Bid. District shall have the right to request, and Bidders shall provide within five (5) calendar days, evidence satisfactory to District of all valid license(s) currently held by that Bidder and each of the Bidder's subcontractors, before awarding the Contract.

11. SIGNING OF BIDS

All Bids submitted shall be executed by the Bidder or its authorized representative. Bidders may be asked to provide evidence in the form of an authenticated resolution of its Board of Directors or a Power of Attorney evidencing the capacity of the person signing the Bid to bind the Bidder to each Bid and to any Contract arising therefrom.

If a Bidder is a joint venture or partnership, it may be asked to submit an authenticated Power of Attorney executed by each joint venturer or partner appointing and designating one of the joint venturers or partners as a management sponsor to execute the Bid on behalf of Bidder. Only that joint venturer or partner shall execute the Bid. The Power of Attorney shall also: (1) authorize that particular joint venturer or partner to act for and bind Bidder in all matters relating to the Bid; and (2) provide that each venturer or partner shall be jointly and severally liable for any and all of the duties and obligations of Bidder assumed under the Bid and under any Contract arising therefrom. The Bid shall be executed by the designated joint venturer or partner on behalf of the joint venture or partnership in its legal name.

**SECTION 00100 – CONTRACT DOCUMENTS
INSTRUCTIONS TO BIDDERS**

12. BID GUARANTEE (BOND)

Each bid shall be accompanied by: (a) cash; (b) a certified check made payable to District; (c) a cashier's check made payable to District; or (d) a bid bond payable to District executed by the bidder as principal and surety as obligor in an amount not less than 10% of the maximum amount of the bid. Personal sureties and unregistered surety companies are unacceptable. The surety insurer shall be California admitted surety insurer, as defined in Code of Civil Procedure Section 995.120. The cash, check or bid bond shall be given as a guarantee that the bidder shall execute the Contract if it be awarded to the bidder, shall provide the payment and performance bonds and insurance certificates and endorsements as required herein within ten (10) calendar days after notification of the award of the Contract to the bidder. Failure to provide the required documents may result in forfeiture of the bidder's bid deposit or bond to District and District may award the Contract to the next lowest responsible bidder, or may call for new bids.

13. SUBMISSION OF SEALED BIDS

Once the Bid and supporting documents have been completed and signed as set forth herein, they shall be placed, along with the Bid Guarantee and other required materials in an envelope, sealed, addressed and delivered or mailed, postage prepaid to District at the place and to the attention of the person indicated in the Notice Inviting Bids. No oral or telephonic bids will be considered. No forms transmitted via the Internet, e-mail, facsimile, or any other electronic means will be considered unless specifically authorized by District as provided herein. The envelope shall also contain the following in the lower left-hand corner thereof:

Bid of Bidder's Name for the SEWER MAIN RELINING FY25

Only where expressly permitted in the Notice Inviting Bids, may Bidders submit their bids via electronic transmission pursuant to Public Contract Code Sections 1600 and 1601. The acceptable method(s) of electronic transmission shall be stated in the Notice Inviting Bids. District reserves the right to not accept electronically transmitted bids where not specifically authorized in the Notice Inviting Bids, and may reject any bid not strictly complying with District's designated methods for delivery.

14. DELIVERY AND OPENING OF BIDS

Bids will be received by District at the address shown in the Notice Inviting Bids up to the date and time shown therein. District will leave unopened any Bid received after the specified date and time, and any such unopened Bid will be returned to the Bidder. It is the Bidder's sole responsibility to ensure that its Bid is received as specified. Bids may be submitted earlier than the dates(s) and time(s) indicated.

Bids will be opened at the date and time stated in the Notice Inviting Bids, and the amount of each Bid will be read aloud and recorded. All Bidders may, if they desire, attend the opening of Bids. District may in its sole discretion, elect to postpone the opening of the submitted Bids. District reserves the right to reject any or all Bids and to waive any informality or irregularity in any Bid. In the event of a discrepancy between the written amount of the Bid Price and the numerical amount of the Bid Price, the written amount shall govern.

**SECTION 00100 – CONTRACT DOCUMENTS
INSTRUCTIONS TO BIDDERS**

15. WITHDRAWAL OF BID

Prior to bid opening, a Bid may be withdrawn by the Bidder only by means of a written request signed by the Bidder or its properly authorized representative.

16. BASIS OF AWARD, BALANCED BIDS

District shall award the Contract to the lowest responsible Bidder submitting a responsive Bid. District may reject any Bid which, in its opinion when compared to other bids received or to District's internal estimates, does not accurately reflect the cost to perform the Work. District may reject as non-responsive any bid which unevenly weights or allocates costs, including but not limited to overhead and profit to one or more particular bid items.

17. DISQUALIFICATION OF BIDDERS; INTEREST IN MORE THAN ONE BID

No bidder shall be allowed to make, submit or be interested in more than one bid. However, a person, firm, corporation or other entity that has submitted a subproposal to a bidder, or that has quoted prices of materials to a bidder, is not thereby disqualified from submitting a subproposal or quoting prices to other bidders submitting a bid to District. No person, firm, corporation, or other entity may submit subproposal to a bidder, or quote prices of materials to a bidder, when also submitting a prime bid on the same Project.

18. INSURANCE REQUIREMENTS

The successful bidder shall procure the insurance in the form and in the amount specified in the Contract Documents.

19. AWARD PROCESS

Once all Bids are opened and reviewed to determine the lowest responsive and responsible Bidder, District's Board of Directors may award the contract. The apparent successful Bidder should begin to prepare the following documents: (1) the Performance Bond; (2) the Payment Bond (if applicable); and (3) the required insurance certificates and endorsements. Once District notifies the Bidder of the award, the Bidder will have ten (10) consecutive calendar days from the date of this notification to execute the Contract and supply District with all of the required documents and certifications. Regardless whether the Bidder supplies the required documents and certifications in a timely manner, the Contract time will begin to run ten (10) calendar days from the date of the notification. Once District receives all of the properly drafted and executed documents and certifications from the Bidder, District shall issue a Notice to Proceed to that Bidder.

20. FILING OF BID PROTESTS

Bidders may file a "protest" of a Bid with District's Engineering Manager. In order for a Bidder's protest to be considered valid, the protest must:

- A. Be filed in writing within five (5) calendar days after the bid opening date;

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- B. Clearly identify the specific irregularity or accusation;
- C. Specify, in detail, the grounds of the protest and the facts supporting the protest; and
- D. Include all relevant, supporting documentation with the protest at time of filing.

If the protest does not comply with each of these requirements, it will be rejected as invalid.

If the protest is valid, District's Engineering Manager, or other designated District staff member, shall review the basis of the protest and all relevant information. The Engineering Manager will provide a written decision to the protestor. The protestor may then appeal the decision of the Engineering Manager to the General Manager.

21. WORKERS COMPENSATION

Each bidder shall submit the Contractor's Certificate Regarding Workers' Compensation form.

22. SUBSTITUTION OF SECURITY

The Contract Documents call for monthly progress payments based upon the percentage of the work completed. District will withhold retention from each progress payment as provided by the Contract Documents. At the request and expense of the successful Bidder, District will substitute securities for the amount so retained in accordance with Public Contract Code Section 22300.

23. PREVAILING WAGES

District has obtained from the Director of the Department of Industrial Relations the general prevailing rate of per diem wages in the locality in which this work is to be performed for each craft or type of worker needed to execute the Contract. These rates are on file and available at Fallbrook Public Utility District or may be obtained online at <http://www.dir.ca.gov/dlsr>. Bidders are advised that a copy of these rates must be posted by the successful Bidder at the job site(s).

24. DEBARMENT OF CONTRACTORS AND SUBCONTRACTORS

In accordance with the provisions of the Labor Code, contractors or subcontractors may not perform work on a public works project with a subcontractor who is ineligible to perform work on a public project pursuant to Section 1777.1 or Section 1777.7 of the Labor Code. Any contract on a public works project entered into between a contractor and a debarred subcontractor is void as a matter of law. A debarred subcontractor may not receive any public money for performing work as a subcontractor on a public works contract. Any public money that is paid to a debarred subcontractor by the Contractor for the Project shall be returned to District. The Contractor shall be responsible for the payment of wages to workers of a debarred subcontractor who has been allowed to work on the Project.

25. IRAN CONTRACTING ACT CERTIFICATION

Each bidder shall submit the certification required by the Iran Contracting Act of 2010, Public Contract Code section 2200 et seq. as provided with the Bid Documents.

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26. PUBLIC WORKS CONTRACTOR REGISTRATION CERTIFICATION

Pursuant to Labor Code sections 1725.5 and 1771.1, all contractors and subcontractors that wish to bid on, be listed in a bid proposal, or enter into a contract to perform public work must be registered with the Department of Industrial Relations. No bid will be accepted nor any contract entered into without proof of the contractor's and subcontractors' current registration with the Department of Industrial Relations to perform public work. If awarded a Contract, the Bidder and its subcontractors, of any tier, shall maintain active registration with the Department of Industrial Relations for the duration of the Project. To this end, Bidder shall sign and submit with its Bid the Public Works Contractor Registration Certification on the form provided, attesting to the facts contained therein. Failure to submit this form may render the Bid non-responsive. In addition, each bidder shall provide the registration number for each listed subcontractor in the space provided in the Designation of Subcontractors Form.

27. PERFORMANCE BOND AND PAYMENT BOND REQUIREMENTS

Within the time specified in the Contract Documents, the Bidder to whom a Contract is awarded shall deliver to District four identical counterparts of the Performance Bond and Payment Bond (if required) in the form supplied by District and included in the Contract Documents. A Performance Bond shall be submitted for all contracts. A Payment Bond is required for all contracts in excess of \$25,000. Failure to do so may, in the sole discretion of District, result in the forfeiture of the Bid Guarantee. The surety supplying the bond must be an admitted surety insurer, as defined in Code of Civil Procedure Section 995.120, authorized to do business as such in the State of California and satisfactory to District. The Performance Bond and the Payment Bond shall be for one hundred percent (100%) of the Contract Price.

28. REQUEST FOR SUBSTITUTIONS

The successful bidder shall comply with the substitution request provisions set forth in the Special Conditions, including any deadlines for substitution requests **which may occur prior to the bid opening date.**

29. SALES AND OTHER APPLICABLE TAXES, PERMITS, LICENSES AND FEES

Contractor and its subcontractors performing work under this Contract will be required to pay California sales tax and other applicable taxes, and to pay for permits, licenses and fees required by the agencies with authority in the jurisdiction in which the work will be located, unless otherwise expressly provided by the Contract Documents.

30. EXECUTION OF CONTRACT

As required herein the Bidder to whom an award is made shall execute the Contract in the amount determined by the Contract Documents. District may require appropriate evidence that the persons executing the Contract are duly empowered to do so.

END OF INSTRUCTIONS TO BIDDERS

SECTION 00100 – CONTRACT DOCUMENTS

BID FORM

BID FORM

NAME OF BIDDER: _____

The undersigned, hereby declare that we have carefully examined the location of the proposed Work, and have read and examined the Contract Documents, including all plans, specifications, and all addenda, if any, for the following Project:

SEWER MAIN RELINING - FY25

BID SCHEDULE

NO.	ITEM DESCRIPTION	UNIT OF MEASURE	EST. QTY.	UNIT PRICE	ITEM COST
1.	Initial Mobilization / Demobilization	LS	1		
2.	6" Sewer Main Relining – CIPP	L.F.	925		
3.	8" Sewer Main Relining – CIPP	L.F.	1251		
4.	10" Sewer Main Relining – CIPP	L.F.	101		
5.	Chemical Grout sealing (in order to manage infiltration), estimate:	EA	5		

In case of discrepancy between the unit price and the item cost set forth for a unit basis item, the unit price shall prevail and, shall be utilized as the basis for determining the lowest responsive, responsible bidder. However, if the amount set forth as a unit price is ambiguous, unintelligible or uncertain for any cause, or is omitted, or is the same amount as the entry in the "Item Cost" column, then the amount set forth in the "Item Cost" column for the item shall prevail and shall be divided by the estimated quantity for the item and the price thus obtained shall be the unit price. Final payment shall be determined by the Engineer from measured quantities of work performed based upon the unit price.

TOTAL BID PRICE (BASED ON BID SCHEDULE TOTAL OF UNIT PRICES):

\$ _____
Total Bid Price in Numbers

Total Bid Price in Written Form

**SECTION 00100 – CONTRACT DOCUMENTS
BID FORM**

In case of discrepancy between the written price and the numerical price, the written price shall prevail.

The undersigned agrees that this Bid Form constitutes a firm offer to District which cannot be withdrawn for the number of calendar days indicated in the Notice Inviting Bids from and after the bid opening, or until a Contract for the Work is fully executed by District and a third party, whichever is earlier.

The Contract duration shall commence on the date stated in District's Notice to Proceed, and shall be completed by the Contractor in the time specified in the Contract Documents. In no case shall the Contractor commence construction prior to the date stated in District's Notice to Proceed.

Bidder certifies that it is licensed in accordance with the law providing for the registration of Contractors, License No. _____, Expiration Date _____, class of license _____. If the bidder is a joint venture, each member of the joint venture must include the above information.

The undersigned acknowledges receipt, understanding and full consideration of the following addenda to the Contract Documents.

Addenda No. _____

Addenda No. _____

Addenda No. _____

1. Attached is the required bid security in the amount of not less than 10% of the Total Bid Price.
2. Attached is the fully executed Non-Collusion Declaration form.
3. Attached is the completed Designation of Subcontractors form.
4. Attached is the completed Bidder Information Form.
5. Attached is the completed Contractor's Certificate Regarding Workers' Compensation form.
6. Attached is the completed Iran Contracting Act Certification form.
7. Attached is the completed Public Works Contractor Registration Certification form.

I hereby certify under penalty of perjury under the laws of the State of California, that all of the information submitted in connection with this Bid and all of the representations made herein are true and correct.

Name of Bidder _____

Signature _____ Dated _____

Name and Title _____

END OF BID FORM

**SECTION 00100 – CONTRACT DOCUMENTS
CONTRACTOR’S CERTIFICATE REGARDING WORKERS’ COMPENSATION**

CONTRACTOR’S CERTIFICATE REGARDING WORKERS’ COMPENSATION

I am aware of the provisions of Section 3700 of the 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.

Name of Bidder _____

Signature _____

Name _____

Title _____

Dated _____

END OF CONTRACTOR’S CERTIFICATE REGARDING WORKERS’ COMPENSATION

SECTION 00100 – CONTRACT DOCUMENTS

BID BOND

BID BOND

The makers of this bond are _____,
as Principal, and _____,
as Surety and are held and firmly bound unto the Fallbrook Public Utility District, hereinafter called
District, in the penal sum of TEN PERCENT (10%) OF THE TOTAL BID PRICE of the Principal
submitted to District for the work described below, for the payment of which sum in lawful money
of the United States, well and truly to be made, we bind ourselves, our heirs, executors,
administrators, successors and assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH that whereas the Principal has
submitted the accompanying bid dated _____, 20_____, SEWER MAIN
RELINING FY25.

If the Principal does not withdraw its bid within the time specified in the Contract
Documents; and if the Principal is awarded the Contract and provides all documents to District as
required by the Contract Documents; then this obligation shall be null and void. Otherwise, this
bond will remain in full force and effect.

Surety, for value received, hereby stipulates and agrees that no change, extension
of time, alteration or addition to the terms of the Contract Documents shall in affect its obligation
under this bond, and Surety does hereby waive notice of any such changes.

In the event a lawsuit is brought upon this bond by District and judgment is
recovered, the Surety shall pay all litigation expenses incurred by District in such suit, including
reasonable attorneys' fees, court costs, expert witness fees and expenses.

IN WITNESS WHEREOF, the above-bound parties have executed this instrument
under their several seals this _____ day of _____, 20____, the name and corporate seal
of each corporation.

(Corporate Seal)

Contractor/ Principal

By _____

Title _____

(Attach Acknowledgment Form)

(Corporate Seal)

Surety

By _____

Attorney-in-Fact

(Attach Attorney-in-Fact Certificate)

Title _____

**SECTION 00100 – CONTRACT DOCUMENTS
 BID BOND**

Notary 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 _____

On _____, 20___, before me, _____, Notary Public, personally

appeared _____, 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 of Notary Public _____

OPTIONAL

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

CAPACITY CLAIMED BY SIGNER

DESCRIPTION OF ATTACHED DOCUMENT

- Individual
- Corporate Officer

_____ Title(s)

- Partner(s) Limited
- General

- Attorney-In-Fact
- Trustee(s)
- Guardian/Conservator
- Other:

Signer is representing:
 Name Of Person(s) Or Entity(ies)

_____ Title or Type of Document

_____ Number of Pages

_____ Date of Document

 Signer(s) Other Than Named Above

**SECTION 00100 – CONTRACT DOCUMENTS
BID BOND**

NOTE: This acknowledgment is to be completed for Contractor/Principal.

Notary 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 _____

On _____, 20____, before me, _____, Notary Public, personally appeared _____, 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 of Notary Public _____

OPTIONAL

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

CAPACITY CLAIMED BY SIGNER

DESCRIPTION OF ATTACHED DOCUMENT

- Individual
- Corporate Officer

- _____ Title(s)
- Partner(s) Limited
 - General

- Attorney-In-Fact
- Trustee(s)
- Guardian/Conservator
- Other:

Signer is representing:
Name Of Person(s) Or Entity(ies)

_____ Title or Type of Document

_____ Number of Pages

_____ Date of Document

_____ Signer(s) Other Than Named Above

NOTE: This acknowledgment is to be completed for the Attorney-in-Fact. The Power-of-attorney to local representatives of the bonding company must also be attached.

END OF BID BOND

**SECTION 00100 – CONTRACT DOCUMENTS
CONTRACTOR INFORMATION AND EXPERIENCE FORM**

NON-COLLUSION DECLARATION

TO BE EXECUTED BY BIDDER AND SUBMITTED WITH BID

The undersigned declares:

I am the _____ of _____, the party making the foregoing bid.

The bid is not made in the interest of, or on behalf of, any undisclosed person, partnership, company, association, organization, or corporation. The bid is genuine and not collusive or sham. The bidder has not directly or indirectly induced or solicited any other bidder to put in a false or sham bid. The bidder has not directly or indirectly colluded, conspired, connived, or agreed with any bidder or anyone else to put in a sham bid, or to refrain from bidding. 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. All statements contained in the bid are true. 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, to any corporation, partnership, company association, organization, bid depository, or to any member or agent thereof to effectuate a collusive or sham bid, and has not paid, and will not pay, any person or entity for such purpose.

Any person executing this declaration on behalf of a bidder that is a corporation, partnership, joint venture, limited liability company, limited liability partnership, or any other entity, hereby represents that he or she has full power to execute, and does execute, this declaration on behalf of the bidder.

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct and that this declaration is executed on _____ [date], at _____ [city], _____ [state].

Name of Bidder _____

Signature _____

Name _____

Title _____

END OF NON-COLLUSION DECLARATION

**SECTION 00100 – CONTRACT DOCUMENTS
CONTRACTOR INFORMATION AND EXPERIENCE FORM**

CONTRACTOR INFORMATION AND EXPERIENCE FORM

A. INFORMATION ABOUT BIDDER

Indicate not applicable (“N/A”) where appropriate.

NOTE: Where Bidder is a joint venture, pages shall be duplicated and information provided for all parties to the joint venture.

1.0 Name of Bidder: _____

2.0 Type, if Entity: _____

3.0 Bidder Address: _____

Facsimile Number

Telephone Number

4.0 How many years has Bidder’s organization been in business as a Contractor?

5.0 How many years has Bidder’s organization been in business under its present name?

5.1 Under what other or former names has Bidder’s organization operated?: _____

6.0 If Bidder’s organization is a corporation, answer the following:

6.1 Date of Incorporation: _____

6.2 State of Incorporation: _____

6.3 President’s Name: _____

6.4 Vice-President’s Name(s): _____

6.5 Secretary’s Name: _____

6.6 Treasurer’s Name: _____

**SECTION 00100 – CONTRACT DOCUMENTS
CONTRACTOR INFORMATION AND EXPERIENCE FORM**

7.0 If an individual or a partnership, answer the following:

7.1 Date of Organization: _____

7.2 Name and address of all partners (state whether general or limited partnership):

8.0 If other than a corporation or partnership, describe organization and name principals:

9.0 List other states in which Bidder's organization is legally qualified to do business.

10.0 What type of work does the Bidder normally perform with its own forces?

11.0 Has Bidder ever failed to complete any work awarded to it? If so, note when, where, and why:

12.0 Within the last five years, has any officer or partner of Bidder's organization ever been an officer or partner of another organization when it failed to complete a contract? If so, attach a separate sheet of explanation:

**SECTION 00100 – CONTRACT DOCUMENTS
CONTRACTOR INFORMATION AND EXPERIENCE FORM**

14.0 List Trade References:

15.0 List Bank References (Bank and Branch Address):

16.0 Name of Bonding Company and Name and Address of Agent:

**SECTION 00100 – CONTRACT DOCUMENTS
CONTRACTOR INFORMATION AND EXPERIENCE FORM**

B. LIST OF CURRENT PROJECTS (Backlog)

[**Duplicate Page if needed for listing additional current projects.**]

Project	Description of Bidder's Work	Completion Date	Cost of Bidder's Work

**SECTION 00100 – CONTRACT DOCUMENTS
CONTRACTOR INFORMATION AND EXPERIENCE FORM**

C. LIST OF COMPLETED PROJECTS - LAST THREE YEARS

[**Duplicate Page if needed for listing additional completed projects.**]

Please include only those projects which are similar enough to demonstrate Bidder's ability to perform the required Work.

Project Client	Description of Bidder's Work	Period of Performance	Cost of Bidder's Work

**SECTION 00100 – CONTRACT DOCUMENTS
CONTRACTOR INFORMATION AND EXPERIENCE FORM**

D. EXPERIENCE AND TECHNICAL QUALIFICATIONS QUESTIONNAIRE

Personnel:

The Bidder shall identify the key personnel to be assigned to this project in a management, construction supervision or engineering capacity.

1. List each person's job title, name and percent of time to be allocated to this project:

2. Summarize each person's specialized education:

3. List each person's years of construction experience relevant to the project:

4. Summarize such experience:

Bidder agrees that personnel named in this Bid will remain on this Project until completion of all relevant Work, unless substituted by personnel of equivalent experience and qualifications approved in advance by District.

Additional Bidder's Statements:

If the Bidder feels that there is additional information which has not been included in the questionnaire above, and which would contribute to the qualification review, it may add that information in a statement here or on an attached sheet, appropriately marked:

**SECTION 00100 – CONTRACT DOCUMENTS
CONTRACTOR INFORMATION AND EXPERIENCE FORM**

E. DELETED

F. DELETED

G. VERIFICATION AND EXECUTION

These Bid Forms shall be executed only by a duly authorized official of the Bidder:

I declare under penalty of perjury under the laws of the State of California that the foregoing information is true and correct:

Name of Bidder _____

Signature _____

Name _____

Title _____

Dated _____

END OF CONTRACTOR INFORMATION AND EXPERIENCE FORM

**SECTION 00100 – CONTRACT DOCUMENTS
LIST OF SUBCONTRACTORS FORM**

LIST OF SUBCONTRACTORS FORM

In compliance with the Subletting and Subcontracting Fair Practices Act of the Public Contract Code of the State of California, each bidder shall set forth below: (a) the name and the location of the place of business, (b) the California contractor license number, and (c) the portion of the work which will be done by each subcontractor who will perform work or labor or render service to the Contractor in or about the construction of the work in an amount in excess of one-half of one percent (1/2%) of the Contractor's Total Bid Price. Notwithstanding the foregoing, if the work involves streets and highways, then the Contractor shall list each subcontractor who will perform work or labor or render service to Contractor in or about the work in an amount in excess of one-half of one percent (1/2%) of the Contractor's Total Bid Price or \$10,000, whichever is greater. No additional time shall be granted to provide the below requested information.

If no subcontractor is specified, for a portion of the work, or if more than one subcontractor is specified for the same portion of Work, to be performed under the Contract in excess of one-half of one percent (1/2%) of the Contractor's Total Bid Price, then the Contractor shall be deemed to have agreed that it is fully qualified to perform that Work, and that it shall perform that portion itself.

Work to be done by Subcontractor	Name of Subcontractor	Location of Business	CSLB Contractor License Number	DIR Registration Number

**SECTION 00100 – CONTRACT DOCUMENTS
LIST OF SUBCONTRACTORS FORM**

Work to be done by Subcontractor	Name of Subcontractor	Location of Business	CSLB Contractor License Number	DIR Registration Number

Name of Bidder _____

Signature _____

Name & Title _____

Dated _____

**SECTION 00100 – CONTRACT DOCUMENTS
IRAN CONTRACTING ACT CERTIFICATION**

IRAN CONTRACTING ACT CERTIFICATION

(Public Contract Code Section 2200 et seq.)

As required by California Public Contract Code Section 2204, the Contractor certifies subject to penalty for perjury that the option checked below relating to the Contractor's status in regard to the Iran Contracting Act of 2010 (Public Contract Code Section 2200 et seq.) is true and correct:

- The Contractor is not:
 - (i) identified on the current list of persons and entities engaging in investment activities in Iran prepared by the California Department of General Services in accordance with subdivision (b) of Public Contract Code Section 2203; or
 - (ii) a financial institution that extends, for 45 days or more, credit in the amount of \$20,000,000 or more to any other person or entity identified on the current list of persons and entities engaging in investment activities in Iran prepared by the California Department of General Services in accordance with subdivision (b) of Public Contract Code Section 2203, if that person or entity uses or will use the credit to provide goods or services in the energy sector in Iran.
- The District has exempted the Contractor from the requirements of the Iran Contracting Act of 2010 after making a public finding that, absent the exemption, the District will be unable to obtain the goods and/or services to be provided pursuant to the Contract.
- The amount of the Contract payable to the Contractor for the Project does not exceed \$1,000,000.

Name of Bidder: _____

Signature: _____

Name: _____

Title: _____

Date: _____

Note: In accordance with Public Contract Code Section 2205, false certification of this form shall be reported to the California Attorney General and may result in civil penalties equal to the greater of \$250,000 or twice the Contract amount, termination of the Contract and/or ineligibility to bid on contracts for three years.

END OF IRAN CONTRACTING ACT CERTIFICATION

**SECTION 00100 – CONTRACT DOCUMENTS
PUBLIC WORKS CONTRACTOR REGISTRATION CERTIFICATION**

PUBLIC WORKS CONTRACTOR REGISTRATION CERTIFICATION

If this bid is due on or after March 1, 2015, then pursuant to Labor Code sections 1725.5 and 1771.1, all contractors and subcontractors that wish to bid on, be listed in a bid proposal, or enter into a contract to perform public work must be registered with the Department of Industrial Relations. See <http://www.dir.ca.gov/Public-Works/PublicWorks.html> for additional information.

No bid will be accepted nor any contract entered into without proof of the contractor's and subcontractors' current registration with the Department of Industrial Relations to perform public work.

Bidder hereby certifies that it is aware of the registration requirements set forth in Labor Code sections 1725.5 and 1771.1 and is currently registered as a contractor with the Department of Industrial Relations.

Name of Bidder: _____

DIR Registration Number: _____

Bidder further acknowledges:

1. Bidder shall maintain a current DIR registration for the duration of the project.
2. Bidder shall include the requirements of Labor Code sections 1725.5 and 1771.1 in its contract with subcontractors and ensure that all subcontractors are registered at the time of bid opening and maintain registration status for the duration of the project.
3. Failure to submit this form or comply with any of the above requirements may result in a finding that the bid is non-responsive.

Name of Bidder _____

Signature _____

Name and Title _____

Dated _____

END OF PUBLIC WORKS CONTRACTOR REGISTRATION CERTIFICATION

**SECTION 00100 – CONTRACT DOCUMENTS
CONTRACT**

CONTRACT

THIS CONTRACT is made this ____ day of _____, 20__, in the County of San Diego, State of California, by and between the Fallbrook Public Utility District hereinafter called District, and _____, hereinafter called Contractor. District and the Contractor for the considerations stated herein agree as follows:

ARTICLE 1. SCOPE OF WORK. The Contractor shall perform all Work within the time stipulated the Contract and shall provide all labor, materials, equipment, tools, utility services, and transportation to complete all of the Work required in strict compliance with the Contract Documents as specified in Article 5 below for the following Project:

SEWER MAIN RELINING FY25

The Contractor and its surety shall be liable to District for any damages arising as a result of the Contractor's failure to comply with this obligation.

ARTICLE 2. TIME FOR COMPLETION. The Work shall be commenced on the date stated in District's Notice to Proceed. The Contractor shall complete all Work required by the Contract Documents within **150 calendar days** from the commencement date stated in the Notice to Proceed. By its signature hereunder, Contractor agrees the time for completion set forth above is adequate and reasonable to complete the Work.

ARTICLE 3. CONTRACT PRICE. District shall pay to the Contractor as full compensation for the performance of the Contract, subject to any additions or deductions as provided in the Contract Documents, and including all applicable taxes and costs, the sum of _____ Dollars (\$ _____). Payment shall be made as set forth in the General Conditions.

ARTICLE 4. LIQUIDATED DAMAGES. In accordance with Government Code section 53069.85, it is agreed that the Contractor will pay District the sum of \$5,000 for each and every calendar day of delay beyond the time prescribed in the Contract Documents for finishing the Work, as Liquidated Damages and not as a penalty or forfeiture. In the event this is not paid, the Contractor agrees District may deduct that amount from any money due or that may become due the Contractor under the Contract. This Article does not exclude recovery of other damages specified in the Contract Documents.

ARTICLE 5. COMPONENT PARTS OF THE CONTRACT. The "Contract Documents" include the following:

- Notice Inviting Bids
- Instructions to Bidders
- Bid Form
- Contractor's Certificate Regarding Workers' Compensation
- Bid Bond
- Designation of Subcontractors
- Information Required of Bidders

SECTION 00100 – CONTRACT DOCUMENTS
CONTRACT

Non-Collusion Declaration form
Iran Contracting Act Certification
Public Works Contractor Registration Certification
Contract
Performance Bond
Payment Bond (if required)
General Conditions
Special Conditions
Technical Specifications
Addenda
Plans and Drawings
Approved and fully executed change orders
Any other documents contained in or incorporated into the Contract

The Contactor shall complete the Work in strict accordance with all of the Contract Documents.

All of the Contract Documents are intended to be complementary. Work required by one of the Contract Documents and not by others shall be done as if required by all. This Contract shall supersede any prior agreement of the parties.

ARTICLE 6. PROVISIONS REQUIRED BY LAW. Each and every provision of law required to be included in these Contract Documents shall be deemed to be included in these Contract Documents. The Contractor shall comply with all requirements of the California Labor Code applicable to this Project.

ARTICLE 7. INDEMNIFICATION. Contractor shall provide indemnification as set forth in the General Conditions.

ARTICLE 8. PREVAILING WAGES. Contractor shall be required to pay the prevailing rate of wages in accordance with the Labor Code which such rates shall be made available at District's Corporate Office or may be obtained online at <http://www.dir.ca.gov/dlsr>. and which must be posted at the job site.

**SECTION 00100 – CONTRACT DOCUMENTS
CONTRACT**

IN WITNESS WHEREOF, this Contract has been duly executed by the above-named parties, on the day and year above written.

**FALLBROOK PUBLIC UTILITY
DISTRICT**

Name of Contractor

By _____

By _____

Date: _____

Name and Title:

License No. _____

Date: _____

**(ALL SIGNATURES MUST BE
NOTARIZED AND CORPORATE
SEALS AFFIXED, IF APPLICABLE)**

END OF CONTRACT

**SECTION 00100 – CONTRACT DOCUMENTS
PERFORMANCE BOND**

PERFORMANCE BOND

KNOW ALL PERSONS BY THESE PRESENTS:

THAT WHEREAS, the Fallbrook Public Utility District (hereinafter referred to as "District") has awarded to _____, (hereinafter referred to as the "Contractor") _____ an agreement for **SEWER MAIN RELINING FY25** (hereinafter referred to as the "Project").

WHEREAS, the work to be performed by the Contractor is more particularly set forth in the Contract Documents for the Project dated _____, (hereinafter referred to as "Contract Documents"), the terms and conditions of which are expressly incorporated herein by reference; and

WHEREAS, the Contractor is required by said Contract Documents to perform the terms thereof and to furnish a bond for the faithful performance of said Contract Documents.

NOW, THEREFORE, we, _____, the undersigned Contractor and _____ as Surety, a corporation organized and duly authorized to transact business under the laws of the State of California, are held and firmly bound unto District in the sum of _____ DOLLARS, (\$_____), said sum being not less than one hundred percent (100%) of the total amount of the Contract, for which amount well and truly to be made, we bind ourselves, our heirs, executors and administrators, successors and assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH, that, if the Contractor, his or its heirs, executors, administrators, successors or assigns, shall in all things stand to and abide by, and well and truly keep and perform the covenants, conditions and agreements in the Contract Documents and any alteration thereof made as therein provided, on its part, to be kept and performed at the time and in the manner therein specified, and in all respects according to their intent and meaning; and shall faithfully fulfill all obligations including the one-year guarantee of all materials and workmanship; and shall indemnify and save harmless District, its officers and agents, as stipulated in said Contract Documents, then this obligation shall become null and void; otherwise it shall be and remain in full force and effect.

As a part of the obligation secured hereby and in addition to the face amount specified therefore, there shall be included costs and reasonable expenses and fees incurred by District in enforcing such obligation.

As a condition precedent to the satisfactory completion of the Contract Documents, unless otherwise provided for in the Contract Documents, the above obligation shall hold good for a period of one (1) year after the acceptance of the work by District, during which time if Contractor shall fail to make full, complete, and satisfactory repair and replacements and totally protect District from loss or damage resulting from or caused by defective materials or faulty workmanship, the above obligation in penal sum thereof shall remain in full force and effect. However, anything in this paragraph to the contrary notwithstanding, the obligations of Surety hereunder shall continue so long as any obligation of Contractor remains. Nothing herein shall limit District's rights or the Contractor or Surety's obligations under the Contract, law or equity, including, but not limited to, California Code of Civil Procedure section 337.15.

**SECTION 00100 – CONTRACT DOCUMENTS
PERFORMANCE BOND**

Whenever Contractor shall be, and is declared by District to be, in default under the Contract Documents, the Surety shall remedy the default pursuant to the Contract Documents, or shall promptly, at District's option:

- (1) Take over and complete the Project in accordance with all terms and conditions in the Contract Documents; or
- (2) Obtain a bid or bids for completing the Project in accordance with all terms and conditions in the Contract Documents and upon determination by Surety of the lowest responsive and responsible bidder, arrange for a Contract between such bidder, the Surety and District, and make available as work progresses sufficient funds to pay the cost of completion of the Project, less the balance of the contract price, including other costs and damages for which Surety may be liable. The term "balance of the contract price" as used in this paragraph shall mean the total amount payable to Contractor by District under the Contract and any modification thereto, less any amount previously paid by District to the Contractor and any other set offs pursuant to the Contract Documents.
- (3) Permit District to complete the Project in any manner consistent with California law and make available as work progresses sufficient funds to pay the cost of completion of the Project, less the balance of the contract price, including other costs and damages for which Surety may be liable. The term "balance of the contract price" as used in this paragraph shall mean the total amount payable to Contractor by District under the Contract and any modification thereto, less any amount previously paid by District to the Contractor and any other set offs pursuant to the Contract Documents.

Surety expressly agrees that District may reject any contractor or subcontractor which may be proposed by Surety in fulfillment of its obligations in the event of default by the Contractor.

Surety shall not utilize Contractor in completing the Project nor shall Surety accept a bid from Contractor for completion of the Project if District, when declaring the Contractor in default, notifies Surety of District's objection to Contractor's further participation in the completion of the Project.

The Surety, for value received, hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the Contract Documents or to the Project to be performed thereunder shall in any way affect its obligations on this bond, and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the Contract Documents or to the Project.

**SECTION 00100 – CONTRACT DOCUMENTS
PERFORMANCE BOND**

IN WITNESS WHEREOF, we have hereunto set our hands and seals this _____ day of _____, 20__.

(Corporate Seal)

Contractor/ Principal

By _____

Title _____

(Corporate Seal)

Surety

By _____

Attorney-in-Fact

(Attach Attorney-in-Fact Certificate)

Title _____

Signatures of those signing for the Contractor and Surety must be notarized and evidence of corporate authority attached.

The rate of premium on this bond is _____ per thousand. The total amount of premium charges, \$_____.

(The above must be filled in by corporate attorney.)

THIS IS A REQUIRED FORM

Any claims under this bond may be addressed to:

(Name and Address of Surety)

(Name and Address of Agent or Representative for service of process in California, if different from above)

(Telephone number of Surety and Agent or Representative for service of process in California)

**SECTION 00100 – CONTRACT DOCUMENTS
PERFORMANCE BOND**

Notary 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 _____

On _____, 20____, before me, _____, Notary Public, personally appeared _____, 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 of Notary Public

OPTIONAL

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

CAPACITY CLAIMED BY SIGNER

DESCRIPTION OF ATTACHED DOCUMENT

- Individual
- Corporate Officer

Title(s)

Title or Type of Document

- Partner(s) Limited
- General

Number of Pages

- Attorney-In-Fact
- Trustee(s)
- Guardian/Conservator
- Other:

Date of Document

Signer is representing:
Name Of Person(s) Or Entity(ies)

Signer(s) Other Than Named Above

NOTE: This acknowledgment is to be completed for Contractor/Principal.

**SECTION 00100 – CONTRACT DOCUMENTS
PERFORMANCE BOND**

Notary Acknowledgment

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STATE OF CALIFORNIA
COUNTY OF _____

On _____, 20____, before me, _____, Notary Public, personally appeared _____, 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 of Notary Public _____

OPTIONAL

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

CAPACITY CLAIMED BY SIGNER

DESCRIPTION OF ATTACHED DOCUMENT

- Individual
- Corporate Officer

Title(s)

Partner(s) Limited
 General

Attorney-In-Fact

Trustee(s)

Guardian/Conservator

Other:
Signer is representing:
Name Of Person(s) Or Entity(ies)

Title or Type of Document

Number of Pages

Date of Document

Signer(s) Other Than Named Above

NOTE: This acknowledgment is to be completed for the Attorney-in-Fact. The Power-of-Attorney to local representatives of the bonding company must also be attached.

END OF PERFORMANCE BOND

**SECTION 00100 – CONTRACT DOCUMENTS
PAYMENT BOND**

PAYMENT BOND

KNOW ALL MEN BY THESE PRESENTS that:

WHEREAS, the Fallbrook Public Utility District (hereinafter designated as "District"), by action taken or a resolution passed _____, 20__ has awarded to _____ hereinafter designated as the "Principal," a contract for the work described as _____ follows:

_____ (the "Project"); and

WHEREAS, said Principal is required to furnish a bond in connection with said contract; providing that if said Principal or any of its Subcontractors shall fail to pay for any materials, provisions, provender, equipment, or other supplies used in, upon, for or about the performance of the work contracted to be done, or for any work or labor done thereon of any kind, or for amounts due under the Unemployment Insurance Code or for any amounts required to be deducted, withheld, and paid over to the Employment Development Department from the wages of employees of said Principal and its Subcontractors with respect to such work or labor the Surety on this bond will pay for the same to the extent hereinafter set forth.

NOW THEREFORE, we, the Principal and _____ as Surety, are held and firmly bound unto District in the penal sum of _____ Dollars (\$_____) lawful money of the United States of America, 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.

THE CONDITION OF THIS OBLIGATION IS SUCH that if said Principal, his or its subcontractors, heirs, executors, administrators, successors or assigns, shall fail to pay any of the persons named in Section 9100 of the Civil Code, fail to pay for any materials, provisions or other supplies, used in, upon, for or about the performance of the work contracted to be done, or for any work or labor thereon of any kind, or amounts due under the Unemployment Insurance Code with respect to work or labor performed under the contract, or for any amounts required to be deducted, withheld, and paid over to the Employment Development Department or Franchise Tax Board from the wages of employees of the contractor and his subcontractors pursuant to Section 18663 of the Revenue and Taxation Code, with respect to such work and labor the Surety or Sureties will pay for the same, in an amount not exceeding the sum herein above specified, and also, in case suit is brought upon this bond, all litigation expenses incurred by District in such suit, including reasonable attorneys' fees, court costs, expert witness fees and investigation expenses.

This bond shall inure to the benefit of any of the persons named in Section 9100 of the Civil Code so as to give a right of action to such persons or their assigns in any suit brought upon this bond.

It is further stipulated and agreed that the Surety on this bond shall not be exonerated or released from the obligation of this bond by any change, extension of time for performance, addition, alteration or modification in, to, or of any contract, plans, specifications, or agreement pertaining or relating to any scheme or work of improvement herein above described, or pertaining or relating to the furnishing of labor, materials, or equipment therefore, nor by any change or modification of any terms of payment or extension of the time for any payment pertaining or relating to any scheme or work of improvement herein above described, nor by any rescission or attempted rescission or attempted rescission of the contract, agreement or bond, nor by any conditions precedent or subsequent in the bond attempting to limit the right of recovery of claimants otherwise entitled to recover under any such contract or agreement or under the bond,

**SECTION 00100 – CONTRACT DOCUMENTS
PAYMENT BOND**

nor by any fraud practiced by any person other than the claimant seeking to recover on the bond and that this bond be construed most strongly against the Surety and in favor of all persons for whose benefit such bond is given, and under no circumstances shall Surety be released from liability to those for whose benefit such bond has been given, by reason of any breach of contract between the owner or District and original contractor or on the part of any obligee named in such bond, but the sole conditions of recovery shall be that claimant is a person described in Section 9100 of the Civil Code, and has not been paid the full amount of his claim and that Surety does hereby waive notice of any such change, extension of time, addition, alteration or modification herein mentioned.

IN WITNESS WHEREOF, we have hereunto set our hands and seals this _____ day of _____, 20__.

(Corporate Seal)

Contractor/ Principal

By _____

Title _____

(Corporate Seal)

Surety

By _____

Attorney-in-Fact

(Attach Attorney-in-Fact Certificate)

Title _____

Signatures of those signing for the Contractor and Surety must be notarized and evidence of corporate authority attached.

The rate of premium on this bond is _____ per thousand. The total amount of premium charges, \$_____.
(The above must be filled in by corporate attorney.)

THIS IS A REQUIRED FORM

Any claims under this bond may be addressed to:

(Name and Address of Surety)

(Name and Address of Agent or Representative for service of process in California, if different from above)

(Telephone number of Surety and Agent or Representative for service of process in California)

**SECTION 00100 – CONTRACT DOCUMENTS
PAYMENT BOND**

Notary 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 _____

On _____, 20____, before me, _____, Notary Public, personally appeared _____, 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 of Notary Public _____

OPTIONAL

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

CAPACITY CLAIMED BY SIGNER

DESCRIPTION OF ATTACHED DOCUMENT

- Individual
- Corporate Officer

- _____ Title(s)
- Partner(s) Limited
 - General
 - Attorney-In-Fact
 - Trustee(s)
 - Guardian/Conservator
 - Other:
- Signer is representing:
Name Of Person(s) Or Entity(ies)

Title or Type of Document
Number of Pages
Date of Document
Signer(s) Other Than Named Above

NOTE: This acknowledgment is to be completed for Contractor/Principal.

**SECTION 00100 – CONTRACT DOCUMENTS
PAYMENT BOND**

Notary 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 _____

On _____, 20____, before me, _____, Notary Public,
personally
appeared _____, 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 of Notary Public _____

OPTIONAL

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

CAPACITY CLAIMED BY SIGNER

DESCRIPTION OF ATTACHED DOCUMENT

- Individual
- Corporate Officer

Title(s)

Title or Type of Document

- Partner(s)
 - Limited
 - General

Number of Pages

- Attorney-In-Fact
- Trustee(s)
- Guardian/Conservator
- Other:

Date of Document

Signer is representing:
Name Of Person(s) Or Entity(ies)

Signer(s) Other Than Named Above

NOTE: This acknowledgment is to be completed for the Attorney-in-Fact. The Power-of-Attorney to local representatives of the bonding company must also be attached.

END OF PAYMENT BOND

**SECTION 00100 – CONTRACT DOCUMENTS
GENERAL CONDITIONS**

GENERAL CONDITIONS

ARTICLE 1. DEFINITIONS

- a. Acceptable, Acceptance or words of similar import shall be understood to be the acceptance of the Engineer and/or District.
- b. Act of God is an earthquake in excess of a magnitude of 3.5 on the Richter scale and tidal waves.
- c. Approval means written authorization by Engineer and/or District .
- d. Contract Documents includes all documents as stated in the Contract.
- e. District and Contractor are those stated in the Contract. The terms District and Owner may be used interchangeably.
- f. Day shall mean calendar day unless otherwise specifically designated.
- g. Engineer shall mean the General Manager, or his or her designee, of the District, acting either directly or through properly authorized agents, such as agents acting within the scope of the particular duties entrusted to them. Also sometimes referred to as “District’s Representative” or “Representative” in the Contract Documents.
- h. Equal, Equivalent, Satisfactory, Directed, Designated, Selected, As Required and similar words shall mean the written approval, selection, satisfaction, direction, or similar action of the Engineer and/or District.
- i. Indicated, Shown, Detailed, Noted, Scheduled or words of similar meaning shall mean that reference is made to the drawings, unless otherwise noted. It shall be understood that the direction, designation, selection, or similar import of the Engineer and/or District is intended, unless stated otherwise.
- j. Install means the complete installation of any item, equipment or material.
- k. Material shall include machinery, equipment, manufactured articles, or construction such as form work, fasteners, etc., and any other classes of material to be furnished in connection with the Contract. All materials shall be new unless specified otherwise.
- l. Perform shall mean that the Contractor, at Contractor’s expense, shall take all actions necessary to complete The Work, including furnishing of necessary labor, tools, and equipment, and providing and installing Materials that are indicated, specified, or required to complete such performance.
- m. Project is The Work planned by District as provided in the Contract Documents.
- n. Provide shall include provide, complete in place, that is furnish, install, test and make ready for use.

SECTION 00100 – CONTRACT DOCUMENTS
GENERAL CONDITIONS

- o. Recyclable Waste Materials shall mean materials removed from the Project site which are required to be diverted to a recycling center rather than an area landfill. Recyclable Waste Materials include asphalt, concrete, brick, concrete block, and rock.
- p. Specifications means that portion of the Contract Documents consisting of the written requirements for materials, equipment, construction systems, standards and workmanship for the work. Except for Sections 1-9 of the Standard Specifications for Public Works Construction (“Greenbook”), current Edition, which are specifically excluded from incorporation into these Contract Documents, the Work shall be done in accordance with the Greenbook, including all current supplements, addenda, and revisions thereof. In the case of conflict between the Greenbook and the Contract Documents, the Contract Documents shall prevail.
- q. The Work means the entire improvement planned by District pursuant to the Contract Documents.
- r. Work means labor, equipment and materials incorporated in, or to be incorporated in the construction covered by the Contract Documents.

ARTICLE 2. CONTRACT DOCUMENTS

- a. **Contract Documents.** The Contract Documents are complementary, and what is called for by one shall be as binding as if called for by all.
- b. **Interpretations.** The Contract Documents are intended to be fully cooperative and to be complementary. If Contractor observes that any documents are in conflict, the Contractor shall promptly notify the Engineer in writing. In case of conflicts between the Contract Documents, the order of precedence shall be as follows:
 - 1. Change Orders or Work Change Directives
 - 2. Addenda
 - 3. Special Provisions (or Special Conditions)
 - 4. Technical Specifications
 - 5. Plans (Contract Drawings)
 - 6. Contract
 - 7. General Conditions
 - 8. Instructions to Bidders
 - 9. Notice Inviting Bids
 - 10. Contractor’s Bid Forms
 - 11. Greenbook (Sections 1-9 excluded)
 - 12. Standard Plans
 - 13. Reference Documents

With reference to the Drawings, the order of precedence shall be as follows:

- 1. Figures govern over scaled dimensions
- 2. Detail drawings govern over general drawings
- 3. Addenda or Change Order drawings govern over Contract Drawings
- 4. Contract Drawings govern over Standard Drawings

**SECTION 00100 – CONTRACT DOCUMENTS
GENERAL CONDITIONS**

5. Contract Drawings govern over Shop Drawings
- c. **Conflicts in Contract Documents.** Notwithstanding the orders of precedence established above, in the event of conflicts, the higher standard shall always apply.
- d. **Organization of Contract Documents.** Organization of the Contract Documents into divisions, sections, and articles, and arrangement of drawings shall not control the Contractor in dividing The Work among subcontractors or in establishing the extent of Work to be performed by any trade.

ARTICLE 3. CONTRACTS DOCUMENTS: COPIES & MAINTENANCE

Contractor will be furnished, free of charge, **two** copies of the Contract Documents. Additional copies may be obtained at cost of reproduction.

Contractor shall maintain a clean, undamaged set of Contract Documents at the Project site.

ARTICLE 4. DETAIL DRAWINGS AND INSTRUCTIONS

- a. **Examination of Contract Documents.** Before commencing any portion of The Work, Contractor shall again carefully examine all applicable Contract Documents, the Project site and other information given to Contractor as to materials and methods of construction and other Project requirements. Contractor shall immediately notify the Engineer of any potential error, inconsistency, ambiguity, conflict or lack of detail or explanation. If Contractor performs, permits, or causes the performance of any Work which is in error, inconsistent or ambiguous, or not sufficiently detailed or explained, Contractor shall bear any and all resulting costs, including, without limitation, the cost of correction. In no case shall the Contractor or any subcontractor proceed with Work if uncertain as to the applicable requirements.
- b. **Additional Instructions.** After notification of any error, inconsistency, ambiguity, conflict or lack of detail or explanation, the Engineer will provide any required additional instructions, by means of drawings or other written direction, necessary for proper execution of Work.
- c. **Quality of Parts, Construction and Finish.** All parts of The Work shall be of the best quality of their respective kinds and the Contractor must use all diligence to inform itself fully as to the required construction and finish. In no case shall Contractor proceed with The Work without obtaining first from the Engineer such Approval may be necessary for the proper performance of Work.
- d. **Contractor's Variation from Contract Document Requirements.** If it is found that the Contractor has varied from the requirements of the Contract Documents including the requirement to comply with all applicable laws, ordinances, rules and regulations, the Engineer may at any time, before or after completion of the Work, order the improper Work removed, remade or replaced by the Contractor at the Contractor's expense.

**SECTION 00100 – CONTRACT DOCUMENTS
GENERAL CONDITIONS**

ARTICLE 5. EXISTENCE OF UTILITIES AT THE WORK SITE

- a. District has endeavored to determine the existence of utilities at the Project site from the records of the owners of known utilities in the vicinity of the Project. The positions of these utilities as derived from such records are shown on the Plans.
- b. No excavations were made to verify the locations shown for underground utilities. The service connections to these utilities are not shown on the plans. It shall be the responsibility of the Contractor to determine the exact location of all service connections. The Contractor shall make its own investigations, including exploratory excavations, to determine the locations and type of service connections, prior to commencing Work which could result in damage to such utilities. The Contractor shall immediately notify District in writing of any utility discovered in a different position than shown on the Plans or which is not shown on the Plans.
- c. All water meters, water valves, fire hydrants, electrical utility vaults, telephone vaults, gas utility valves, and other subsurface structures shall be relocated or adjusted to final grade by the Contractor. Locations of existing utilities shown on the Plans are approximate and may not be complete. The Contractor shall be responsible for coordinating its Work with all utility companies during the construction of The Work.
- d. Notwithstanding the above, pursuant to Section 4215 of the Government Code, District has the responsibility to identify, with reasonable accuracy, main or trunkline facilities on the plans and specifications. In the event that main or trunkline utility facilities are not identified with reasonable accuracy in the plans and specifications made a part of the invitation for bids, District shall assume the responsibility for their timely removal, relocation, or protection.
- e. Contractor, except in an emergency, shall contact the appropriate regional notification center, Southern California Underground Service Alert at 1-800-227-2600 at least two working days prior to commencing any excavation if the excavation will be performed in an area which is known, or reasonably should be known, to contain subsurface installations other than the underground facilities owned or operated by District, and obtain an inquiry identification number from that notification center. No excavation shall be commenced or carried out by the Contractor unless such an inquiry identification number has been assigned to the Contractor or any subcontractor of the Contractor and District has been given the identification number by the Contractor.

ARTICLE 6. SCHEDULE

- a. **Estimated Schedule.** Within fourteen (14) days after the issuance of the Notice to Proceed, Contractor shall prepare a Project schedule and shall submit this to the Engineer for Approval. The receipt or Approval of any schedules by the Engineer or District shall not in any way relieve the Contractor of its obligations under the Contract Documents. The Contractor is fully responsible to determine and provide for any and all staffing and resources at levels which allow for good quality and timely completion of the Project. Contractor's failure to incorporate all elements of Work required for the performance of the Contract or any inaccuracy in the schedule shall not excuse the Contractor from performing all Work required for a completed Project within the specified Contract time

**SECTION 00100 – CONTRACT DOCUMENTS
GENERAL CONDITIONS**

period. If the required schedule is not received by the time the first payment under the Contract is due, Contractor shall not be paid until the schedule is received, reviewed and accepted by the Engineer.

- b. **Schedule Contents.** The schedule shall allow enough time for inclement weather. The schedule shall indicate the beginning and completion dates of all phases of construction; critical path for all critical, sequential time related activities; and “float time” for all “slack” or “gaps” in the non-critical activities. The schedule shall clearly identify all staffing and other resources which in the Contractor’s judgment are needed to complete the Project within the time specified for completion. Schedule duration shall match the Contract time. Schedules indicating early completion will be rejected.
- c. **Schedule Updates.** Contractor shall continuously update its construction schedule. Contractor shall submit an updated and accurate construction schedule to the Engineer whenever requested to do so by Engineer and with each progress payment request. The Engineer may withhold progress payments or other amounts due under the Contract Documents if Contractor fails to submit an updated and accurate construction schedule.

ARTICLE 7. SUBSTITUTIONS

- a. Pursuant to Public Contract Code Section 3400(b) District may make a finding that is described in the invitation for bids that designates certain products, things, or services by specific brand or trade name.
- b. Unless specifically designated in the Contract Documents, whenever any material, process, or article is indicated or specified by grade, patent, or proprietary name or by name of manufacturer, such Specifications shall be deemed to be used for the purpose of facilitating the description of the material, process or article desired and shall be deemed to be followed by the words “or equal.” Contractor may, unless otherwise stated, offer for substitution any material, process or article which shall be substantially equal or better in every respect to that so indicated or specified in the Contract Documents. However, District may have adopted certain uniform standards for certain materials, processes and articles.
- c. Contractor shall submit requests, together with substantiating data, for substitution of any “or equal” material, process or article no later than thirty-five (35) days after award of the Contract. To facilitate the construction schedule and sequencing, some requests may need to be submitted before thirty-five (35) days after award of Contract. Provisions regarding submission of “or equal” requests shall not in any way authorize an extension of time for performance of this Contract. If a proposed “or equal” substitution request is rejected, Contractor shall be responsible for providing the specified material, process or article. The burden of proof as to the equality of any material, process or article shall rest with the Contractor. District has the complete and sole discretion to determine if a material, process or article is an “or equal” material, process or article that may be substituted.
- d. Data required to substantiate requests for substitutions of an “or equal” material, process or article data shall include a signed affidavit from the Contractor stating that, and describing how, the substituted “or equal” material, process or article is equivalent to that

**SECTION 00100 – CONTRACT DOCUMENTS
GENERAL CONDITIONS**

specified in every way except as listed on the affidavit. Substantiating data shall include any and all illustrations, specifications, and other relevant data including catalog information which describes the requested substituted “or equal” material, process or article, and substantiates that it is an “or equal” to the material, process or article. The substantiating data must also include information regarding the durability and lifecycle cost of the requested substituted “or equal” material, process or article. Failure to submit all the required substantiating data, including the signed affidavit, to District in a timely fashion will result in the rejection of the proposed substitution.

- e. The Contractor shall bear all of District’s costs associated with the review of substitution requests.
- f. The Contractor shall be responsible for all costs related to a substituted “or equal” material, process or article.
- g. Contractor is directed to the Special Conditions (if any) to review any findings made pursuant to Public Contract Code section 3400.

ARTICLE 8. SHOP DRAWINGS

- a. Contractor shall check and verify all field measurements and shall submit with such promptness as to provide adequate time for review and cause no delay in his own Work or in that of any other contractor, subcontractor, or worker on the Project, six (6) copies of all shop or setting drawings, calculations, schedules, and materials list, and all other provisions required by the Contract. Contractor shall sign all submittals affirming that submittals have been reviewed and approved by Contractor prior to submission to Engineer. Each signed submittal shall affirm that the submittal meets all the requirements of the Contract Documents except as specifically and clearly noted and listed on the cover sheet of the submittal.
- b. Contractor shall make any corrections required by the Engineer, and file with the Engineer six (6) corrected copies each, and furnish such other copies as may be needed for completion of the Work. Engineer’s approval of shop drawings shall not relieve Contractor from responsibility for deviations from the Contract Documents unless Contractor has, in writing, called Engineer’s attention to such deviations at time of submission and has secured the Engineer’s written Approval. Engineer’s Approval of shop drawings shall not relieve Contractor from responsibility for errors in shop drawings.

ARTICLE 9. SUBMITTALS

- a. Contractor shall furnish to the Engineer for approval, prior to purchasing or commencing any Work, a log of all samples, material lists and certifications, mix designs, schedules, and other submittals, as required in the specifications. The log shall indicate whether samples will be provided in accordance with other provisions of this Contract.
- b. Contractor will provide samples and submittals, together with catalogs and supporting data required by the Engineer, to the Engineer within a reasonable time period to provide for adequate review and avoid delays in the Work.

**SECTION 00100 – CONTRACT DOCUMENTS
GENERAL CONDITIONS**

- c. These requirements shall not authorize any extension of time for performance of this Contract. Engineer will check and approve such samples, but only for conformance with design concept of work and for compliance with information given in the Contract Documents. Work shall be in accordance with approved samples and submittals.

ARTICLE 10. MATERIALS

- a. Except as otherwise specifically stated in the Contract Documents, Contractor shall provide and pay for all materials, labor, tools, equipment, water, lights, power, transportation, superintendence, temporary constructions of every nature, and all other services and facilities of every nature whatsoever necessary to execute and complete this Contract within specified time.
- b. Unless otherwise specified, all materials shall be new and the best of their respective kinds and grades as noted and/or specified, and workmanship shall be of good quality.
- c. Materials shall be furnished in ample quantities and at such times as to ensure uninterrupted progress of The Work and shall be stored properly and protected as required by the Contract Documents. Contractor shall be entirely responsible for damage or loss by weather or other causes to materials or Work.
- d. No materials, supplies, or equipment for Work under this Contract shall be purchased subject to any chattel mortgage or under a conditional sale or other agreement by which an interest therein or in any part thereof is retained by the seller or supplier. Contractor warrants good title to all material, supplies, and equipment installed or incorporated in the work and agrees upon completion of all work to deliver the Project, to District free from any claims, liens, or charges.
- e. Materials shall be stored on the Project site in such manner so as not to interfere with any operations of District or any independent contractor.

ARTICLE 11. CONTRACTOR'S SUPERVISION

Contractor shall continuously keep at the Project site, a competent and experienced full-time Project superintendent approved by District. Superintendent must be able to proficiently speak, read and write in English. Contractor shall continuously provide efficient supervision of the Project.

ARTICLE 12. WORKERS

- a. Contractor shall at all times enforce strict discipline and good order among its employees. Contractor shall not employ on the Project any unfit person or any one not skilled in the Work assigned to him or her.
- b. Any person in the employ of the Contractor whom District may deem incompetent or unfit shall be dismissed from The Work and shall not be employed on this Project except with the written Approval of District.

**SECTION 00100 – CONTRACT DOCUMENTS
GENERAL CONDITIONS**

ARTICLE 13. SUBCONTRACTORS

- a. Contractor agrees to bind every subcontractor to the terms of the Contract Documents as far as such terms are applicable to subcontractor's portion of The Work. Contractor shall be as fully responsible to District for the acts and omissions of its subcontractors and of persons either directly or indirectly employed by its subcontractors, as Contractor is for acts and omissions of persons directly employed by Contractor. Nothing contained in these Contract Documents shall create any contractual relationship between any subcontractor and District.
- b. District reserves the right to Approve all subcontractors. District's Approval of any subcontractor under this Contract shall not in any way relieve Contractor of its obligations in the Contract Documents.
- c. Prior to substituting any subcontractor listed in the Bid Forms, Contractor must comply with the requirements of the Subletting and Subcontracting Fair Practices Act pursuant to California Public Contract Code section 4100 et seq.

ARTICLE 14. PERMITS AND LICENSES

Permits and licenses necessary for prosecution of The Work shall be secured and paid for by Contractor, unless otherwise specified in the Contract Documents.

- a. Contractor shall obtain and pay for all other permits and licenses required for The Work, including excavation permit and for plumbing, mechanical and electrical work and for operations in or over public streets or right of way under jurisdiction of public agencies other than District.
- b. The Contractor shall arrange and pay for all off-site inspection of the Work related to permits and licenses, including certification, required by the specifications, drawings, or by governing authorities, except for such off-site inspections delineated as District's responsibility pursuant to the Contract Documents.
- c. Before Acceptance of the Project, the Contractor shall submit all licenses, permits, certificates of inspection and required approvals to District.

ARTICLE 15. UTILITY USAGE

- a. All temporary utilities, including but not limited to electricity, water, gas, and telephone, used on the Work shall be furnished and paid for by Contractor. Contractor shall Provide necessary temporary distribution systems, including meters, if necessary, from distribution points to points on The Work where the utility is needed. Upon completion of The Work, Contractor shall remove all temporary distribution systems.
- b. Contractor shall provide necessary and adequate utilities and pay all costs for water, electricity, gas, oil, and sewer charges required for completion of the Project.
- c. All permanent meters Installed shall be listed in the Contractor's name until Project Acceptance.

**SECTION 00100 – CONTRACT DOCUMENTS
GENERAL CONDITIONS**

- d. If the Contract is for construction in existing facilities, Contractor may, with prior written Approval of District, use District's existing utilities by compensating District for utilities used by Contractor.

ARTICLE 16. INSPECTION FEES FOR PERMANENT UTILITIES

All inspection fees and other municipal charges for permanent utilities including, but not limited to, sewer, electrical, phone, gas, water, and irrigation shall be paid for by District. Contractor shall be responsible for arranging the payment of such fees, but inspection fees and other municipal fees relating to permanent utilities shall be paid by District. Contractor may either request reimbursement from District for such fees, or shall be responsible for arranging and coordination with District for the payment of such fees.

ARTICLE 17. TRENCHES

- a. Trenches Five Feet or More in Depth. The Contractor shall submit to District, in advance of excavation, a detailed plan showing the design of shoring, bracing, sloping or other provisions to be made for worker protection from the hazard of caving ground during the excavation of any trench or trenches five feet or more in depth. If the plan varies from shoring system standards, the plan shall be prepared by a registered civil or structural engineer. The plan shall not be less effective than the shoring, bracing, sloping, or other provisions of the Construction Safety Orders, as defined in the California Code of Regulations.
- b. Excavations Deeper than Four Feet. If work under this Contract involves digging trenches or other excavation that extends deeper than four feet below the surface, Contractor shall promptly, and before the following conditions are disturbed, notify District, in writing, of any:
- 1) Material that the Contractor believes may be material that is hazardous waste, as defined in Section 25117 of the Health and Safety Code, that is required to be removed to a Class I, Class II, or Class III disposal site in accordance with provisions of existing law.
 - 2) Subsurface or latent physical conditions at the site differing from those indicated.
 - 3) Unknown physical conditions at the site of any unusual nature, different materially from those ordinarily encountered and generally recognized as inherent in work of the character provided for in the Contract.

District shall promptly investigate the conditions, and if it finds that the conditions do so materially differ, or do involve hazardous waste, and cause a decrease or increase in Contractor's cost of, or the time required for, performance of any part of The Work, shall issue a change order under the procedures described in the Contract Documents.

In the event that a dispute arises between District and the Contractor as to whether the conditions materially differ, or involve hazardous waste, or cause a decrease or increase in the Contractor's cost of, or time required for, performance of any part of The Work, the Contractor shall not be excused from any scheduled completion date provided for by the Contract, but shall proceed with all Work to be performed under the Contract. Contractor

**SECTION 00100 – CONTRACT DOCUMENTS
GENERAL CONDITIONS**

shall retain any and all rights provided either by contract or by law which pertain to the resolution of disputes and protests between the parties.

ARTICLE 18. DIVERSION OF RECYCLABLE WASTE MATERIALS

In compliance with the applicable District's waste reduction and recycling efforts, Contractor shall divert all Recyclable Waste Materials to appropriate recycling centers. Contractor will be required to submit weight tickets and written proof of diversion with its monthly progress payment requests. Contractor shall complete and execute any certification forms required by District or other applicable agencies to document Contractor's compliance with these diversion requirements. All costs incurred for these waste diversion efforts shall be the responsibility of the Contractor.

ARTICLE 19. REMOVAL OF HAZARDOUS MATERIALS

Should Contractor encounter material reasonably believed to be polychlorinated biphenyl (PCB) or other toxic wastes and hazardous materials which have not been rendered harmless at the Project site, the Contractor shall immediately stop work at the affected Project site and shall report the condition to District in writing. District shall contract for any services required to directly remove and/or abate PCBs and other toxic wastes and hazardous materials, if required by the Project site(s), and shall not require the Contractor to subcontract for such services. The Work in the affected area shall not thereafter be resumed except by written agreement of District and Contractor.

ARTICLE 20. SANITARY FACILITIES

Contractor shall provide sanitary temporary toilet buildings for the use of all workers. All toilets shall comply with all applicable federal, state and local laws, codes, ordinances, and regulations. Toilets shall be kept supplied with toilet paper and shall have workable door fasteners. Toilets shall be serviced no less than once weekly and shall be present in a quantity of not less than 1 per 20 workers as required by CAL-OSHA regulation. The toilets shall be maintained in a sanitary condition at all times. Use of toilet facilities in The Work under construction shall not be permitted. Any other Sanitary Facilities required by CAL-OSHA shall be the responsibility of the Contractor.

ARTICLE 21. AIR POLLUTION CONTROL

Contractor shall comply with all air pollution control rules, regulations, ordinances and statutes. All containers of paint, thinner, curing compound, solvent or liquid asphalt shall be labeled to indicate that the contents fully comply with the applicable material requirements.

ARTICLE 22. COMPLIANCE WITH STATE STORM WATER PERMIT

- a. Contractor shall be required to keep itself and all subcontractors, staff, and employees fully informed of and in compliance with all local, state and federal laws, rules and regulations that may impact, or be implicated by the performance of the Work including, without limitation, all applicable provisions of local ordinances regulating discharges of storm water; the Federal Water Pollution Control Act (33 U.S.C. § 1251 *et seq.*); the California Porter-Cologne Water Quality Control Act (Water Code § 13000 *et seq.*); and any and all regulations, policies, or permits issued pursuant to any such authority. These include, but are not limited to California Regional Water Quality Control Board, San Diego Region, Order No. R9-2013-0001, as amended by R9-2015-0001, NPDES Order No.

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CAS0109266 and the State Water Resources Control Board (State Board) Water Quality Order No. 2009-0009-DWQ, National Pollutant Discharge Elimination System General Permit for Storm Water Discharges Associated with Construction Activity (Permit or CGP) and any amendment, renewal or reissuance thereof, for all projects that involve construction on or disturbance of one acre or more of land or which are part of a larger common plan of development or sale.

- b. Contractor shall be responsible for filing the Notice of Intent and for obtaining coverage under and complying with the Permit. Contractor shall be solely responsible for preparing and implementing a Storm Water Pollution Prevention Plan (“SWPPP”) prior to initiating Work, revising the SWPPP as required by working conditions and coordinating all submittals with the District’s Legally Responsible Person and/or Authorized Signatory, as those terms are defined in the Permit. The District reserves the right to review all SWPPPs to determine the adequacy of the document and to require any necessary corrections prior to uploading the SWPPP to the State’s SMARTS database.
- c. The District retains the right to procure coverage under the Permit for the Project site if the Contractor fails to draft a satisfactory NOI or SWPPP or proceed in a manner that is satisfactory to the District. Any costs incurred by the District in procuring coverage under the Permit, or drafting an NOI or SWPPP shall be paid by the Contractor.
- d. In bidding on this Contract, it shall be Contractor’s responsibility to evaluate the cost of procuring the Permit and preparing the SWPPP as well as complying with the SWPPP and any necessary revision to the SWPPP, including the cost of hiring a Qualified SWPPP Developer to prepare a SWPPP, Erosion/Sediment Control Plan sheets acceptable to the District, and the cost of hiring a Qualified SWPPP Practitioner to inspect the project and document each inspection. Contractor shall comply with all requirements of the State Water Resources Control Board. Contractor shall include all costs of compliance with specified requirements in the Contract amount.
- e. Contractor shall be responsible for procuring, implementing and maintaining compliance with the Permit and the SWPPP, including the standard provisions, monitoring and reporting requirements as required by the Permit. Contractor shall provide copies of all reports and monitoring information to the Engineer. If the Contractor has failed or is unable to maintain compliance with the Permit, the District reserves the right to implement the approved SWPPP at the Project site, and hire additional contractors to maintain compliance. Whether Contractor has adequately maintained compliance with the Permit shall be the District’s sole determination. In the event that Contractor has failed or is unable to maintain compliance with the Permit, any costs incurred by the District in implementing the approved SWPPP, or otherwise maintaining compliance with the Permit shall be paid by the Contractor.
- f. Contractor shall comply with the lawful requirements of any applicable municipality, District, drainage district, and other local agencies regarding discharges of storm water to separate storm drain system or other watercourses under their jurisdiction, including applicable requirements in municipal storm water management programs.

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- g. Storm, surface, nuisance, or other waters may be encountered at various times during construction of The Work. Therefore, the Contractor, by submitting a Bid, hereby acknowledges that it has investigated the risk arising from such waters, has prepared its Bid accordingly, and assumes any and all risks and liabilities arising therefrom.
- h. Failure to comply with the Permit is in violation of federal and state law. Contractor hereby agrees to indemnify and hold harmless District, its officials, officers, agents, employees and authorized volunteers from and against any and all claims, demands, losses or liabilities of any kind or nature which District, its officials, officers, agents, employees and authorized volunteers may sustain or incur for noncompliance with the Permit arising out of or in connection with the Project, except for liability resulting from the sole established negligence, willful misconduct or active negligence of District, its officials, officers, agents, employees or authorized volunteers. District may seek damages from Contractor for delay in completing the Contract in accordance with the Contract Documents, caused by Contractor's failure to comply with the laws, regulations and policies described in this Article, or any other relevant water quality law, regulation, or policy.
- i. The District reserves the right to defend any enforcement action or civil action brought against the District for Contractor's failure to comply with any applicable water quality law, regulation, or policy. Contractor hereby agrees to be bound by, and to reimburse the District for the costs associated with, any settlement reached between the District and any relevant enforcement entity.

ARTICLE 23. CLEANING UP

- a. Contractor at all times shall keep premises free from debris such as waste, rubbish, and excess materials and equipment. Contractor shall not store debris under, in, or about the premises. Upon completion of Work, Contractor shall clean the interior and exterior of the building or improvement including fixtures, equipment, walls, floors, ceilings, roofs, window sills and ledges, horizontal projections, and any areas where debris has collected so surfaces are free from foreign material or discoloration. Contractor shall clean and polish all glass, plumbing fixtures, and finish hardware and similar finish surfaces and equipment and contractor shall also remove temporary fencing, barricades, planking and construction toilet and similar temporary facilities from site. Contractor shall also clean all buildings, asphalt and concrete areas to the degree necessary to remove oil, grease, fuel, or other stains caused by Contractor operations or equipment.
- b. Contractor shall fully clean up the site at the completion of The Work. If the Contractor fails to immediately clean up at the completion of The Work, District may do so and the cost of such clean up shall be charged back to the Contractor.

ARTICLE 24. LAYOUT AND FIELD ENGINEERING

All field engineering required for laying out The Work and establishing grades for earthwork operations shall be furnished by the Contractor at its expense. Layout shall be done by a registered civil engineer Approved by the Engineer. Any required "as-built" drawings of the Work shall be prepared by the registered civil engineer.

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ARTICLE 25. EXCESSIVE NOISE

- a. The Contractor shall use only such equipment on the work and in such state of repair so that the emission of sound therefrom is within the noise tolerance level of that equipment as established by CAL-OSHA.
- b. The Contractor shall comply with the most restrictive of the following: (1) local sound control and noise level rules, regulations and ordinances and (2) the requirements contained in these Contract Documents, including hours of operation requirements. No internal combustion engine shall be operated on the Project without a muffler of the type recommended by the manufacturer. Should any muffler or other control device sustain damage or be determined to be ineffective or defective, the Contractor shall promptly remove the equipment and shall not return said equipment to the job until the device is repaired or replaced. Said noise and vibration level requirements shall apply to all equipment on the job or related to the job, including but not limited to, trucks, transit mixers or transit equipment that may or may not be owned by the Contractor.

ARTICLE 26. TESTS AND INSPECTIONS

- a. If the Contract Documents, the Engineer, or any instructions, laws, ordinances, or public authority require any part of The Work to be tested or Approved, Contractor shall provide the Engineer at least two (2) working days' notice of its readiness for observation or inspection. If inspection is by a public authority other than District, Contractor shall promptly inform District of the date fixed for such inspection. Required certificates of inspection (or similar) shall be secured by Contractor. Costs for District testing and District inspection shall be paid by District. Costs of tests for Work found not to be in compliance shall be paid by the Contractor.
- b. If any Work is done or covered up without the required testing or approval, the Contractor shall uncover or deconstruct the Work, and the Work shall be redone after completion of the testing at the Contractor's cost in compliance with the Contract Documents.
- c. Where inspection and testing are to be conducted by an independent laboratory or agency, materials or samples of materials to be inspected or tested shall be selected by such laboratory or agency, or by District, and not by Contractor. All tests or inspections of materials shall be made in accordance with the commonly recognized standards of national organizations.
- d. In advance of manufacture of materials to be supplied by Contractor which must be tested or inspected, Contractor shall notify District so that District may arrange for testing at the source of supply. Any materials which have not satisfactorily passed such testing and inspection shall not be incorporated into The Work.
- e. If the manufacture of materials to be inspected or tested will occur in a plant or location outside the geographic limits of District, the Contractor shall pay for any excessive or unusual costs associated with such testing or inspection, including but not limited to excessive travel time, standby time and required lodging.

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- f. Reexamination of Work may be ordered by District. If so ordered, Work must be uncovered or deconstructed by Contractor. If Work is found to be in accordance with the Contract Documents, District shall pay the costs of reexamination and reconstruction. If such work is found not to be in accordance with the Contract Documents, Contractor shall pay all costs.

ARTICLE 27. PROTECTION OF WORK AND PROPERTY

- a. The Contractor shall be responsible for all damages to persons or property that occur as a result of The Work. Contractor shall be responsible for the proper care and protection of all materials delivered and Work performed until completion and final Acceptance by District. All Work shall be solely at the Contractor's risk. Contractor shall adequately protect adjacent property from settlement or loss of lateral support as necessary. Contractor shall comply with all applicable safety laws and building codes to prevent accidents or injury to persons on, about, or adjacent to the Project site where Work is being performed. Contractor shall erect and properly maintain at all times, as required by field conditions and progress of work, all necessary safeguards, signs, barriers, lights, and watchmen for protection of workers and the public, and shall post danger signs warning against hazards created in the course of construction.
- b. In an emergency affecting safety of life or of work or of adjoining property, Contractor, without special instruction or authorization from the Engineer, is hereby permitted to act to prevent such threatened loss or injury; and Contractor shall so act, without appeal, if so authorized or instructed by the Engineer or District. Any compensation claimed by Contractor on account of emergency work shall be determined by and agreed upon by District and the Contractor.
- c. Contractor shall provide such heat, covering, and enclosures as are necessary to protect all Work, materials, equipment, appliances, and tools against damage by weather conditions.
- d. Contractor shall take adequate precautions to protect existing sidewalks, curbs, pavements, utilities, and other adjoining property and structures, and to avoid damage thereto, and Contractor shall repair any damage thereto caused by The Work operations. Contractor shall:
 - 1) Enclose the working area with a substantial barricade, and arrange work to cause minimum amount of inconvenience and danger to the public.
 - 2) Provide substantial barricades around any shrubs or trees indicated to be preserved.
 - 3) Deliver materials to the Project site over a route designated by the Engineer.
 - 4) Provide any and all dust control required and follow the Applicable air quality regulations as appropriate. If the Contractor does not comply, District shall have the immediate authority to provide dust control and deduct the cost from payments to the Contractor.
 - 5) Confine Contractor's apparatus, the storage of materials, and the operations of its workers to limits required by law, ordinances, permits, or directions of the

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Engineer. Contractor shall not unreasonably encumber the Project site with its materials.

- 6) Take care to prevent disturbing or covering any survey markers, monuments, or other devices marking property boundaries or corners. If such markers are disturbed by accident, they shall be replaced by an approved civil engineer or land surveyor, at no cost to District.
 - 7) Ensure that existing facilities, fences and other structures are all adequately protected and that, upon completion of all Work, all facilities that may have been damaged are restored to a condition acceptable to District.
 - 8) Preserve and protect from injury all buildings, pole lines and all direction, warning and mileage signs that have been placed within the right-of-way.
 - 9) At the completion of work each day, leave the Project site in a clean, safe condition.
 - 10) Comply with any stage construction and traffic handling plans. Access to residences and businesses shall be maintained at all times.
- e. These precautionary measures will apply continuously and not be limited to normal working hours. Full compensation for the Work involved in the preservation of life, safety and property as above specified shall be considered as included in the prices paid for the various contract items of Work, and no additional allowance will be made thereto.
- f. Should damage to persons or property occur as a result of The Work, Contractor shall be responsible for proper investigation, documentation, including video or photography, to adequately memorialize and make a record of what transpired. District shall be entitled to inspect and copy any such documentation, video, or photographs.

ARTICLE 28. CONTRACTORS MEANS AND METHODS

Contractor is solely responsible for the means and methods utilized to Perform The Work. In no case shall the Contractor's means and methods deviate from commonly used industry standards.

ARTICLE 29. AUTHORIZED REPRESENTATIVES

District shall designate representatives, who shall have the right to be present at the Project site at all times. District may designate an inspector who shall have the right to observe all of the Contractor's Work. The inspector is not authorized to make changes in the Contract Documents. The inspector shall not be responsible for the Contractor's failure to carry out The Work in accordance with the Contract Documents. Contractor shall provide safe and proper facilities for such access.

ARTICLE 30. HOURS OF WORK

- a. Eight (8) hours of work shall constitute a legal day's work. The Contractor and each subcontractor shall forfeit, as penalty to District, twenty-five dollars (\$25) for each worker employed in the execution of Work by the Contractor or any subcontractor for each day during which such worker is required or permitted to work more than eight (8) hours in any one day and forty (40) hours in any week in violation of the provisions of the Labor Code,

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and in particular, Section 1810 to Section 1815, except as provided in Labor Code Section 1815.

- b. Work shall be accomplished on a regularly scheduled eight (8) hour per day work shift basis, Monday through Friday, between the hours of 7:00 a.m. and 5:00 p.m.
- c. It shall be unlawful for any person to operate, permit, use, or cause to operate any of the following at the Project site, other than between the hours of 7:00 a.m. to 5:00 p.m., Monday through Friday, with no Work allowed on District-observed holidays, unless otherwise Approved by the Engineer:
 - 1) Powered Vehicles
 - 2) Construction Equipment
 - 3) Loading and Unloading Vehicles
 - 4) Domestic Power Tool.

ARTICLE 31. PAYROLL RECORDS

- a. Pursuant to Labor Code Section 1776, the Contractor and each subcontractor shall maintain weekly certified payroll records showing the name, address, social security number, work classification, straight time and overtime hours paid each day and week, and the actual per diem wages paid to each journeyman, apprentice, worker or other employee employed in connection with the work. Contractor shall certify under penalty of perjury that records maintained and submitted by Contractor are true and accurate. Contractor shall also require subcontractor(s) to certify weekly payroll records under penalty of perjury.
- b. In accordance with Labor Code section 1771.4, the Contractor and each subcontractor shall furnish the certified payroll records directly to the Department of Industrial Relations (“DIR”) on a weekly basis and in the format prescribed by the DIR, which may include electronic submission. Contractor shall comply with all requirements and regulations from the DIR relating to labor compliance monitoring and enforcement.
- c. The payroll records described herein shall be certified and submitted by the Contractor at a time designated by District. The Contractor shall also provide the following:
 - 1) A certified copy of the employee’s payroll records shall be made available for inspection or furnished to such employee or his or her authorized representative on request.
 - 2) A certified copy of all payroll records described herein shall be made available for inspection or furnished upon request of the DIR.
- d. Unless submitted electronically, the certified payroll records shall be on forms provided by the Division of Labor Standards Enforcement (“DLSE”) of the DIR or shall contain the same information as the forms provided by the DLSE.

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- e. Any copy of records made available for inspection and furnished upon request to the public shall be marked or obliterated in such a manner as to prevent disclosure of an individual's name, address, and social security number. The name and address of the Contractor or any subcontractor shall not be marked or obliterated.
- f. In the event of noncompliance with the requirements of this Section, the Contractor shall have ten (10) days in which to comply subsequent to receipt of written notice specifying any item or actions necessary to ensure compliance with this section. Should noncompliance still be evident after such ten (10) day period, the Contractor shall, as a penalty to District, forfeit One Hundred Dollars (\$100.00) for each day, or portion thereof, for each worker until strict compliance is effectuated. Upon the request of the DIR, such penalties shall be withheld from contract payments.

ARTICLE 32. PREVAILING RATES OF WAGES

- a. The Contractor is aware of the requirements of Labor Code Sections 1720 et seq. and 1770 et seq., as well as California Code of Regulations, Title 8, Section 16000 et seq. ("Prevailing Wage Laws"), which require the payment of prevailing wage rates and the performance of other requirements on certain "public works" and "maintenance" projects. Since this Project involves an applicable "public works" or "maintenance" project, as defined by the Prevailing Wage Laws, and since the total compensation is \$1,000 or more, Contractor agrees to fully comply with such Prevailing Wage Laws. The Contractor shall obtain a copy of the prevailing rates of per diem wages at the commencement of this Agreement from the website of the Division of Labor Statistics and Research of the Department of Industrial Relations located at www.dir.ca.gov/dlsr/. In the alternative, the Contractor may view a copy of the prevailing rates of per diem wages at District. Contractor shall make copies of the prevailing rates of per diem wages for each craft, classification or type of worker needed to perform work on the Project available to interested parties upon request, and shall post copies at the Contractor's principal place of business and at the Project site. Contractor shall defend, indemnify and hold District, its elected officials, officers, employees and agents free and harmless from any claims, liabilities, costs, penalties or interest arising out of any failure or allege failure to comply with the Prevailing Wage Laws.
- b. The Contractor and each subcontractor shall forfeit as a penalty to District not more than Two Hundred Dollars (\$200) for each calendar day, or portion thereof, for each worker paid less than the stipulated prevailing wage rate for any work done by him, or by any subcontract under him, in violation of the provisions of the Labor Code. The difference between such stipulated prevailing wage rate and the amount paid to each worker for each calendar day or portion thereof for which each worker was paid less than the stipulated prevailing wage rate shall be paid to each worker by the Contractor.
- c. Contractor shall post, at appropriate conspicuous points on the Project site, a schedule showing all determined general prevailing wage rates and all authorized deductions, if any, from unpaid wages actually earned.

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ARTICLE 33. EMPLOYMENT OF APPRENTICES

The Contractor's attention is directed to the provisions of Sections 1777.5, 1777.6, and 1777.7 of the Labor Code concerning employment of apprentices by the Contractor or any subcontractor. The Contractor shall obtain a certificate of apprenticeship before employing any apprentice pursuant to Section 1777.5, 1777.6, and 1777.7 of the Labor Code. Information relative to apprenticeship standards, wage schedules, and other requirements may be obtained from the Director of Industrial Relations, the Administrator of Apprenticeships, San Francisco, California, or from the Division of Apprenticeship Standards and its branch offices.

ARTICLE 34. NONDISCRIMINATION/EQUAL EMPLOYMENT OPPORTUNITY

Pursuant to Labor Code Section 1735 and other applicable provisions of law, the Contractor and its subcontractors shall not discriminate against any employee or applicant for employment because of race, color, religion, sex, national origin, age, political affiliation, marital status, or handicap on this Project. The Contractor will take affirmative action to insure that employees are treated during employment or training without regard to their race, color, religion, sex, national origin, age, political affiliation, marital status, or handicap.

ARTICLE 35. LABOR/EMPLOYMENT SAFETY

The Contractor shall maintain emergency first aid treatment for his employees which complies with the Federal Occupational Safety and Health Act of 1970 (29 U.S.C. § 651 et seq.), and California Code of Regulations, Title 8, Industrial Relations Division 1, Department of Industrial Relations, Chapter 4.

ARTICLE 36. WORKERS' COMPENSATION INSURANCE

The Contractor shall Provide, during the life of this Contract, workers' compensation insurance for all of the employees engaged in Work under this Contract, on or at the Project site, and, in case any of sublet Work, the Contractor shall require each subcontractor similarly to provide workers' compensation insurance for all the latter's employees as prescribed by State law. Any class of employee or employees not covered by a subcontractor's insurance shall be covered by the Contractor's insurance. In case any class of employees engaged in work under this Contract, on or at the Project site, is not protected under the Workers' Compensation Statutes, the Contractor shall provide or shall cause a subcontractor to provide, adequate insurance coverage for the protection of such employees not otherwise protected. The Contractor is required to secure payment of compensation to its employees in accordance with the provisions of Section 3700 of the Labor Code. The Contractor shall file with District certificates of its insurance protecting workers. Company or companies providing insurance coverage shall be acceptable to District, if in the form and coverage as set forth in the Contract Documents.

Contractor shall assume the immediate defense of and indemnify and save harmless the District, and its officers, and employees, agents and consultants from all claims, loss, damage, injury, and liability of every kind, nature, and description brought by any person employed or used by Contractor, or any subcontractor, to perform Work under this contract regardless of responsibility or negligence.

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ARTICLE 37. EMPLOYER’S LIABILITY INSURANCE

Contractor shall provide during the life of this Contract, Employer’s Liability Insurance, including Occupational Disease, in the amount of, at least, one million dollars (\$1,000,000.00) per person per accident. Contractor shall provide District with a certificate of Employer’s Liability Insurance. Such insurance shall comply with the provisions of the Contract Documents. The policy shall be endorsed, if applicable, to provide a Borrowed Servant/Alternate Employer Endorsement and contain a Waiver of Subrogation in favor of District.

ARTICLE 38. COMMERCIAL GENERAL LIABILITY INSURANCE

- a. Contractor shall procure and maintain during the life of this Contract and for such other period as may be required herein, at its sole expense, Commercial General Liability insurance coverage at least as broad as the most current ISO Commercial General Liability Coverage (Occurrence Form CG 00 01), including but not limited to, all bodily injury, including death, property damage, personal injury, owned and non-owned equipment, blanket contractual liability, products/completed operations liability, explosion, collapse, under-ground excavation, removal of lateral support, and other covered loss, premises liability, and personal and advertising injury – which may arise from or out of Contractor’s operations, use, and management of the Project site, or the performance of its obligations hereunder. The policy shall not contain any exclusion contrary to this Contract including but not limited to endorsements or provisions limiting coverage for (1) contractual liability (including but not limited to ISO CG 24 26 or 21 39); or cross liability for claims or suits against one insured against another. Policy limits shall not be less than \$5,000,000 per occurrence or the full per occurrence limits of the policies available, whichever is greater for bodily injury, personal injury and property damage. If Commercial General Liability Insurance or other form with a general aggregate limit or products-completed operations aggregate limit is used, either the general aggregate limit shall apply separately to this project/location (with the ISO CG 2503, or ISO CG 2504, or insurer’s equivalent endorsement provided to the District) or the general aggregate limit shall be twice the required occurrence limit.
- b. Such policy shall comply with all the requirements of this Article. The limits set forth herein shall apply separately to each insured against whom claims are made or suits are brought, except with respect to the limits of liability. Further the limits set forth herein shall not be construed to relieve the Contractor from liability in excess of such coverage, nor shall it limit Contractor’s indemnification obligations to District, and shall not preclude District from taking such other actions available to District under other provisions of the Contract Documents or law.
- c. Contractor shall make certain that any and all subcontractors hired by Contractor are insured in accordance with this Contract. If any subcontractor’s coverage does not comply with the foregoing provisions, Contractor shall indemnify and hold District harmless from any damage, loss, cost, or expense, including attorneys’ fees, incurred by District as a result thereof.
- d. All general liability policies provided pursuant to the provisions of this Article shall comply with the provisions of the Contract Documents including the requirements of ARTICLE 41 below.

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- e. All general liability policies shall be written to apply to all bodily injury, including death, property damage, personal injury, owned and non-owned equipment, blanket contractual liability, completed operations liability, explosion, collapse, under-ground excavation, removal of lateral support, premises liability, and personal and advertising injury, and other covered loss, however occasioned, occurring during the policy term, and shall specifically insure the performance by Contractor of that part of the indemnification contained in these General Conditions, relating to liability for injury to or death of persons and damage to property. If the coverage contains one or more aggregate limits, a minimum of 50% of any such aggregate limit must remain available at all times; if over 50% of any aggregate limit has been paid or reserved, District may require additional coverage to be purchased by Contractor to restore the required limits. Contractor may combine primary, umbrella, and as broad as possible excess liability coverage to achieve the total limits indicated above. Any umbrella or excess liability policy shall include the additional insured endorsement described in the Contract Documents. Additionally, all policies of general liability insurance shall permit and Contractor does hereby waive any right of subrogation which any insurer of Contractor may acquire from Contractor by virtue of the payment of any loss.

ARTICLE 39. AUTOMOBILE LIABILITY INSURANCE

Contractor shall take out and maintain at all times during the term of this Contract Automobile Liability Insurance at least as broad as ISO CA 00 01 (covering Symbol 1—Any Auto) in the amount of, at least, one million dollars (\$1,000,000) per accident. Such insurance shall provide coverage for bodily injury and property damage including coverage with respect to the ownership, operation, maintenance, use, loading or unloading of any auto owned, non-owned, leased, hired or borrowed by Contractor or for which Contractor is responsible, in a form and with insurance companies acceptable to District. All policies of automobile insurance shall permit and Contractor does hereby waive any right of subrogation which any insurer of Contractor may acquire from Contractor by virtue of the payment of any loss. Such insurance shall comply with the provisions of ARTICLE 41 below.

ARTICLE 40. BUILDER’S RISK [“ALL RISK”]

- a. It is the Contractor’s responsibility to maintain or cause to be maintained Builder’s Risk [“All Risk”] extended coverage insurance covering risks of direct physical loss, damage or destruction to all work, material, equipment, appliances, tools, and structures which are a part of the Contract and subject to loss or damage by fire, and extended coverage, theft, vandalism and malicious mischief, and collapse in an amount to cover 100% of the replacement cost. . The making of progress payments to the Contractor shall not be construed as creating an insurable interest by or for the District or be construed as relieving the Contractor or its subcontractors of responsibility for loss from any direct physical loss, damage or destruction occurring prior to final acceptance of The Work by the District. The Contractor is required to file with District a certificate evidencing fire insurance coverage.
- b. Provide insurance coverage on completed value form, all-risk or special causes of loss coverage.
- 1) Insurance policies shall be so conditioned as to cover the performance of any extra work performed under the Contract.

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- 2) Coverage shall include all materials stored on site and in transit.
- 3) Coverage shall include Contractor's tools and equipment.
- 4) Insurance shall include boiler, machinery and material hoist coverage.
- 5) Such insurance shall comply with the provisions of the Contract Documents.

ARTICLE 41. FORM AND PROOF OF CARRIAGE OF INSURANCE

- a. Any insurance carrier providing insurance coverage required by the Contract Documents shall be admitted to and authorized to do business in the State of California unless waived, in writing, by District's Risk Manager. Carrier(s) shall have an A.M. Best rating of not less than an A-VII. Insurance deductibles or self-insured retentions must be declared by the Contractor, and such deductibles and retentions shall have the prior written consent from District. At the election of District the Contractor shall either 1) reduce or eliminate such deductibles or self-insured retentions, or 2) procure a bond which guarantees payment of losses and related investigations, claims administration, and defense costs and expenses. If umbrella or excess liability coverage is used to meet any required limit(s) specified herein, the Contractor shall provide a "follow form" endorsement satisfactory to the District indicating that such coverage is subject to the same terms and conditions as the underlying liability policy.
- b. Each insurance policy required by this Contract shall be endorsed to state that: (1) coverage shall not be suspended, voided, reduced or cancelled except after thirty (30) days prior written notice by certified mail, return receipt requested, has been given to the District; and (2) any failure to comply with reporting or other provisions of the policies, including breaches of warranties, shall not affect coverage provided to the District its directors, officials, officers, employees, agents, representatives and authorized volunteers.
- c. The District, its directors, officers, employees, agents, representatives and authorized volunteers are to be given insured status (via ISO endorsement at least as broad as CG 2010 1185 or both CG 20 37 and CG 20 38 04 13 forms (if later revisions used) or endorsements providing the exact same coverage) on the Contractor's Builder's Risk ["All Risk"] policy and on all Contractor's policies of Commercial General Liability and Automobile Liability insurance, and on Contractor's subcontractors' policies of Commercial General Liability insurance (via ISO CG form 20 38 (or endorsements providing the exact same coverage). The coverage shall contain no special limitations on the scope of protection afforded to the District, its directors officers, employees, agents, representatives and/or authorized volunteers. Notwithstanding the minimum limits set forth in this Contract for any type of insurance coverage, all available insurance proceeds in excess of the specified minimum limits of coverage shall be available to the parties required to be named as Additional Insureds hereunder. Contractor and its insurance carriers shall provide a Waiver of Subrogation in favor of those parties.
- d. Contractor shall cause its insurance carrier(s) to furnish District with either 1) a properly executed original Certificate(s) of Insurance and certified original copies of Endorsements effecting coverage as required herein, or 2) if requested to do so in writing by District's Risk Manager, provide original Certified copies of policies including all

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Endorsements and all attachments thereto, showing such insurance is in full force and effect, In the event of a material modification or cancellation of coverage, District may terminate or Stop Work pursuant to the Contract Documents, unless District receives, prior to such effective date, another properly executed original Certificate of Insurance and original copies of endorsements or certified original policies, including all endorsements and attachments thereto evidencing coverages set forth herein and the insurance required herein is in full force and effect. Contractor shall not take possession, or use the Project site, or commence operations under this Agreement until District has been furnished original Certificate(s) of Insurance and certified original copies of Endorsements or policies of insurance including all Endorsements and any and all other attachments as required in this Section. The original Endorsements for each policy and the Certificate of Insurance shall be signed by an individual authorized by the insurance carrier to do so on its behalf.

- e. It is understood and agreed to by the parties hereto and the insurance company(s), that the Certificate(s) of Insurance and policies and endorsements shall so covenant and shall be construed as primary, and District's insurance and/or deductibles and/or self-insured retentions or self-insured programs shall not be construed as contributory (as broad as ISO endorsement CG 20 01). Additionally, it is understood and agreed to by the parties hereto and the insurance company(s) that the Contractor's 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.
- f. District reserves the right to adjust the monetary limits of insurance coverages during the term of this Contract including any extension thereof, if in District's reasonable judgment, the amount or type of insurance carried by the Contractor becomes inadequate.
- g. Contractor shall pass down the insurance obligations contained herein to all tiers of sub-contractors working under this Contract.

ARTICLE 42. TIME FOR COMPLETION AND LIQUIDATED DAMAGES

- a. **Time for Completion/Liquidated Damages.** Work shall be commenced within ten (10) days of the date stated in District's Notice to Proceed and shall be completed by Contractor in the time specified in the Contract Documents. District is under no obligation to consider early completion of the Project; and the Contract completion date shall not be amended by District's receipt or acceptance of the Contractor's proposed earlier completion date. Furthermore, Contractor shall not, under any circumstances, receive additional compensation from District (including but not limited to indirect, general, administrative or other forms of overhead costs) for the period between the time of earlier completion proposed by the Contractor and the Contract completion date. If The Work is not completed as stated in the Contract Documents, it is understood that District will suffer damage. In accordance with Government Code section 53069.85, being impractical and infeasible to determine the amount of actual damage, it is agreed that Contractor shall pay to District as fixed and liquidated damages, and not as a penalty, the sum stipulated in the Contract for each day of delay until The Work is fully completed. Contractor and its surety shall be liable for any liquidated damages. Any money due or to become due the Contractor may be retained to cover liquidated damages.

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- b. **Inclement Weather.** Contractor shall abide the Engineer's determination of what constitutes inclement weather. Time extensions for inclement weather shall only be granted when the Work stopped during inclement weather is on the critical path of the Project schedule.
- c. **Extension of Time.** Contractor shall not be charged liquidated damages because of any delays in completion of The Work due to unforeseeable causes beyond the control and without the fault or negligence of Contractor (or its subcontractors or suppliers). Contractor shall within five (5) Days of identifying any such delay notify District in writing of causes of delay. District shall ascertain the facts and extent of delay and grant extension of time for completing The Work when, in its judgment, the facts justify such an extension. Time extensions to the Project shall be requested by the Contractor as they occur and without delay. No delay claims shall be permitted unless the event or occurrence delays the completion of the Project beyond the Contract completion date.
- d. **No Damages for Reasonable Delay.** District's liability to Contractor for delays for which District is responsible shall be limited to only an extension of time unless such delays were unreasonable under the circumstances. In no case shall District be liable for any costs which are borne by the Contractor in the regular course of business, including, but not limited to, home office overhead and other ongoing costs. Damages caused by unreasonable District delay, including delays caused by items that are the responsibility of District pursuant to Government Code section 4215, shall be based on actual costs only, no proportions or formulas shall be used to calculate any delay damages.

ARTICLE 43. COST BREAKDOWN AND PERIODIC ESTIMATES

Contractor shall furnish on forms Approved by District:

- a. Within ten (10) Days of award of the Contract a detailed estimate giving a complete breakdown of the Contract price;
- b. A monthly itemized estimate of Work done for the purpose of making progress payments. In order for District to consider and evaluate each progress payment application, the Contractor shall submit a detailed measurement of Work performed and a progress estimate of the value thereof before the tenth (10th) Day of the following month.
- c. Contractor shall submit, with each of its payment requests, an adjusted list of actual quantities, verified by the Engineer, for unit price items listed, if any, in the Bid Form.
- d. Following District's Acceptance of the Work, the Contractor shall submit to District a written statement of the final quantities of unit price items for inclusion in the final payment request.
- e. District shall have the right to adjust any estimate of quantity and to subsequently correct any error made in any estimate for payment.

Contractor shall certify under penalty of perjury, that all cost breakdowns and periodic estimates accurately reflect the Work on the Project.

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ARTICLE 44. MOBILIZATION

- a. When a bid item is included in the Bid Form for mobilization, the costs of Work in advance of construction operations and not directly attributable to any specific bid item will be included in the progress estimate (“Initial Mobilization”). When no bid item is provided for “Initial Mobilization,” payment for such costs will be deemed to be included in the other items of The Work.

- b. Payment for Initial Mobilization based on the lump sum provided in the Bid Form, which shall constitute full compensation for all such Work. No payment for Initial Mobilization will be made until all of the listed items have been completed to the satisfaction of the Engineer. The scope of the Work included under Initial Mobilization shall include, but shall not be limited to, the following principal items:
 - 1) Obtaining and paying for all bonds, insurance, and permits.
 - 2) Moving on to the Project site of all Contractor’s plant and equipment required for first month’s operations.
 - 3) Installing temporary construction power, wiring, and lighting facilities.
 - 4) Establishing fire protection system.
 - 5) Developing and installing a construction water supply.
 - 6) Providing and maintaining the field office trailers for the Contractor and the Engineer, complete, with all specified furnishings and utility services including telephones, telephone appurtenances, computer and printer, and copying machine.
 - 7) Providing on-site communication facilities for the Owner and the Engineer, including telephones, radio pagers, and fax machines.
 - 8) Providing on-site sanitary facilities and potable water facilities as specified per Cal-OSHA and these Contract Documents.
 - 9) Furnishing, installing, and maintaining all storage buildings or sheds required for temporary storage of products, equipment, or materials that have not yet been installed in the Work. All such storage shall meet manufacturer’s specified storage requirements, and the specific provisions of the specifications, including temperature and humidity control, if recommended by the manufacturer, and for all security.
 - 10) Arranging for and erection of Contractor’s work and storage yard.
 - 11) Posting all OSHA required notices and establishment of safety programs per Cal-OSHA.
 - 12) Full-time presence of Contractor’s superintendent at the job site as required herein.
 - 13) Submittal of Construction Schedule as required by the Contract Documents.

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ARTICLE 45. PAYMENTS

- a. District shall make monthly progress payments following receipt of undisputed and properly submitted payment requests. Contractor shall be paid a sum equal to ninety-five percent (95%) of the value of Work performed up to the last day of the previous month, less the aggregate of previous payments. Where the District has adopted a finding that the work done under the Contract is substantially complex, the Contractor shall be paid a sum reduced by the retention specified in the Notice Inviting Bids.
- b. The Contractor shall, after the full completion of The Work, submit a final payment application. All prior progress estimates shall be subject to correction in the final estimate and payment.
- c. Unless otherwise required by law, the final payment of withheld retention, if unencumbered, shall be paid no later than sixty (60) Days after the date of recordation of the Notice of Completion.
- d. Acceptance by Contractor of the final payment shall constitute a waiver of all claims against District arising from this Contract.
- e. Payments to the Contractor shall not be construed to be an acceptance of any defective work or improper materials, or to relieve the Contractor of its obligations under the Contract Documents.
- f. The Contractor shall submit with each payment request the Contractor's conditional waiver of lien for the entire amount covered by such payment request, as well as a valid unconditional waiver of lien from the Contractor and all subcontractors and materialmen for all work and materials included in any prior invoices. Waivers of lien shall be in the forms prescribed by California Civil Code Section 8132. Prior to final payment by District, the Contractor shall submit a final waiver of lien for the Contractor's work, together with releases of lien from any subcontractor or materialmen.

ARTICLE 46. PAYMENTS WITHHELD AND BACKCHARGES

- a. In addition to amounts which District may retain under other provisions of the Contract Documents District may withhold payments due to Contractor as may be necessary to cover:
 - 1) Stop Notice Claims.
 - 2) Defective work not remedied.
 - 3) Failure of Contractor to make proper payments to its subcontractors or suppliers.
 - 4) Completion of the Contract if there exists a reasonable doubt that the work can be completed for balance then unpaid.
 - 5) Damage to another contractor or third party.
 - 6) Amounts which may be due District for claims against Contractor.
 - 7) Failure of Contractor to keep the record ("as-built") drawings up to date.

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- 8) Failure to provide updates on the construction schedule.
 - 9) Site clean up.
 - 10) Failure of the Contractor to comply with requirements of the Contract Documents.
 - 11) Liquidated damages.
 - 12) Legally permitted penalties.
- b. Upon completion of the Contract, District will reduce the final Contract amount to reflect costs charged to the Contractor, backcharges or payments withheld pursuant to the Contract Documents.

ARTICLE 47. CHANGES AND EXTRA WORK

a. Change Order Work.

- 1) District, without invalidating the Contract, may order changes in the Work consisting of additions, deletions or other revisions, the Contract amount and Contract time being adjusted accordingly. All such changes in the Work shall be authorized by Change Order, and shall be performed under the applicable conditions of the Contract Documents. A Change Order signed by the Contractor indicates the Contractor's agreement therewith, including any adjustment in the Contract amount or the Contract time, and the full and final settlement of all costs (direct, indirect and overhead) related to the Work authorized by the Change Order.
- 2) All claims for additional compensation to the Contractor shall be presented in writing before the expense is incurred and will be adjusted as provided herein. No work shall be allowed to lag pending such adjustment, but shall be promptly executed as directed, even if a dispute arises. No claim will be considered after the work in question has been done unless a written contract change order has been issued or a timely written notice of claim has been made by Contractor. Contractor shall not be entitled to claim or bring suit for damages, whether for loss of profits or otherwise, on account of any decrease or omission of any item or portion of Work to be done. Whenever any change is made as provided for herein, such change shall be considered and treated as though originally included in the Contract, and shall be subject to all terms, conditions and provisions of the original Contract.
- 3) Owner Initiated Change. The Contractor must submit a complete cost proposal, including any change in the Contract time, within seven (7) Days after receipt of a scope of a proposed change order, unless District requests that proposals be submitted in less than seven (7) Days.
- 4) Contractor Initiated Change. The Contractor must give written notice of a proposed change order required for compliance with the Contract Documents within seven (7) Days of discovery of the facts giving rise to the proposed change order.
- 5) Whenever possible, any changes to the Contract amount shall be in a lump sum mutually agreed to by the Contractor and District.

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- 6) Price quotations from the Contractor shall be accompanied by sufficiently detailed supporting documentation to permit verification by District.
- 7) If the Contractor fails to submit the cost proposal within the seven (7) Day period (or as requested), District has the right to order the Contractor in writing to commence the work immediately on a force account basis and/or issue a lump sum change to the contract price in accordance with District's estimate of cost. If the change is issued based on District estimate, the Contractor will waive its right to dispute the action unless within fifteen (15) Days following completion of the added/deleted work, the Contractor presents written proof that District's estimate was in error.
- 8) Estimates for lump sum quotations and accounting for cost-plus-percentage work shall be limited to direct expenditures necessitated specifically by the subject extra work, and shall be segregated as follows:
 - (a) Labor. The costs of labor will be the actual cost for wages prevailing locally for each craft or type of worker at the time the extra work is done, plus employer payments of payroll taxes and insurance, health and welfare, pension, vacation, apprenticeship funds, and other direct costs resulting from Federal, State or local laws, as well as assessment or benefits required by lawful collective bargaining agreements. The use of a labor classification which would increase the extra work cost will not be permitted unless the contractor establishes the necessity for such additional costs. Labor costs for equipment operators and helpers shall be reported only when such costs are not included in the invoice for equipment rental.
 - (b) Materials. The cost of materials reported shall be at invoice or lowest current price at which such materials are locally available in the quantities involved, plus sales tax, freight and delivery. Materials cost shall be based upon supplier or manufacturer's invoice. If invoices or other satisfactory evidence of cost are not furnished within fifteen (15) Days of delivery, then the Engineer shall determine the materials cost, at its sole discretion.
 - (c) Tool and Equipment Use. No payment will be made for the use of small tools, tools which have a replacement value of \$1,000 or less. Regardless of ownership, the rates to be used in determining equipment use costs shall not exceed listed rates prevailing locally at equipment rental agencies, or distributors, at the time the work is performed.
 - (d) Overhead, Profit and Other Charges. The mark-up for overhead (including supervision) and profit on work added to the Contract shall be according to the following:
 - i. "Net Cost" is defined as consisting of costs of labor, materials and tools and equipment only excluding overhead and profit. The costs of applicable insurance and bond premium will be reimbursed to the Contractor and subcontractors at cost only, without mark-up.
 - ii. For Work performed by the Contractor's forces the added cost for overhead and profit shall not exceed fifteen (15%) percent of the Net Cost of the Work.

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- iii. For Work performed by a subcontractor, the added cost for overhead and profit shall not exceed fifteen (15%) percent of the Net Cost of the Work to which the Contractor may add five (5%) percent of the subcontractor's Net Cost.
 - iv. For Work performed by a sub-subcontractor the added cost for overhead and profit shall not exceed fifteen (15 %) percent of the Net Cost for Work to which the subcontractor and general contractor may each add an additional five (5 %) percent of the Net Cost of the lower tier subcontractor.
 - v. No additional mark-up will be allowed for lower tier subcontractors, and in no case shall the added cost for overhead and profit payable by District exceed twenty-five (25%) percent of the Net Cost as defined herein.
- 9) All of the following costs are included in the markups for overhead and profit described above, and Contractor shall not receive any additional compensation for: Submittals, drawings: field drawings, Shop Drawings, including submissions of drawings; field inspection; general Superintendence; general administration and preparation of cost proposals, schedule analysis, Change Orders, and other supporting documentation; computer services; reproduction services; salaries of project engineer, superintendent, timekeeper, storekeeper, and secretaries; janitorial services; small tools, incidentals and consumables; temporary on-site facilities (offices, telephones, internet access, plumbing, electrical power, lighting; platforms, fencing, water), jobsite and home office overhead or other expenses; vehicles and fuel used for work otherwise included in the Contract Documents; surveying; estimating; protection of work; handling and disposal fees; final cleanup; other incidental work; related warranties.
- 10) For added or deducted Work by subcontractors, the Contractor shall furnish to District the subcontractor's signed detailed estimate of the cost of labor, material and equipment, including the subcontractor markup for overhead and profit. The same requirement shall apply to sub-subcontractors.
- 11) For added or deducted work furnished by a vendor or supplier, the Contractor shall furnish to District a detailed estimate or quotation of the cost to the Contractor, signed by such vendor or supplier.
- 12) Any change in The Work involving both additions and deletions shall indicate a net total cost, including subcontracts and materials. Allowance for overhead and profit, as specified herein, shall be applied if the net total cost is an extra; overhead and profit allowances shall not be applied if the net total cost is a credit. The estimated cost of deductions shall be based on labor and material prices on the date the Contract was executed.
- 13) Contractor shall not reserve a right to assert impact costs, extended job site costs, extended overhead, constructive acceleration and/or actual acceleration beyond what is stated in the change order for work. No claims shall be allowed for impact, extended overhead costs, constructive acceleration and/or actual acceleration due

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to a multiplicity of changes and/or clarifications. The Contractor may not change or modify District's change order form in an attempt to reserve additional rights.

- 14) If District disagrees with the proposal submitted by Contractor, it will notify the Contractor and District will provide its opinion of the appropriate price and/or time extension. If the Contractor agrees with District, a change order will be issued by District. If no agreement can be reached, District shall have the right to issue a unilateral change order setting forth its determination of the reasonable additions or savings in costs and time attributable to the extra or deleted work. Such determination shall become final and binding if the Contractor fails to submit a claim in writing to District within fifteen (15) Days of the issuance of the unilateral change order, disputing the terms of the unilateral change order.
- 15) No dispute, disagreement or failure of the parties to reach agreement on the terms of the change order shall relieve the Contractor from the obligation to proceed with performance of the work, including extra work, promptly and expeditiously.
- 16) Any alterations, extensions of time, extra work or any other changes may be made without securing consent of the Contractor's surety or sureties.

ARTICLE 48. OCCUPANCY

District reserves the right to occupy or utilize any portion of The Work at any time before completion, and such occupancy or use shall not constitute Acceptance of any part of Work covered by this Contract. This use shall not relieve the Contractor of its responsibilities under the Contract.

ARTICLE 49. INDEMNIFICATION

Contractor shall defend (with counsel of District's Board of Directors' choosing), indemnify and hold District, its officials, officers, agents, employees, and representatives free and harmless from any and all claims, demands, causes of action, costs, expenses, liabilities, losses, damages or injuries, in law or equity, regardless of whether the allegations are false, fraudulent, or groundless, to property or persons, including wrongful death, to the extent arising out of or incident to any acts, omissions or willful misconduct of Contractor, its officials, officers, employees, agents, consultants and contractors arising out of or in connection with the performance of the Work or this Contract, including claims made by subcontractors for nonpayment, including without limitation the payment of all consequential damages and attorneys' fees and other related costs and expenses. Contractor shall defend, at Contractor's own cost, expense and risk, with District's Board of Directors' choosing, any and all such aforesaid suits, actions or other legal proceedings of every kind that may be brought or instituted against District, its officials, officers, agents, employees and representatives. To the extent of its liability, Contractor shall pay and satisfy any judgment, award or decree that may be rendered against District, its officials, officers, employees, agents, employees and representatives, in any such suit, action or other legal proceeding. Contractor shall reimburse District, its officials, officers, agents, employees and representatives for any and all legal expenses and costs incurred by each of them in connection therewith or in enforcing the indemnity herein provided. The only limitations on this provision shall be those imposed by Civil Code Section 2782.

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ARTICLE 50. RECORD (“AS BUILT”) DRAWINGS

- a. Contractor shall prepare and maintain a complete set of record drawings (herein referred to as “as-builts”) and shall require each trade to prepare its own as-builts. The as-builts must show the entire site for each major trade, including but not limited to water, sewer, electrical, data, telephone, cable, fire alarm, gas and plumbing. Contractor shall mark the as-builts to show the actual installation where the installation varies from the Work as originally shown. Contractor shall mark whichever drawings are most capable of showing conditions fully and where shop drawings are used, Contractor must record a cross-reference at the corresponding location on the contract drawings. Contractor shall give particular attention to concealed elements that would be difficult to measure and record at a later date. Contractor shall use colors to distinguish variations in separate categories of The Work.
- b. Contractor shall note related change order numbers where applicable. Contractor shall organize as-builts into manageable sets, bound with durable paper cover sheets and shall print suitable title, dates and other identification on the cover of each set. Contractor to also provide an electronic version of the as-builts. The suitability of the as-builts will be determined by the Engineer.

ARTICLE 51. RESOLUTION OF CONSTRUCTION CLAIMS

- a. In accordance with Public Contract Code Sections 20104 et seq. and other applicable law, public works claims of \$375,000 or less which arise between the Contractor and District shall be resolved under the following procedure unless District has elected to resolve the dispute pursuant to Public Contract Code Section 10240 et seq.
- b. **All Claims.** All claims shall be submitted in writing and accompanied by substantiating documentation. Claims must be filed on or before the date of final payment unless other notice requirements are provided in the contract. "Claim" means a separate demand by the Contractor for (1) a time extension, (2) payment of money or damages arising from work done by or on behalf of the Contractor and payment of which is not otherwise expressly provided for or the Contractor is not otherwise entitled, or (3) an amount the payment of which is disputed by District.
- c. **Claims Under \$50,000.** District shall respond in writing to the claim within 45 days of receipt of the claim, or, District may request, in writing, within 30 days of receipt of the claim, any additional documentation supporting the claim or relating to defenses or claims District may have. If additional information is needed thereafter, it shall be provided upon mutual agreement of District and the Contractor. District's written response shall be submitted 15 days after receiving the additional documentation, or within the same period of time taken by the Contractor to produce the additional information, whichever is greater.
- d. **Claims over \$50,000 but less than or equal to \$375,000.** District shall respond in writing within 60 days of receipt, or, may request in writing within 30 days of receipt of the claim, any additional documents supporting the claim or relating to defenses or claims District may have against the Contractor. If additional information is needed thereafter, it shall be provided pursuant to mutual agreement between District and the Contractor. District's response shall be submitted within 30 days after receipt of the further documents, or within

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the same period of time taken by the Contractor to produce the additional information or documents, whichever is greater. The Contractor shall make these records and documents available at all reasonable times, without any direct charge.

- e. **All Claims.** The Contractor will submit the claim justification in the following format:
- 1) Summary of claim merit and price, and Contract clause pursuant to which the claim is made.
 - 2) List of documents relating to claim
 - (a) Specifications
 - (b) Drawings
 - (c) Clarifications (Requests for Information)
 - (d) Schedules
 - (e) Other
 - 3) Chronology of events and correspondence
 - 4) Analysis of claim merit
 - 5) Analysis of claim cost
 - 6) Analysis of time impact analysis in CPM format
 - 7) Cover letter and certification of validity of the claim
- f. **All Claims.** Notwithstanding the foregoing, all public works claims between the Contractor and the District shall be resolved pursuant to the procedures set forth in Public Contract Code Section 9204. The District will provide a written response to the Contractor identifying what portion of the claim is disputed and what portion is undisputed within 45 days of receipt of the claim, unless the parties mutually agree to extend the time for response. If the District does not respond within the 45-day time period, or as extended by mutual agreement, the claim shall be deemed rejected in its entirety.
- g. **All Claims.** If the Contractor disputes District's response, or if District fails to respond within the statutory time period(s), the Contractor may so notify District within 15 days of the receipt of the response or the failure to respond, and demand an informal conference to meet and confer for settlement. Upon such demand, District shall schedule a meet and confer conference within 30 days.
- h. **All Claims.** Within 10 business days following the conclusion of the meet and confer conference, if the claim or any portion thereof remains in dispute, the District shall provide the Contractor with a written statement identifying the portion of the claim that remains in dispute and the portion that is undisputed. Any portion of the claim that remains in dispute shall be submitted to nonbinding mediation. The selection of the mediator shall be in accordance with Public Contract Code section 9204, and the District and the Contractor shall equally share the associated mediator fees. Each party will be responsible for its own attorneys' fees and other costs.

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- i. The Contractor must comply with the claims filing procedures set forth in Government Code section 900 *et seq.* for any claim or any portion thereof that remains in dispute after the meet and confer conference. For purposes of those provisions, the time within which a claim must be filed shall be tolled from the time the Contractor submits the written claim until the time the claim is denied, including any time utilized for the meet and confer conference.
- j. Submission of a claim, properly certified, with all required supporting documentation, and written rejection or denial of all or part of the claim by District, is a condition precedent to any action, proceeding, litigation, suit, general conditions claim, or demand for arbitration by Contractor.
- k. **Government Code Claim.** In addition to any and all contract requirements pertaining to notices of and requests for compensation or payment for extra work, disputed work, construction claims and/or changed conditions, the Contractor must comply with the claim procedures set forth in Government Code section 900 *et seq.* prior to filing any lawsuit against the District. Such Government Code claims and any subsequent lawsuit based upon the Government Code claims shall be limited to those matters that remain unresolved after all procedures pertaining to extra work, disputed work, construction claims, and/or changed conditions have been followed by Contractor. If no such Government Code claim is submitted, or if the prerequisite contractual requirements are not otherwise satisfied as specified herein, Contractor shall be barred from bringing and maintaining a valid lawsuit against the District.

ARTICLE 52. DISTRICT’S RIGHT TO TERMINATE CONTRACT

- a. **Termination for Cause:** District may, without prejudice to any other right or remedy, serve written notice upon Contractor of its intention to terminate this Contract if the Contractor: (i) refuses or fails to prosecute The Work or any part thereof with such diligence as will ensure its completion within the time required; (ii) fails to complete The Work within the required time; (iii) should file a bankruptcy petition or be adjudged a bankrupt; (iv) should make a general assignment for the benefit of its creditors; (v) should have a receiver appointed; (vi) should persistently or repeatedly refuse or fail to supply enough properly skilled workers or proper materials to complete the work; (vii) should fail to make prompt payment to subcontractors or for material or labor; (viii) persistently disregard laws, ordinances, other requirements or instructions of District; or (ix) should violate any of the provisions of the Contract Documents.

The notice of intent to terminate shall contain the reasons for such intention to terminate. Unless within ten (10) Days after the service of such notice, such condition shall cease or satisfactory arrangements (acceptable to District) for the required correction are made, this Contract shall be terminated. In such case, Contractor shall not be entitled to receive any further payment until the Project has been finished. District may take over and complete The Work by any method it may deem appropriate. Contractor and its surety shall be liable to District for any excess costs or other damages incurred by District to complete the Project. If District takes over The Work, District may, without liability for so doing, take possession of and utilize in completing The Work such materials, appliances, plant, and other property belonging to the Contractor as may be on the Project site.

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- b. **Termination For Convenience:** District may terminate performance of The Work in whole or, in part, if District determines that a termination is in District's interest.

The Contractor shall terminate all or any part of The Work upon delivery to the Contractor of a Notice of Termination specifying that the termination is for the convenience of District, the extent of termination, and the effective date of such termination.

After receipt of Notice of Termination, and except as directed by District, the Contractor shall, regardless of any delay in determining or adjusting any amounts due under this Termination for Convenience clause, immediately proceed with the following obligations:

- 1) Stop Work as specified in the Notice.
 - 2) Complete any Work specified in the Notice of Termination in a least cost/shortest time manner while still maintaining the quality called for under the Contract Documents.
 - 3) Leave the property upon which the Contractor was working and upon which the facility (or facilities) forming the basis of the Contract Documents is situated in a safe and sanitary manner such that it does not pose any threat to the public health or safety.
 - 4) Terminate all subcontracts to the extent that they relate to the portions of The Work terminated.
 - 5) Place no further subcontracts or orders, except as necessary to complete the remaining portion of The Work.
 - 6) Submit to District, within ten (10) Days from the effective date of the Notice of Termination, all of the documentation called for by the Contract Documents to substantiate all costs incurred by the Contractor for labor, materials and equipment through the Effective Date of the Notice of Termination. Any documentation substantiating costs incurred by the Contractor solely as a result of District's exercise of its right to terminate this Contract pursuant to this clause, which costs the Contractor is authorized under the Contract Documents to incur, shall: (i) be submitted to and received by District no later than thirty (30) Days after the Effective Date of the Notice of Termination; (ii) describe the costs incurred with particularity; and (iii) be conspicuously identified as "Termination Costs Occasioned by District's Termination for Convenience."
 - 7) These provisions are in addition to and not in limitation of any other rights or remedies available to District.
- c. **Savings Clause.** If the District terminates Contractor for cause, and if it is later determined that the termination was wrongful, such default termination shall automatically be converted to and treated as a termination for convenience. In such event, Contractor shall be entitled to receive only the amounts payable under this section, and Contractor specifically waives any claim for any other amounts or damages, including, but not limited to, any claim for consequential damages or lost profits.
- d. **Exception.** Notwithstanding any other provision of this Article, when immediate action is necessary to protect life and safety or to reduce significant exposure or liability, District

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may immediately order Contractor to cease Work on the Project until such safety or liability issues are addressed to the satisfaction of District or the Contract is terminated.

ARTICLE 53. WARRANTY AND GUARANTEE

- a. Contractor warrants that all materials and equipment furnished under this Contract shall be new unless otherwise specified in the Contract Documents; and that all Work conforms to the Contract Document requirements and is free of any defect whether performed by the Contractor or any subcontractor or supplier.
- b. Unless otherwise stated, all warranty periods shall begin upon the filing of the Notice of Completion. Unless otherwise stated, the warranty period shall be for one year.
- c. The Contractor shall remedy at its expense any damage to District-owned or controlled real or personal property.
- d. Contractor shall furnish District with all warranty and guarantee documents prior to final Acceptance of the Project by District.
- e. District shall notify the Contractor, in writing, within a reasonable time after the discovery of any failure, defect, or damage. The Contractor shall within ten (10) Days after being notified commence and perform with due diligence all necessary Work. If the Contractor fails to promptly remedy any defect, or damage; the District shall have the right to replace, repair, or otherwise remedy the defect, or damage at the Contractor's expense.
- f. In the event of any emergency constituting an immediate hazard to health, safety, property, or licensees, when caused by Work of the Contractor not in accordance with the Contract requirements, District may undertake at Contractor's expense, and without prior notice, all Work necessary to correct such condition.
- g. With respect to all warranties, express or implied, from subcontractors, manufacturers, or suppliers for Work performed and Materials furnished under this Contract, the Contractor shall:
 - 1) Obtain for District all warranties that would be given in normal commercial practice;
 - 2) Require all warranties to be executed, in writing, for the benefit of District; and
 - 3) Enforce all warranties for the benefit of District, unless otherwise directed in writing by District.

This Article shall not limit District's rights under this Contract or with respect to latent defects, gross mistakes, or fraud. District specifically reserves all rights related to defective work, including but not limited to the defect claims pursuant to California Code of Civil Procedure Section 337.15.

ARTICLE 54. DOCUMENT RETENTION & EXAMINATION

- a. In accordance with Government Code Section 8546.7, records of both District and the Contractor shall be subject to examination and audit by the State Auditor General for a period of three (3) years after final payment.

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- b. Contractor shall make available to District any of the Contractor's other documents related to the Project immediately upon request of District.
- c. In addition to the State Auditor rights above, District shall have the right to examine and audit all books, estimates, records, contracts, documents, bid documents, subcontracts, and other data of the Contractor (including computations and projections) related to negotiating, pricing, or performing the modification in order to evaluate the accuracy and completeness of the cost or pricing data at no additional cost to District, for a period of four (4) years after final payment.

ARTICLE 55. SOILS INVESTIGATIONS

When a soils investigation report for the Project site is available, such report shall not be a part of the Contract Documents. Any information obtained from such report as to subsurface soil condition, or to elevations of existing grades or elevations of underlying rock, is approximate only and is not guaranteed. Contractor acknowledges that any soils investigation report (including any borings) was prepared for purposes of design only and Contractor is required to examine the site before submitting its bid and must make whatever tests it deems appropriate to determine the underground condition of the soil.

ARTICLE 56. SEPARATE CONTRACTS

- a. District reserves the right to let other contracts in connection with this Work or on the Project site. Contractor shall permit other contractors reasonable access and storage of their materials and execution of their work and shall properly connect and coordinate its Work with theirs.
- b. To ensure proper execution of its subsequent Work, Contractor shall immediately inspect work already in place and shall at once report to the Engineer any problems with the work in place or discrepancies with the Contract Documents.
- c. Contractor shall ascertain to its own satisfaction the scope of the Project and nature of any other contracts that have been or may be awarded by District in prosecution of the Project to the end that Contractor may perform this Contract in the light of such other contracts, if any. Nothing herein contained shall be interpreted as granting to Contractor exclusive occupancy at site of the Project. Contractor shall not cause any unnecessary hindrance or delay to any other contractor working on the Project. If simultaneous execution of any contract for the Project is likely to cause interference with performance of some other contract or contracts, the Engineer shall decide which Contractor shall cease Work temporarily and which contractor shall continue or whether work can be coordinated so that contractors may proceed simultaneously. District shall not be responsible for any damages suffered or for extra costs incurred by Contractor resulting directly or indirectly from award, performance, or attempted performance of any other contract or contracts on the Project site.

ARTICLE 57. NOTICE AND SERVICE THEREOF

All notices shall be in writing and either served by personal delivery or mailed to the other party as designated in the Bid Forms. Written notice to the Contractor shall be addressed to

**SECTION 00100 – CONTRACT DOCUMENTS
GENERAL CONDITIONS**

Contractor's principal place of business unless Contractor designates another address in writing for service of notice. Notice to District shall be addressed to District as designated in the Notice Inviting Bids unless District designates another address in writing for service of notice. Notice shall be effective upon receipt or five (5) Days after being sent by first class mail, whichever is earlier. Notice given by facsimile shall not be effective unless acknowledged in writing by the receiving party.

ARTICLE 58. NOTICE OF THIRD PARTY CLAIMS

Pursuant to Public Contract Code Section 9201, District shall provide Contractor with timely notification of the receipt of any third-party claim relating to the Contract.

ARTICLE 59. STATE LICENSE BOARD NOTICE

Contractors are required by law to be licensed and regulated by the Contractors' State License Board which has jurisdiction to investigate complaints against contractors if a complaint regarding a patent act or omission is filed within four (4) years of the date of the alleged violation. A complaint regarding a latent act or omission pertaining to structural defects must be filed within ten (10) years of the date of the alleged violation. Any questions concerning a contractor may be referred to the Registrar, Contractors' State License Board, P.O. Box 26000, Sacramento, California 95826.

ARTICLE 60. INTEGRATION

- a. Oral Modifications Ineffective. No oral order, objection, direction, claim or notice by any party or person shall affect or modify any of the terms or obligations contained in the Contract Documents.
- b. Contract Documents Represent Entire Contract. The Contract Documents represent the entire agreement of District and Contractor.

ARTICLE 61. ASSIGNMENT

Contractor shall not assign, transfer, convey, sublet, or otherwise dispose of this Contract or any part thereof including any claims, without prior written consent of District. Any assignment without the written consent of District shall be void. Any assignment of money due or to become due under this Contract shall be subject to a prior lien for services rendered or Material supplied for performance of Work called for under the Contract Documents in favor of all persons, firms, or corporations rendering such services or supplying such Materials to the extent that claims are filed pursuant to the Civil Code, the Code of Civil Procedure or the Government Code.

ARTICLE 62. CHANGE IN NAME AND NATURE OF CONTRACTOR'S LEGAL ENTITY

Should a change be contemplated in the name or nature of the Contractor's legal entity, the Contractor shall first notify District in order that proper steps may be taken to have the change reflected on the Contract.

**SECTION 00100 – CONTRACT DOCUMENTS
GENERAL CONDITIONS**

ARTICLE 63. ASSIGNMENT OF ANTITRUST ACTIONS

Pursuant to Section 7103.5 of the Public Contract Code, in entering into a public works contract or subcontract to supply goods, services, or materials pursuant to a public works contract, Contractor or subcontractor offers and agrees to assign to District all rights, title, and interest in and to all causes of action it may have under Section 4 of the Clayton Act (15 U.S.C. Section 15) or under the Cartwright Act (chapter 2 (commencing with Section 16700) of part 2 of division 7 of the Business and Professions Code), arising from the purchase of goods, services, or materials pursuant to this Contract or any subcontract. This assignment shall be made and become effective at the time District makes final payment to the Contractor, without further acknowledgment by the parties.

ARTICLE 64. PROHIBITED INTERESTS

No District official or representative who is authorized in such capacity and on behalf of District to negotiate, supervise, make, accept, or approve, or to take part in negotiating, supervising, making, accepting or approving any engineering, inspection, construction or material supply contract or any subcontract in connection with construction of the project, shall be or become directly or indirectly interested financially in the Contract.

ARTICLE 65. LAWS AND REGULATIONS

- a. Contractor shall give all notices and comply with all laws, ordinances, rules and regulations bearing on conduct of work as indicated and specified. If Contractor observes that drawings and specifications are at variance therewith, he shall promptly notify the Engineer in writing and any necessary changes shall be adjusted as provided for in this Contract for changes in work. If Contractor performs any work knowing it to be contrary to such laws, ordinances, rules and regulations, and without such notice to the Engineer, he shall bear all costs arising therefrom.
- b. Contractor shall be responsible for familiarity with the Americans with Disabilities Act (“ADA”) (42 U.S.C. § 12101 et seq.). The Work will be performed in compliance with ADA regulations.

ARTICLE 66. PATENT FEES OR ROYALTIES

The Contractor shall include in its bid amount the patent fees or royalties on any patented article or process furnished or used in the Work. Contractor shall assume all liability and responsibility arising from the use of any patented, or allegedly patented, materials, equipment, devices or processes used in or incorporated with The Work, and shall defend, indemnify and hold harmless District, its officials, officers, agents, employees and representatives from and against any and all liabilities, demands, claims, damages, losses, costs and expenses, of whatsoever kind or nature, arising from such use.

ARTICLE 67. OWNERSHIP OF DRAWING

All Contract Documents furnished by District are District property. They are not to be used by Contractor or any subcontractor on other work nor shall Contractor claim any right to such documents. With exception of one complete set of Contract Documents, all documents shall be returned to District on request at completion of The Work.

**SECTION 00100 – CONTRACT DOCUMENTS
GENERAL CONDITIONS**

ARTICLE 68. NOTICE OF TAXABLE POSSESSORY INTEREST

In accordance with Revenue and Taxation Code Section 107.6, the Contract Documents may create a possessory interest subject to personal property taxation for which Contractor will be responsible.

END OF GENERAL CONDITIONS

**SECTION 00100 – CONTRACT DOCUMENTS
SPECIAL CONDITIONS**

SPECIAL CONDITIONS

District has not made findings pursuant to Public Contract Code Section 3400(b) regarding the use of specific materials, products, things, and/or services that must be utilized for the Project.

END OF SPECIAL CONDITIONS

JOB NO. 3197

SEWER MAIN RELINING FY'25

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SECTION 01000

GENERAL REQUIREMENTS

PART 1 GENERAL

1.01 DEFINITIONS

Wherever the following terms or pronouns occur in these Standard Specifications or in related documents, the intent and meaning shall be interpreted as follows:

- A. **"Approved Plans"** shall mean the official plans, profiles, typical cross-sections, working drawings, detail drawings, or exact reproductions thereof, approved by the District and other appropriate government agencies, which show the locations, character, dimensions, and details of the work required to construct the specified public improvements.
- B. **"Approved Materials List"** shall mean the listing of those materials reviewed, tested, and allowed for use by the District for installation of its facilities (which may include potable water, recycled water and sewer facilities).
- C. **"Board"** shall mean the Board of Directors of the District of jurisdiction.
- D. **"Contractor"** shall mean the independent person, firm, corporation or partnership with whom the District or Developer contracts for the performance of the work or any part thereof covered by the Approved Plans and these Standard Specifications. Instructions or information given by the District to the Contractor's superintendent or agent on the Project shall be considered as having been given to the Contractor.
- E. **"District"** shall mean the Utility District of jurisdiction.

For the unique purpose of these Standard Specifications, District shall also refer to the District's representative(s) acting within the scope of the particular duties entrusted to them.

The District shall resolve any and all issues which may arise with regard to the quality or acceptability of approved materials furnished or work performed, to the manner of performance and rate of progress of the work and shall answer all questions relating to the interpretation of the Standard Drawings, the Approved Plans, the job specifications, if any, and these Standard Specifications as well as the acceptable fulfillment of the Contract on the part of the Developer.

- F. **"District Engineer"** or **"Engineer"** shall mean the District's Chief Engineer, or the District's General Manager, acting either directly or through properly authorized agents, such agents acting severally within the scope of the particular duties entrusted to them.
- G. **"Inspector"** shall mean the District's authorized agent whose duties shall include those defined elsewhere within these Standard Specifications, but who shall not direct the work being performed.
- H. **"Engineer of Work"** shall mean a Civil Engineer or Structural Engineer registered or licensed in California who is qualified to act as an agent of the District
- I. **"Project"** or the **"Work"** shall mean the public improvement to be constructed in whole or part within the boundaries of the District.

- J. **"Standard Drawings"** shall mean the standard details issued by the District for construction of District facilities.
- K. **"Water Agencies' Design Guide"** or **"Water Agencies' Standards Design Guide"** or **"Design Guide"** shall mean the current version of the Fallbrook Public Utilities District Standards Design Guidelines for Potable Water, Recycled Water and Sewer Facilities as adopted and published by the District.
- L. **"Water Agencies' Standards"** or **"Water Agencies' Standard Specifications"** or **"Standard Specifications"** shall mean the current version of the Water Agencies' Standard Specifications for Potable Water, Recycled Water and Sewer Facilities as adopted and published by the member agencies of the Water Agencies' Standards Committee.

1.02 LICENSE

The Contractor installing any new facilities or performing work on existing facilities within the District shall possess, prior to the start of the Project, a License, defined by the latest edition of the California Contractor's License Law and Reference Book, as:

- A. Class A or C-34 for water pipeline installations.
- B. Class A or C-42 for sewer pipeline installations.
- C. Class A for major water and sewer facilities such as pump stations, reservoirs and treatment plants.

Any Contractor possessing a license other than a Class A must receive written approval from the District prior to initiating the work.

1.03 OPERATIONS IN PUBLIC RIGHT-OF-WAY

Work in public right-of-way shall be done in accordance with the requirements of the permit issued by the public agency in whose right-of-way the work is located, in addition to the requirements of the Approved Plans and Standard Specifications. If a permit is not required, the work shall conform to the standards of the public agency involved in addition to conforming to the Approved Plans and Standard Specifications.

1.04 STORM WATER POLLUTION PREVENTION PLAN (SWPPP) REQUIREMENTS & PERMITS

The Contractor shall abide by the conditions of the Regional Water Quality Control Board, General Construction Activity Storm Water Permit and the project Storm Water Pollution Prevention Plan (SWPPP). Contractor shall obtain necessary Storm Water permits

1.05 REFERENCE STANDARDS

The reference standards of the organizations listed below form a part of these Standard Specifications to the extent referenced and are referred to in the text by the basic designation only. Reference shall be made to the latest edition of said standards unless otherwise stated.

	<u>AGENCY</u>	<u>ADDRESS</u>
AASHTO	American Association of State Highway and Transportation Officials	444 N. Capital St. Washington, D.C. 20004
ACI	American Concrete Institute	P.O. Box 19150 Detroit, MI 48219
ANSI	American National Standards Institute	1430 Broadway New York, NY 10018
ASA	American Standards Association	70 East 45th Street New York, NY 10017
ASME	American Society of Mechanical Engineers	345 E. 47th Street New York, NY 10017
ASTM	American Society for Testing and Materials	1916 Race Street Philadelphia, PA 19103
AWS	American Welding Society	550 N.W. Le Jeune Rd. Miami, FL 33135
AWWA	American Water Works Association, Inc.	6666 W. Quincy Ave. Denver, CO 80235
CAL/ OSHA	State of California Occupational Safety and Health Administration	1006 Fourth Street Sacramento, CA 95814
CFR	Code of Federal Regulations	Office of Federal Register National Archives Administration Washington, D.C. 20408
CRSI	Concrete Reinforcing Steel Institute	228 N. La Salle St. Chicago, IL 60601
CSLB	Contractors State License Board	9821 Business Park Dr. Sacramento, CA 95827
NACE	National Association of Corrosion Engineers	1440 South Creek Dr. Houston, TX 77084
NFPA	National Fire Protection Agency	Battery March Park Quincy, MA 02269
NSF	National Sanitation Foundation	P.O. Box 130140 Ann Arbor, MI 48113
SDG&E	San Diego Gas and Electric Company	101 Ash Street San Diego, CA 92102
SSPC	Steel Structures Painting Council	4400 Fifth Ave. Pittsburgh, PA 1521

	<u>AGENCY</u>	<u>ADDRESS</u>
SSPWC	Standard Specifications for Public Works Construction (Greenbook)	Joint Cooperative Committee c/o Associated General Contractors of California 1255 Corporate Center Dr., Suite 100 Monterey Park, CA 91754
UBC	Uniform Building Code	International Conference of Building Officials 5360 Workman Mill Rd. Whittier, CA 90601
UNI-B	Uni-Bell PVC Pipe Association	2655 Villa Creek Dr., Ste. 155 Dallas, TX 75234
UPC	Uniform Plumbing Code	International Conference of Plumbing and Mechanical Officials 20001 E. Walnut Dr. South Walnut, CA 91789

1.06 ORDER OF PRECEDENCE

The Approved Plans, together with District Standard Specifications, shall govern the work to be done. Anything indicated in the Standard Specifications but not shown on the Approved Plans, or shown on the Approved Plans but not indicated in the Standard Specifications, shall be of like effect as though shown or indicated in both. In resolving inconsistencies between the Approved Plans and the various sections of the Standard Specifications, the order of precedence shall be as follows:

1. Technical Specifications (Standard Specifications Sections 2 through 16)
2. Appendices to the Standard Specifications
3. Standard Drawings
4. Approved Plans
5. Approved Materials Lists
6. General Specifications (Standard Specifications Section 1)
7. Reference Standards

Figure dimensions on drawings shall take precedence over scale dimensions. Detailed drawings shall take precedence over general drawings. The Contractor shall immediately notify District if any conflict, inconsistency, omission, error, or ambiguity is discovered between the Approved Plans and the various sections of the Standard Specifications.

1.07 EXAMINATION OF APPROVED PLANS, SPECIFICATIONS, AND SITE

The Contractor shall carefully examine the site of the proposed work, the Approved Drawings, the Specifications, and all other pertinent documents. Contractor shall be satisfied as to the character, quality and quantities of work to be furnished, and as to the requirements of the

Approved Plans and these Standard Specifications. The District will not be liable for any loss sustained by the Contractor as a result of any variance between conditions as shown on the Approved Plans and the actual conditions revealed during the progress of the work or otherwise.

1.08 QUALITY OF WORK AND MATERIALS

The work shall be performed in a thorough, worker-like manner in accordance with the Approved Plans and these Standard Specifications. All work shall conform to the lines and grades shown on said plans.

At least one member of the Contractor's workforce who is thoroughly familiar with the specified requirements of work and who is completely trained and experienced in the construction skills necessary for satisfactory completion of the work shall be present at the site, directing the work, at all times.

Adequate number of skilled workers and sufficient and appropriate equipment shall be present at the site prior to commencing daily construction operations.

The Engineer shall inform the Contractor if any person in the employ of the Contractor fails to or refuses to comply with the requirements of these Specifications, or appears to the Engineer to be incompetent or unfit, or acts in a disorderly, improper or unsafe manner. It shall be the Contractor's responsibility to dismiss any such person from the work site or take any other action deemed appropriate by the Contractor.

All equipment, materials, and supplies to be incorporated in the work shall be new. All equipment, material and supplies shall be produced in a good and worker-like manner. Materials to be used within the scope of work on the project shall be those listed in the current Approved Materials List. When the quality of a material, process, or article is not specifically set forth in the Approved Materials List, the Approved Plans, or the Specifications, the best available quality of the material, process, or article shall be provided.

The Contractor may offer as substitution any material, process, or article substantially equal or better in every respect to that so indicated or specified; provided, however, that if the material, process, or article offered by the Contractor is not, in the opinion of the District, substantially equal or better in every respect to that specified, then the Contractor must furnish the material, process, or article specified or one that in the opinion of the District is substantially equal or better in every respect.

1.09 SHOP DRAWING PROCEDURES

- A. Unless amended by job specifications, Contractor shall submit Two (2) hard copies and one Electronic copy of all shop drawings, submittals, and manufacturer's cut sheets detailing the methods and materials intended for use on the project. Submittals shall be consecutively numbered, shall be accompanied by a transmittal letter marked with the number and title of the submittal, name of the project, name and address of the supplier, along with contact persons for same, and shall be checked by and marked with the approval of the Contractor. In addition, any submittals that deviate from the requirements of the Contract shall be clearly noted and explained in the transmittal letter.
- B. District will review the submittals so provided, and will return the submittals marked to indicate that submittals are approved or must be returned for revision. Unless amended by job specifications, District shall be allowed a minimum of ten (10) working days for the review of submittals. Submittals returned for revision must be corrected as noted and developer must re-submit shop drawings as noted above until approved by District. Review and approval of shop drawings by District shall not relieve developer of the

responsibility for executing the work in accordance with these Standard Specifications, using proper methods of construction, nor from furnishing materials or work required but not indicated on the submittals.

- C. Construction shall not begin on relevant portions of the work until shop drawing submittals have been approved by District. Shop drawings shall be submitted in a timely manner so as not to delay construction of the work.

1.10 MATERIALS

All materials shall be new and unused, of the quality defined in the Specifications, and approved by the District Engineer. All materials to be used within a specific project and intended for equivalent uses shall be identical as to manufacturer and model number. Materials not identical as to manufacturer and model number to those approved by the District Engineer, materials that are damaged, or materials that are otherwise unacceptable to the District Engineer shall be rejected and immediately removed from the job site.

- A. Job-specific approval of materials not shown on the Approved Materials List is solely at the discretion of the District Engineer, and materials so approved shall not be construed as approved for general use. For job-specific consideration of materials not shown on the Approved Materials List, the shop drawing procedures outlined within this Section Requirements shall be followed.

1.11 PRE-CONSTRUCTION CONFERENCE

- A. The Contractor shall schedule a Pre-Construction Conference with the District's Inspection Department at least fourteen (14) days prior to beginning any water or sewer work in the field. As a minimum, the attendees at this conference shall include:
 - 1. The design engineer.
 - 2. The Contractor's Superintendent.
 - 3. Contractor's Competent Person.
 - 4. The District Inspector.
- B. In addition, the following persons shall be invited to the Pre-Construction conference upon request of the District:
 - 1. A representative of the Agency of Jurisdiction.
 - 2. Representative(s) of other utility companies.
- C. The purpose of this meeting is to review the plans for the project relative to the requirements of the District's Standard Specifications, the Approved Plans, and the Approved Materials List. The Contractor shall be prepared to discuss, in detail, the project schedule, and shall provide the District with any schedules, submittals, lists, permits, or other information required by the Engineer, by these Standard Specifications or by the job specifications.

1.12 INSPECTION

All work and materials furnished shall be subject to inspection for compliance with these Standard Specifications and all other appropriate specifications.

The Contractor shall make application to the District for inspection at least five (5) days in advance of starting any work. Inspectors shall be recognized as authorized agents of the District, and their duties shall be to evaluate materials used and work performed. Instructions given by the Inspector shall be respected and executed by the Contractor.

The District shall at all times have access to the work wherever it is in preparation or progress and the Contractor shall provide proper facilities for such access and for inspection. The Contractor shall provide adequate safe means by which to inspect the work.

Failure or oversight of any Inspector to condemn defective materials at the time of use, or to condemn improper work at the time it is performed, shall not diminish the Contractor's obligations to meet the requirements of the Approved Plans and these Standard Specifications. The Contractor shall remove and replace any faulty materials and work at no additional cost to the District upon discovery of the defects or upon receipt of notice from the District to do so.

Defective work or material may be rejected prior to the date of acceptance of the work notwithstanding that such defective work or material may have been previously inspected. Acceptance shall not constitute approval of latent defects or waiver of maintenance requirements.

Any work covered up or otherwise rendered inaccessible without approval or consent of the District must, if required by the District, be uncovered for examination at the Contractor's expense. Any work done in the absence of the Inspector without written permission shall be subject to rejection.

1.13 TESTING LABORATORY SERVICES

- A. The Contractor shall engage testing firms to provide the various testing required for the project. Soils testing is typically required for projects, but concrete testing or other types of testing may additionally be required. The testing firm shall provide a competent, on-site Soils Technician to perform the various compaction testing required for the project. All tests shall be performed at the direction of the Soils Technician and in a manner acceptable to the District. Soils testing shall be performed in accordance with Section 02223 of these Standard Specifications.
- B. Prior to the District's acceptance of the project, a report of all soils tests taken shall be submitted to the District in accordance with Section 02223 of these Standard Specifications.

1.14 CONSTRUCTION STAKING AND PRESERVATION OF MONUMENTS

The Contractor shall perform all surveying and provide all GPS coordinate data to the District. The Contractor shall use the County's high precision GPS control network and shall provide the data using the same basis of coordinates used to prepare the Plans.

Staking of the various public improvements required shall be performed by the Contractor's surveyor. Generally, stakes for alignment and grade shall be set at 7.6m (25') intervals. The survey shall conform to the lines, grades, and dimensions shown on the Approved Plans. The District shall give an account of the adequacy, readability, and frequency of the stakes provided and shall comment on any remedies required.

The Contractor shall preserve all monuments, benchmarks, survey marks, and stakes. In case of their removal or destruction by Contractor or its employees, agents or subcontractors, the Contractor shall be liable for the cost of their replacement.

1.15 ENVIRONMENTAL CONTROL

The Contractor shall abide by all applicable local, state and federal regulations, and by the conditions of the Regional Water Quality Control Board.

The Contractor shall provide effective measures where necessary to prevent operations from producing dust in an amount damaging to property or causing a nuisance as determined by the District. The Contractor shall be responsible for any damage due to dust originating from its operations.

The Contractor shall anticipate and correct any erosion problem arising from its operations.

1.16 PUBLIC SAFETY AND TRAFFIC CONTROL

- A. The Contractor shall at all times conduct operations in a manner causing the minimum obstruction and inconvenience to public traffic. The Contractor shall not interfere with the normal operation of public transit vehicles unless otherwise authorized. Open trenches and excavations shall be provided with adequate barricades in accordance with the approved traffic control plan or the requirements of the agency of jurisdiction. At night, lights shall mark all open work and obstructions. The Contractor shall install and maintain all signs, lights, flares, barricades, traffic plates, railings, runways, stairs, bridges and other equipment necessary to safeguard the public. Safety instructions received from governmental authorities shall be followed, but compliance with such instructions shall not diminish the Contractor's responsibility or liability for accidents to workers or damage or injury to persons or property.

In accordance with generally accepted construction practices, the Contractor shall be solely and completely responsible for conditions of the job site, including safety of all persons and property during performance of the work, and the Contractor shall fully comply with all state, federal, and other laws, rules, regulations, and orders relating to the safety of workers and others.

The right of the District to conduct construction review or observation of the Contractor's performance does not include review or observation of the adequacy of the Contractor's safety measures in, on, or near the construction site.

The Contractor shall take immediate action to correct any condition adversely affecting public safety.

- B. The Contractor shall submit a traffic control plan to the County of San Diego and shall obtain approval prior to starting the work.

1.17 PROTECTION OF EXISTING FACILITIES

- A. The Contractor's attention is directed to the possible existence of pipe and other underground improvements that may or may not be shown on the Approved Plans. Once discovered, the Contractor shall preserve and protect all such improvements whether shown on the Approved Plans or not. The Contractor shall provide and install suitable safeguards, and shall be responsible for the care and protection of all existing sewer and water pipe, electrical and telephone conduits, gas mains, culverts, or other above-ground

or below-ground facilities or structures which may be encountered in or near the area of work. It shall be the responsibility of the Contractor to notify each agency of jurisdiction and utility company and to make arrangements for location of facilities prior to beginning construction. In the event of damage to existing facilities during the progress of the work, such facilities shall be replaced or restored to original condition, as determined by District, at the Contractor's expense.

- B. The Contractor shall be responsible for determining in advance the location, elevation, alignment and pipe type and size of all existing pipelines to which connections are to be made. Potholing to determine location will be allowed only after providing the District with three (3) day's advance notice. The Contractor is required to contact Underground Service Alert (USA) at 1-800-227-2600 or 1-800-422-4133 for mark-out of all utilities in the area of the work.
- C. If the Contractor, either before commencing work or during the course of the work, finds any discrepancy between specifications or drawings and the physical conditions at the site of the work, Contractor shall promptly notify the District in writing of such discrepancy.

1.18 PROTECTION OF LANDSCAPING

- A. The Contractor shall be responsible for the protection of all trees, shrubs, fences, and other landscape items adjacent to or within the work area, unless specific removals are indicated on the Approved Plans.
- B. In the event of damage to landscape items, including the thickness of topsoil, the Contractor shall replace the damaged items in kind, in a manner satisfactory to the District and the Developer.
- C. When pipelines are proposed within planted or otherwise improved areas in public or private easements, the Contractor shall restore such areas to original condition after completion of the work.
- D. When pipelines are proposed within unimproved areas, the ground surface shall be dressed smooth to the contour of the original ground and left in a neat, presentable condition, free of cleared vegetation, rubbish and other construction wastes. Rocks and clumps that cannot be readily covered by spreading shall be hauled away and disposed of by the Contractor.
- E. Unimproved areas disturbed during construction of the pipeline shall be hydro seeded in accordance with these Standard Specifications.

1.19 PUBLIC UTILITIES

- A. In case it should be necessary to relocate or temporarily maintain the property of any public utility or any other property, and it is understood that the cost of such relocation or temporary maintenance is not required to be borne by the owner of the utility or property, the Contractor shall bear all expenses incidental to the removal or temporary maintenance of such property in a manner satisfactory to said owner. It is understood that in such cases, the utility or property owner has the option of doing such work with his or her own forces, or permitting the work to be performed by the Contractor.
- B. The right is reserved to the State, County, City, District or utility owners to enter at any time upon any street, alley, right of way or easement for the purpose of making changes for maintenance or repairs to their property necessitated by the Contractor's work.

1.20 UTILITIES CROSSING WATER, RECYCLED WATER OR SEWER FACILITIES

Wherever new utilities cross under or over water, recycled water or sewer facilities, the minimum vertical separation shall be 300mm (12") unless otherwise approved by the District Engineer. All new utilities crossing under or over water, recycled water or sewer facilities shall remain exposed until inspected and approved by the District Engineer. Wherever new utilities cross under or over water, recycled water or sewer facilities, backfill and compaction within the limits of the water, recycled water, or sewer facility trench width shall be in strict conformance with the backfill and compaction requirements specified herein.

1.21 HORIZONTAL SEPARATION OF UTILITIES PARALLELING WATER, RECYCLED WATER OR SEWER FACILITIES

Wherever new utilities parallel water or sewer facilities, the minimum horizontal separation shall be such that 36" of undisturbed soil separates adjacent trench edges, and a minimum of 6' separates pipelines, unless otherwise approved by the District Engineer.

1.22 PROTECTION OF WORKERS IN TRENCH EXCAVATION

Whenever work involves trench excavation, the Contractor shall provide all necessary shoring, bracing, sloping, or other provisions to be made for worker protection from hazard of caving ground during the excavation. If such plan varies from the shoring system standards established by the Construction Safety Orders of the Division of Industrial Safety, a Civil Engineer or Structural Engineer registered in the State of California shall prepare the plans.

Contractor shall comply with the Safety Orders of California, Code of Regulations: Title 8, Section 1539 (Excavation, Trenches, Earthwork).

1.23 WORK WITHIN CONFINED SPACES

The Contractor shall comply with all Federal and State regulations for confined space entry. Work inside confined spaces as defined by the applicable regulations shall not be undertaken until all the tests and safety provisions of the Code of Federal Regulations 1910.146, and the Safety Orders of the California Code of Regulations Title 8 Article 108 sections 5156 et seq. for confined space entry have been performed and the area is verified as safe to enter.

1.24 CONSTRUCTION EQUIPMENT

The Contractor shall furnish appropriate construction equipment to perform the work in accordance with the Approved Plans and Specifications. Such equipment shall be in a good state of repair and shall be maintained in such state during the progress of the work. In no case shall the manufacturer's rating or capacity limitations for any equipment be exceeded.

1.25 STORAGE OF MATERIALS

All materials for use in the work shall be stored by the Contractor in such manner as to prevent damage from exposure to the elements, admixture of foreign materials, or from any other cause. The Contractor shall be entirely responsible for damage or loss by weather or other causes. The Material Safety Data Sheets (MSDS) for all products to be used in the work shall be kept on-site

by the Contractor, and the material manufacturer's recommendations for proper storage of its products shall be strictly followed.

Materials shall not be stored on District property without the written permission of the Engineer. The Contractor shall be responsible to provide its own storage area or property. Materials for use on the work shall be stored on private property only as allowed by law and with the written permission of the property owner, and a copy of such permission shall be provided to the District. In addition, a release letter signed by said property owner and stating that materials are no longer stored on the property and that Contractor has restored the area to original condition is required prior to the filing of the Notice of Completion.

1.26 HOURS OF WORK

The normal hours of work shall be between the hours of 7:30 a.m. and 4:30 p.m., Monday through Friday, excepting District-recognized holidays or as modified by Permits. The District shall receive written notice 5 days prior to any proposed change in work hours. In no case shall any work be performed outside of the normal working hours indicated above without prior approval by the District. Work hours associated with shutdowns shall be per Section 01115.

1.27 WATER AND POWER FOR CONSTRUCTION PURPOSES

Water for construction purposes:

- A. The Agency will provide water service at no cost to the contractor personnel, including construction water.
- B. Location of meter will be determined during the Pre-Construction Meeting and placed by District before start of Work
- C. Damage caused to the meter will be charged to the Contractor.
- D. Water for construction purposes outside the District's service area shall be obtained from the District within which the project lies.

Contractor shall make all arrangements for electrical power required during construction.

1.28 HOUSEKEEPING DURING CONSTRUCTION AND FINAL CLEAN-UP

- A. The Contractor shall provide suitable drainage and shall erect such temporary structures as are necessary to protect the work or materials from damage. The Contractor shall rebuild, repair, restore, and make good all injuries, losses, or damages to any portion of the work or the materials occasioned by any cause before the acceptance of the work by District and shall bear the expense thereof.
- B. The Contractor shall, at all times during the course of the work, maintain work areas and all adjacent properties and public access roads free from accumulations of waste, debris, rubbish or construction materials.
- C. The Contractor shall conduct cleaning and disposal operations to comply with local ordinances and anti-pollution laws.
- D. Dry materials and rubbish shall be moistened to prevent blowing dust. Loads of excavated materials leaving the site or being imported to the site shall be covered or moistened to prevent blowing dust.

- E. Upon completion of the work, and before making application for acceptance of the work, the Contractor shall clean all rights-of-way, streets, borrow pits, and all other grounds occupied by him in connection with the work. All rubbish, excess materials, temporary structures and equipment shall be removed. All parts of the work shall be left in a neat and presentable condition, as determined by the Engineer, prior to acceptance of the work by District.

1.29 HAZARDOUS WASTE AND UNKNOWN PHYSICAL CONDITIONS

If conditions listed below are found during construction, or if any other conditions are found during construction that may be detrimental to the District's facilities being constructed, or to the health and safety of the public, the Contractor shall promptly notify the District.

- A. Material that the Contractor or Engineer believes may be hazardous waste, as defined in Section 25117 of the Health and Safety Code, and is thus required to be removed to a Class I, Class II, or Class III disposal site in accordance with the provisions of existing law. If such material is discovered, Contractor shall immediately cease work and shall not disturb the job site except as required to protect public safety.
- B. Subsurface or latent physical conditions at the site differing from those indicated.
- C. Unknown physical conditions at the site of any unusual nature, different materially from those ordinarily encountered and generally recognized as inherent in work of the character provided in the Contract.

The Contractor shall promptly inform the District of any such conditions found during construction. The District shall investigate the conditions, and if it finds that the conditions do materially differ from those shown or expected, or do involve material that may be hazardous waste, Contractor shall cease work in the impacted area. If material that may be hazardous waste is discovered, the Developer shall insure that the appropriate government agencies are contacted prior to any further work being performed and that a solution is implemented.

1.30 WORK TO BE DONE

The work to be done consists of furnishing all materials, equipment, labor and all other items necessary for the construction and installation of a complete facility as shown on the Approved Plans and in accordance with these Standard Specifications. In some instances, the District may furnish certain materials and services, which will be expressly called out on the Approved Plans.

The District's approval of the plans prepared by a Private Engineer denotes agreement with the plans as prepared and is not an acceptance of responsibility as to accuracy. The Private Engineer shall be responsible for any errors, coordination with other agencies/utilities and interpretation of plans. The intent is that the completed Work shall be in general conformance with the Approved Plans and in accordance with the requirements of these Standard Specifications.

1.31 SCHEDULE

The Contractor shall submit for approval a detailed schedule of work as described in Specification Section 01115, Construction Sequence.

1.32 CHANGES TO THE WORK

If the District, due to conditions that change during the progress of the work, determines it impracticable for the Contractor to strictly comply with the Approved Plans or the Standard Specifications, the District may prescribe a modification of requirements. The District may at any time during the life of the project, by written order, make such changes as it may find necessary in the design, line, grade, form, location, dimensions, plan or material of any part of the work originally specified or shown on the Approved Plans.

1.33 RECORD DRAWINGS

- A. During the course of the work, the Contractor shall keep accurate and updated records of the changes made to the work. The changes may be dictated by field conditions, unknown obstructions, design oversight, or other circumstances determined to be in the best interest of the District.
- B. At the end of the project, the Contractor shall provide the District with two sets of prints, with all changes redlined. In addition to the field changes, the correct location of all water and sewer services and driveway centerlines with stations shall be indicated. The District's field representative shall verify that all changes have been included. All revisions will be incorporated.
- C. Owner to do final verification survey and draw As-Builts based on redlined drawings provided by the Contractor.

1.34 PROJECT CLOSEOUT AND FINAL ACCEPTANCE

The District's Board of Directors or designee shall be responsible for final acceptance of all projects. The following items of work shall be completed prior to final acceptance by District:

- A. The project has been completed in accordance with the Approved Plans, the job specifications and these Standard Specifications.
- B. Final inspection has been performed by District. Any "punch list" items generated by preliminary inspection shall have been completed.
- C. Record drawings reflecting any changes to the project have been submitted to the District's Inspection Department in accordance with these Standard Specifications.
- D. A Soils Test Report has been submitted to the District in accordance with Section 02223 of these Standard Specifications.
- E. All aspects of the Construction Agreement have been completed to the satisfaction of the District.

Following final acceptance by the District, the District will prepare a Notice of Completion and will have such Notice recorded by the County Recorder.

1.35 WARRANTY

- A. The work shall be guaranteed against failure due to defective materials or workmanship for a period of one (1) year from the recording date of the Notice of Completion. The one-year warranty period shall not, in any way, affect the liability of any party for latent or patent defects allowed for under State law.
- B. All repairs shall be made pursuant to the Development Agreement with the District and in accordance with the District's Rules and Regulations and current Standard Specifications.

1.36 WARRANTY INSPECTION

The District will perform a warranty inspection prior to the expiration of the one-year warranty period. The Developer will be notified in writing of any deficiencies revealed by this inspection. The warranty bond will not be released until the required repairs are completed. If the warranty inspection is satisfactory, the District will release the warranty bond at the end of the one-year warranty period.

PART 2 MATERIALS
"Not Used"

PART 3 EXECUTION
"Not Used"

END OF SECTION

SECTION 01025

MEASUREMENT AND PAYMENT

PART 1 - GENERAL

1.01 DESCRIPTION

- A. This section defines the Lump Sum Prices listed in the Bid Schedule, and the manner in which they will be used to determine measurement and payment for all items included in the Bid Schedule. Parts 2 and 3 of this section describe the procedures required to be followed for monthly progress payments to the CONTRACTOR.
- B. Payment for all items of the Bid Schedule shall include all compensation to be received by the CONTRACTOR for furnishing all tools, equipment, supplies, and manufactured articles, and for all labor, operations, and incidentals appurtenant to the items of WORK being described, as necessary to complete the various items of the WORK all in accordance with the requirements of the Contract Documents, including all appurtenances thereto, including Safety and Health Requirements of the California Division of Industrial Safety and the Occupational Safety and Health Administration of the U.S. Department of Labor (OSHA). No separate payment will be made for any item that is not specifically set forth in the Bid Schedule, and all costs shall be included in the prices named in the Bid Schedule for the various items of WORK.
- C. Monthly pay requests are due by the 10th of each month. Failure of the CONTRACTOR to submit his pay request by this date may be cause for the rejection of the pay request. If rejected, the CONTRACTOR will have to resubmit his pay request the next month. Should the submittal date fall on a holiday or weekend day during the month then the CONTRACTOR shall consider the next working day as the due date.

1.02 MEASUREMENT AND PAYMENT

- A. General: This article defines the manner and method to develop the Lump Sum bid amounts of all items identified in the Bid Schedule. Bid amounts will include all plant, equipment, tools, materials, labor, service, and all other items required to complete the WORK included in the Contract unless specifically excluded by this section. WORK required for which no separate bid item is identified will be considered as a subsidiary obligation of the CONTRACTOR, and the cost therefore shall be included in the most applicable bid item.
- B. Contract Required WORK
 - 1. **Bid Item No. 1 – Mobilization/Demobilization (Lump Sum):**

Payment for general construction will be made at the lump sum price named in the Bid Schedule under **item No. 1**, which price shall constitute full compensation for completion of all mobilization, demobilization, and insurance associated with construction activities for CONTRACTOR required efforts furnishing and constructing all facilities, completed as defined within these Contract Documents,
 - 2. **Bid Item No. 2 - General Construction – 6” Sewer Main Relining (Linear Foot):**

Payment for general construction and SEWER MAIN RELINING of six (6) inch sewer mains, will be made per linear foot of sewer main price named in the Bid Schedule under **item No. 2**, which price shall constitute full compensation for completion of all supervision, planning, design, engineering, cleaning, inspection,

lining, curing, re-connection of lateral, by-pass pumping and all construction and permit fees associated with construction activities for CONTRACTOR required efforts furnishing and constructing all facilities, completed as defined within these Contract Documents.

3. Bid Item No. 3 - General Construction – 8” Sewer Main Relining (Linear Foot):

Payment for general construction and SEWER MAIN RELINING of eight (8) inch sewer mains, will be made per linear foot of sewer main price named in the Bid Schedule under **item No. 3**, which price shall constitute full compensation for completion of all supervision, planning, design, engineering, cleaning, inspection, lining, curing, re-connection of lateral, by-pass pumping and all construction and permit fees associated with construction activities for CONTRACTOR required efforts furnishing and constructing all facilities, completed as defined within these Contract Documents.

4. Bid Item No. 4 - General Construction – 10” Sewer Main Relining (Linear Foot):

Payment for general construction and SEWER MAIN RELINING of ten (10) inch sewer mains, will be made per linear foot of sewer main price named in the Bid Schedule under **item No. 4**, which price shall constitute full compensation for completion of all supervision, planning, design, engineering, cleaning, inspection, lining, curing, re-connection of lateral, by-pass pumping and all construction and permit fees associated with construction activities for CONTRACTOR required efforts furnishing and constructing all facilities, completed as defined within these Contract Documents.

5. Bid Item No. 5 - General Construction – Chemical Grouting (Each):

Payment for general construction and Chemical Grouting of infiltration leaks (cracks with water flow, etc) in the sewer mains and / or lateral interface, will be made per EACH of the price named in the Bid Schedule under **item No. 5**, which price shall constitute full compensation for completion of all supervision, planning, design, engineering, cleaning, inspection, lining, curing, re-connection of lateral, by-pass pumping and all construction and permit fees associated with construction activities for CONTRACTOR required efforts furnishing and constructing all facilities, completed as defined within these Contract Documents.

PART 2 - PRODUCTS

2.01 GENERAL PROGRESS PAYMENT REQUIREMENTS

- A. Earned value is derived from the current status of the CONTRACTOR Construction Schedule as determined by the monthly schedule status submittals. Each schedule status submittal is reviewed and approved by the District prior to the CONTRACTOR obtaining approval for the Summary of Earned Values or quantities installed and the Application for Payment.

PART 3 – EXECUTION

3.01 MONTHLY REVIEWS/APPLICATION FOR PAYMENT

- A. Monthly review meetings between the CONTRACTOR and the District will be held within 7 days prior to the payment application date designated by the District. Prior to the monthly review meeting, the CONTRACTOR will submit the record of approved quantities installed and a signed application for payment showing a Summary of Earned Values for the reporting and payment period so that the District can compare earned values to available status data. The CONTRACTOR shall make any adjustments to the Master Record Documents, updated schedule, and payment applications deemed necessary. Upon completion of the adjustments the District will sign the payment request.

END OF SECTION

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SECTION 01070

ABBREVIATIONS

PART 1 GENERAL

1.01 DESCRIPTION

This section describes abbreviations and how they are used in these specifications and on the Approved Drawings.

1.02 REFERENCED STANDARDS

The publications listed below form part of this specification to the extent referenced and are referred to in the text by the basic designation only. Reference shall be made to the latest edition of said standards unless otherwise called for.

CSI TD-2-4	-	Construction Specifications Institute Abbreviations
SSPWC	-	Standard Specifications for Public Works Construction "Greenbook"

1.03 DESCRIPTION

- A. When references are made in these specifications to the standards, specifications, or other published data of various international, national, regional, or local organizations, such organizations may be referred to by their acronym or abbreviation only.
- B. If an abbreviation is not listed below it shall be as described in Document TD-2-4 of the Construction Specifications Institute (CSI).
- C. Where the use of the San Diego Area Standard Specifications for Public Works Construction "Greenbook" or Regional Standard Drawings are required, reference should be made to the SSPWC for the use and description of abbreviations.
- D. Abbreviations can have more than one meaning. The abbreviation shall be considered with respect to different disciplines where the context in which each is used makes the meaning clear.
 1. Example:
 - a. FF means "finish floor" when referring to a floor slab.
 - b. FF means "flat face" when referring to a pipe flange.
- E. Discrepancies shall be noted and brought to the District's attention for interpretation.

1.04 LIST OF ABBREVIATIONS

The following list of abbreviations is for use in these Standard Specifications and the Approved Plans:

<u>ABBREVIATION</u>	<u>TERMS</u>
A	Ampere/Area
AA	Aluminum Association
AASHTO	American Association of State Highway and Transportation Officials
AB	Anchor Bolt/Aggregate Base
ABAN	Abandoned
ABC	Asphalt Base Course
AC	Acre/Asphalt Concrete/Alternating Current
ACI	American Concrete Institute
ACP	Asbestos-Cement Pipe
ACU	Access Door
AE	Architect-Engineer
AFF	Above Finished Floor
AGG	Aggregate
AI	The Asphalt Institute
AIA	American Institute of Architects
AISC	American Institute of Steel Construction, Inc.
AISI	American Iron and Steel Institute
AL	Aluminum
AMB	Ambient
AMP	Ampere
ANG	Angle
ANSI	American National Standards Institute
APA	American Plywood Association
API	American Petroleum Institute
APWA	American Public Works Association
ARCH	Architecture/Architectural
ARV	Air-Release Valve
ARVV	Air-Release and Vacuum Valve
ASCE	American Society of Civil Engineers
ASHRAE	American Society of Heating, Refrigeration and Air-Conditioning Engineers
ASME	American Society of Mechanical Engineers
ASPH	Asphalt
ASSY	Assembly
ASTM	American Society for Testing and Materials
ATS	Automatic Transfer Switch
AVE	Avenue
AVG	Average
AWG	American Wire Gage
AWS	American Welding Society
AWWA	American Water Works Association
BB	Back-to-Back
BC	Beginning of Curve/Back of Curb/Bare Copper
BEG	Begin
BETW	Between
BF	Blind Flange
BHP	Brake Horsepower
BK	Back/Brake
BKR	Breaker
BL	Building
BLK	Block
BLVD	Boulevard
BM	Bench Mark/Beam
BO	Blowoff
BOP	Bottom of Pipe

<u>ABBREVIATION</u>	<u>TERMS</u>
BOT	Bottom
BP	Baseplate
BRG	Bearing
BRNZ	Bronze
BTN	Button
BTU	British Thermal Unit
BUR CBL	Buried Cable
BFV	Butterfly Valve
BVC	Begin Vertical Curve
BW	Block Wall
C	Conduit/Celsius/Civil Drawings/Copper
CAB	Crushed Aggregate Base
CAP	Capacity
CB	Catch Basin/Circuit Breaker
CC	Cooling Coil
C-C	Center-to-Center
CCB	Concrete Block
CCP	Concrete Cylinder Pipe
CD	Cross Drain/Condensate Drain/Ceiling Diffuser
CEM	Cement
CF	Cubic Feet/Curb Face
CFH	Cubic Feet per Hour
CFM	Cubic Feet per Minute
CFS	Cubic Feet per Second
CG	Construction Grade
C&G	Curb and Gutter
CHG	Change
CHKD PL	Checkered Plate
CI	Cast Iron
CIP	Cast In Place/Cast-Iron Pipe
CISP	Cast Iron Soil Pipe
CISPI	Cast-Iron Soil Pipe Institute
CJ	Construction Joint
CL	Centerline/Class/Clearance/Chlorine
CLIP	Concrete Lined In-Place Steel Pipe
CLR	Clear
CMLC	Cement-Mortar Lined & Coated Steel Pipe
CMLSP	Cement-Mortar Lined Steel Pipe
CMP	Corrugated Metal Pipe
CMPA	Corrugated Metal Pipe Arch
CMU	Concrete Masonry Unit
CO	Cleanout/Conduit Only
COL	Column
COMM	Communication
COMP	Composite
COMPL	Complete
CONC	Concrete
CONN	Connection
CONST	Construct or Construction
CONT	Continuous
CONTR	Contractor
COORD	Coordinate/Coordinated
COP	Copper
COR	Corner
CORP	Corporation

<u>ABBREVIATION</u>	<u>TERMS</u>
CP	Cathodic Protection
CPLG	Coupling
CRSI	Concrete Reinforcing Steel Institute
CS	Commercial Standard, US Department of Commerce
CT	Center Top/Current Transformer
CTG	Coating
CTR	Center
CULV	Culvert
CU YD, CY	Cubic Yard
CYL	Cylinder
D	Degree of Curvature
DB	Direct Buried/Decibel
DBL	Double
DC	Direct Current
DEPT	Department
DET	Detail/Detour
DG	Decomposed Granite
DI	Drop Inlet
DIA	Diameter
DIAG	Diagonal
DIM	Dimension
DIMJ	Ductile-Iron Mechanical Joint
DIP	Ductile-Iron Pipe
DIPRA	Ductile-Iron Pipe Research Association
DISCH	Discharge
DIST	Distance
DMH	Drop Manhole
DN	Down
DR	Drain/Door
DSL	Diesel
DWG	Drawing
DWY	Driveway
E	East/Electrical Drawings
EA	Each
EC	End of Curve
ECC	Eccentric
ED	External Distance
EE	Each End
EF	Each Face/Exhaust Fan
EFF	Efficiency
EFL	Effluent
EGL	Energy Grade Line
EL	Elevation/Each Layer
E/L	Easement Line
ELEC	Electric
ELP	Elliptical
ENC	Encasement or Encased
ENCL	Enclosure
ENG	Engine
ENGR	Engineer
EOS	Equivalent Opening Size
EP	Edge of Pavement/Explosion Proof
EPA	Environmental Protection Agency (Federal)

<u>ABBREVIATION</u>	<u>TERMS</u>
EQ	Equation
EQL	Equal
ESMT	Easement
EST	Estimate or Estimated
ETC	And so Forth
EVC	End Vertical Curve
EW	Each Way
EXC	Excavate or Excavation
EXP	Expansion
EXST	Existing
EXT	Exterior/Extension
F	Fahrenheit/Floor
FAB	Fabricate
FBRBD	Fiberboard
FC	Foot-Candle
FCO	Floor Cleanout
FCV	Flow Control Valve
FD	Floor Drain
FDN	Foundation
FE	Flanged End/Fence
Fed Spec	Federal Specification
FF	Finished Floor/Flat Face
FG	Finished Grade
FH	Fire Hydrant
F&I	Furnish and Install
FIG	Figure
FIP	Female Iron Pipe Thread
FIT	Fitting
FL	Floor/Flow Line
FLG	Flange
FM	Force Main/Factory Mutual
FMH	Flexible Metal Hose
FNSH	Finish
FOC	Face of Concrete
FPC	Flexible Pipe Coupling
FPM	Feet per Minute
FPS	Feet per Second
FPUD	Fallbrook Public Utility District
FS	Finished Surface/Floor Sink/Federal Specifications
FSTNR	Fastener
FT	Feet
FTG	Footing
FUT	Future
G	Gas/General Drawings/Gram
GA	Gage
GAL	Gallon
GALV	Galvanized
GB	Grade Break
GDR	Guard Rail
GR	Grooved End
GENL	General
GFI	Ground Fault Interrupter
GM	Gas Main

<u>ABBREVIATION</u>	<u>TERMS</u>
GND	Ground
GPD	Gallons per Day
GPM	Gallons per Minute
GR	Grade
GSKT	Gasket
GUT	Gutter
GV	Gate Valve
H	Humidistat/Horizontal
HARN	Harness
HB	Hose Bib
HD	Heavy Duty
HDPE	High-Density Polyethylene Pipe
HGL	Hydraulic Grade Line
HGT	Height
HMWPE	High-Molecular Weight Polyethylene
HORIZ	Horizontal
HP	Horsepower/High Pressure
HPT	High Point
HR	Hour/Handrail
HS	High Strength
HV	Hose Valve
HVAC	Heating, Ventilating, and Air Conditioning
HW	Headwall/Hot Water
HWL	High Water Level
HWY	Highway
HYDR	Hydraulic
HZ	Hertz (cycles per second)
I	Intersection Angle/Instrumentation Drawings
ICBO	International Conference of Building Officials
ID	Inside Diameter
IE	Invert Elevation
IN	Inches
INCL	Include
INL	Inlet
INSUL	Insulating
INSTL	Install or Installation
INT	Interior
INTR	Intersection
INV	Invert
I/O	Inlet/Outlet
IP	Iron Pipe
IPS	Iron Pipe Size
IPT	Iron Pipe Thread
IRR	Irrigation
JB	Junction Box
JCT	Junction
JN	Join
JT	Joint
KG	Kilogram
KM	Kilometer
KIPS	Thousands of Pounds

<u>ABBREVIATION</u>	<u>TERMS</u>
KPA	Kilopascal
KV	Kilovolt
KW	Kilowatt
KWH	Kilowatt-Hour
KWHM	Kilowatt-Hour Meter
L	Length of Curve/Long/Landscaping Drawings
LATL	Lateral
LB	Pound
LCL	Local
LF	Linear Foot
LNDSCP	Landscaping
LOCN	Location
LP	Light Pole
LPT	Low Point
LR	Long Radius
LS	Lift Station
LT	Left/Light
LWC	Lightweight Concrete
LWIC	Lightweight Insulating Concrete
LWL	Low Water Level
M	Mechanical Drawings/Meter
MATL	Material
MAX	Maximum
MB	Machine Bolt/Megabyte/Millibars
MC	Metal Channel
MCM	Thousand Circular Mils
ME	Machined End
MECH	Mechanical
MFR	Manufacturer
MG	Million Gallons / mg = milligram
MGD	Million Gallons Per Day
MH	Manhole
MHZ	Megahertz
MI	Malleable Iron/Mile
MIL	Military Specifications
MIL-	Military Specification (leading symbol)
MIN	Minimum
MIP	Male Iron Pipe Thread
MISC	Miscellaneous
MJ	Mechanical Joint
MM	Millimeter
MO	Motor Operator/Motor Operated/Masonry Opening
MOD	Modification
MON	Monument
MOT	Motor
MOV	Motor Operated Valve
MSDS	Material Safety Data Sheet
MSL	Mean Sea Level
MTD	Mounted
N	North/Neutral/Nitrogen
NA	Not Applicable
NACE	National Association of Corrosion Engineers
NBS	National Bureau of Standards

<u>ABBREVIATION</u>	<u>TERMS</u>
N & C	Nail and Cap
NC	Normally Closed
NCV	Normally Closed Valve
NE	Northeast
NEC	National Electrical Code
NEMA	National Electrical Manufacturers Association
NFC	National Fire Code
NFPA	National Fire Protection Association
NIC	Not in Contract
NIP	Nipple
NO	Number/Normally Open
NOM	Nominal
NPT	National Pipe Taper
NRS	Non-Rising Stem
NSF	National Sanitation Foundation
NTS	Not to Scale
NW	Northwest
NWL	Normal Water Level
OA	Overall/Outside Air
OC	On Center/Overcurrent
OD	Outside Diameter
OE	Or Equal
OF	Outside Face
OFCI	Owner-Furnished Contractor-Installed
OFCR	Owner-Furnished Contractor-Relocated
OPER	Operator
OPNG	Opening
OPP	Opposite
OSHA	Occupational Safety and Health Administration, U.S. Department of Labor, as defined in the General Conditions
O TO O	Out to Out
OUTL	Outlet
OVFL	Overflow
OVHD	Overhead
P	Pole
PARA	Paragraph
PB	Push Button/Pull Box
PC	Point of Curvature/Programmable Controller
PCA	Portland Cement Association
PCC	Point of Compound Curvature/Portland Cement Concrete
PDMWD	Padre Dam Municipal Water District
PE	Plain End/Polyethylene/Professional Engineer
PEN	Penetration
PG	Pressure Gage
PI	Point of Intersection
PJTN	Projection
PKWY	Parkway
PL	Plate/Property Line
PLATF	Platform
PLF	Pounds per Lineal Foot
PM	Parcel Map
PNL	Panel
PO	Push-On

<u>ABBREVIATION</u>	<u>TERMS</u>
POB	Point of Beginning
POC	Point of Connection
PE	Polyethylene
POR	Portion
PP	Power Pole/Polypropylene
PPB	Parts Per Billion
PPM	Parts Per Million
PR	Pair
PRC	Point of Reverse Curve
PRESS	Pressure
PRL	Parallel
PRPSD	Proposed
PRVC	Point of Reverse Vertical Curve
PSI	Pounds Per Square Inch
PSIG	Pounds Per Square Inch Gage
PSF	Pounds Per Square Foot
PT	Point of Tangency
PV	Plug Valve
PVC	Polyvinyl Chloride/Point of Vertical Curvature
PVI	Point of Vertical Intersect
PVMT	Pavement
PWR	Power
Q	Flow Rate
QTY	Quantity
R	Right/Radius
RAF	Return Air Fan
RC	Reinforced Concrete
RCP	Reinforced Concrete Pipe
RCPA	Reinforced Concrete Pipe Arch
RD	Road
RDC	Reduce
RDCR	Reducer
RDWY	Roadway
REF	Reference
REINF	Reinforce or Reinforced
RELOC	Relocate
REQD	Required
RES	Reservoir
REV	Revise/Revision
RF	Raised Face
RH	Relative Humidity
RJ	Restrained Joint
RND	Round
RM	Record Map
ROS	Record of Survey
RPM	Revolutions Per Minute
RS	Road Survey
RSD	Regional Standard Drawings
RST	Reinforcing Steel
RT	Right
R/W	Right-of-Way
RWGV	Resilient-Wedge Gate Valve

<u>ABBREVIATION</u>	<u>TERMS</u>
S	South
SAE	Society of Automotive Engineers
SAN	Sanitary
SC	Seal Coat
SCADA	Supervisory Control and Data Acquisition
SCFM	Standard Cubic Feet Per Minute
SCHED	Schedule
SCRN	Screen
SD	Storm Drain
SD CO	San Diego County
SDG	Siding
SE	Southeast
SECT	Section
SF	Square Feet
SGL	Single
SH	Sheet/Sheeting/Shielded
SHT	Sheet
SIM	Similar
SKWK	Sidewalk
SLP	Slope
SLV	Sleeve
SM	Sheet Metal
SOL	Solenoid
SOV	Solenoid-Operated Valve
SP	Space/Steel Pipe/Static Pressure/Spare/Stand Pipe
SPCG	Spacing
SPEC	Specification
SPLC	Splice
SPRT	Support
SQ	Square
SS	Sanitary Sewer
SSPC	Steel Structures Painting Council
SSPWC	Standard Specifications for Public Works Construction
SS	Stainless Steel
ST	Street
STA	Station
STBY	Standby
STD	Standard
STK	Stake
STL	Steel
STR	Straight
STRL	Structural
STRUCT	Structure
STS	Storm Sewer
SURF	Surface
SW	Southwest
SWG	Swing
SYMM	Symmetrical
SYS	System
T	Ton/Tangent Length of Curve
TAN	Tangent
T/B	Top of Beam
TB	Top of Bank/Terminal Board
T&B	Top and Bottom

<u>ABBREVIATION</u>	<u>TERMS</u>
TBG	Tubing
TBM	Temporary Bench Mark
TC	Top of Curb
TDH	Total Dynamic Head
TDS	Total Dissolved Solids
TEL	Telephone
TEMP	Temperature/Temporary
THB	Thrust Block
THD	Thread or Threaded
THH	Thrust Harness
THK	Thick
TO	Turnout
T/O	Top of
TOC	Top of Concrete/Top of Curb
TOP	Top of Pipe
TOS	Top of Slab
TOT	Total
TP	Telephone Pole
TRD	Thread
TRA	Tie Rod Assembly
TS	Tube Sheet
TYP	Typical
UBC	Uniform Building Code
UD	Underdrain
UG	Underground
UL	Underwriters Laboratories, Inc.
ULT	Ultimate
UON	Unless Otherwise Noted
UPC	Uniform Plumbing Code
UTC	Underground Telephone Cable
UTIL	Utilities
V	Vent/Valve/Volt/Vertical
VAC	Vacuum/Volts, Alternating Current
VC	Vertical Curve
VEL	Velocity
VERT	Vertical
VFD	Variable Frequency Drive
VOL	Volume
VPC	Vertical Point of Curve
VPI	Vertical Point of Intersection
VPT	Vertical Point of Tangency
W	West/Watt/Wide/Water/Wire
W/	With
WADG	Water Agencies' Design Guide
WAS	Water Agencies' Standards
WASC	Water Agencies' Standards Committee
WE	Weld End
WG	Water Gage
WL	Waterline
WLD	Welded
WM	Water Meter
W/O	Without
WP	Waterproof/Working Point

<u>ABBREVIATION</u>	<u>TERMS</u>
WSE	Water Surface Elevation
WSP	Water Stop
WT	Weight
WTR	Water
WWF	Welded Wire Fabric
WWM	Woven Wire Mesh
WWR	Welded Wire Reinforcement
YCO	Yard Cleanout
YD	Yard
YP	Yield Point
YR	Year
YS	Yield Strength

PART 2 MATERIALS

"NOT USED"

PART 3 EXECUTION

"NOT USED"

END OF SECTION

SECTION 01110
SUMMARY OF WORK

PART 1 - GENERAL

1.1 Work Covered by Contract Documents

The Work includes furnishing products, labor, tools, transportation, and services to construct as follows:

- A. Provide and pay for all labor, equipment, materials, machinery, facilities, and services necessary to complete the work in accordance with these specifications.
- B. Sewer Main Relining, as specified in the contract documents.
 - 1. By-pass pumping, as needed
 - 2. Preparation:
 - i. Cleaning of the sewer main in preparation for lining construction.
 - ii. Pre lining inspection with TV camera
 - iii. Internal spot repairs, including root removal and chemical grouting of excessive infiltration, as needed.
 - 3. CIPP Lining placement and curing.
 - 4. Cut and smooth all lateral connections. No Burrs allowed at interface.
 - 5. Post lining inspection video.
- C. All work will be inspected and TVed – for review and approval by the inspector, as specified in the contract documents.

1.2 Project Location

- A. Sewer Mains identified for lining are shown in Appendix A, Maps. The number of sewer service laterals is indicated on the maps and location can be determined during inspection and video documentation.
- B. Internal spot repairs will be determined during inspection and the results will be discussed with the District Engineer.
- C. Conditions at the Project site are as follows:
Ground Elevation: 550 feet to 750 feet MSL
Typical Temperature Range: 31° - 110° F

1.3 Owner Furnished Equipment and Materials

- A. None

1.4 Contractor's Use of Site

- A. CONTRACTOR shall coordinate use of the premises, for his storage and the operations of his workmen, with Fallbrook Public Utility District (FPUD).

B. Limits on Contractor's use of Site are:

1. The CONTRACTOR must operate entirely within the on-site space allocated to him/her, and as agreed upon with Owner. This includes the public Right Of Ways and District Easements. Any deviation from this must be authorized in writing by Owner.
2. The CONTRACTOR shall be solely responsible for obtaining and paying all costs in connection with any additional work area, storage sites, and access to the site or temporary right-of-way which may be required for proper completion of the Work.
3. It shall be understood that responsibility for protection and safekeeping of equipment and materials on or near the site will be entirely that of the CONTRACTOR and that no claim shall be made against the OWNER, or his authorized representatives by reason of any act. It shall be further understood that should any occasion arise necessitating access to the sites occupied by these stored materials or equipment, the OWNER shall direct the CONTRACTOR owning or responsible for the stored materials and equipment to immediately move the same. No materials or equipment may be placed upon the property other than in the areas designated on the Drawings unless the OWNER has agreed to the location contemplated by the CONTRACTOR to be used for storage, and written authorization has been obtained from a representative for the OWNER. All stored materials shall be labeled according to the appropriate contractor or subcontractor, with the manufacturer's label as well. Appropriate material safety data sheets (e.g. MSDS) shall be provided.
4. The CONTRACTOR is responsible for maintaining conditions at the project site meeting in accordance with the California Code of Regulations, Title 8, Industrial Relations, Chapter 4, Division of Industrial Safety, including all amendments thereto.
5. The CONTRACTOR shall comply with Environmental Protection Agency (EPA) 16CFR 1305, including all amendments thereto.

1.5 EASEMENTS AND RIGHTS-OF-WAY

- A. Easements and rights-of-way will be provided by Owner. Confine construction operations within Owner's property, public rights-of-way, easements obtained by Owner, and the limits shown. Use care in placing construction tools, equipment, excavated materials, and products to be incorporated into the Work to avoid damage to property and interference with traffic. Do not enter private property outside the construction limits without permission from the owner of the property.

1.6 NOTICES TO OWNERS AND AUTHORITIES OF PROPERTIES ADJACENT TO THE WORK

- A. Notify the representative for the OWNER of any disruption to services or access when prosecution of the Work may affect their property, facilities, or use of property.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION

3.1 Work Sequence

- A. The general sequence of Work shall be as required by Contract Specifications and any sequencing shall be discussed and determined at the construction meetings. The project has been outlined according to the MAPs included in Appendix A: Maps A, B, and C. Work Sequence can be discussed and adjusted, if needed, as determined and agreed to in the pre-construction meeting.

B. The list of required work and detail is as follows:

a. SEWER MAIN RELINING AND LATERAL WORK (See MAPs in Appendix 'A')

MAP	Item	Single shot #	Item ID	QUANTITY	location
-	FALLBROOK PROJECT OVERVIEW MAP			Linear Feet	
A	8" Sewer Main		B130 to B11	340 (1) Laterals	W. BEECH ST
A	8" Sewer Main		B11 to B12	344 (3) Laterals	S. MISSION R
B	6" Sewer Main		B50 to B51	177 (0) Laterals	W. ELDER ST
C	8" Sewer Main		O55 to O54	350 (1) Laterals	FALLBROOK ST
D	8" Sewer Main		P51 to P14	217 (2) Laterals	CALMIN DR
E	6" Sewer Main		J36 to J38	298 (0) Laterals	R.O.W. OFF STAGECOACH LANE
F	10" Sewer Main		J12 to J10	101 (0) Laterals	STAGECOACH LANE AND MISSION RD
G	6" Sewer Main		J115 to J92	265 (3) Laterals	R.O.W. OFF WINTER HAVEN RD
G	6" Sewer Main		J92 to J91	185 (1) Laterals	R.O.W. OFF WINTER HAVEN RD
	TOTALS	6"	925	10"	101
	2277 Ft (all)	8"	1251 FT	LATERALS	11

END OF SECTION

SECTION 01291

SCHEDULE OF VALUES

PART 1 - GENERAL

1.1 DESCRIPTION

- A. Submit to ENGINEER for acceptance a Schedule of Values that allocates cost to each item of the Work. Schedule of Values list of line items shall correspond to each aspect of the Work, establishing in detail the portion of the Contract Price allocated to each major component of the Work.
- B. Upon request of ENGINEER, support values with data that substantiate their correctness.
- C. Submit preliminary Schedule of Values to ENGINEER for initial review. CONTRACTOR shall incorporate ENGINEER's comments into the Schedule of Values and resubmit to ENGINEER. ENGINEER may require corrections and re-submittals until Schedule of Values is acceptable.
- D. Schedule of Values and the Progress Schedule updates specified in Section 01321, Progress Schedule, shall be basis for preparing each Application for Payment. Schedule of Values may be used as a basis for negotiating price of changes, if any, in the Work.
- E. Include in Schedule of Values unit price payment items with their associated quantity. Provide in the Schedule of Values detailed breakdown of unit prices when required by ENGINEER.
- F. Requirements for preliminary Schedule of Values and Schedule of Values are:
 - 1. Schedule of Values shall show division of Work between CONTRACTOR and Subcontractors. Line items for Work to be done by Subcontractor shall include the word, "(SUBCONTRACTED)".
 - 2. Schedule of Values shall include breakdown of costs for materials and equipment, installation, and other costs used in preparing the Bid by CONTRACTOR and each Subcontractor. List purchase and delivery costs for materials and equipment for which CONTRACTOR may apply for payment as stored materials.
 - 3. Include separate amounts for each Specification Section in the Contract Documents by structure, building, and work area.
 - 4. Identify each line item with number corresponding to the associated Specification Section number. List sub-items of major products or systems, as appropriate or when requested by ENGINEER.
 - 5. Sum of individual values shown on the Schedule of Values shall equal the total of associated payment item. Sum of payment item totals in the Schedule of Values shall equal the Contract Price.
 - 6. Include in each line item a directly proportional amount of CONTRACTOR's overhead and profit. Do not include overhead and profit as separate item(s).

7. Include separate line item for each allowance, and for each unit price item
8. Include line item for bonds and insurance, in amount not exceeding 2.0 percent of the Contract Price. This may be applied for in the first Application for Payment.
9. Include separate line items under each appropriate payment item for mobilization and demobilization. Document for ENGINEER the activities included in mobilization and demobilization line items.
 - a. Mobilization will be limited to 2 percent of the Contract Price, and will be paid in 2 payments, each of 50 percent of total amount for mobilization.
 - b. Demobilization shall be at least 2 percent of the Contract Price and shall be included with the Application for Payment following Substantial Completion, or other schedule accepted by ENGINEER.
10. Schedule of Values shall include an itemized list of Work by work area, as applicable.
11. Submit Schedule of Values on 8.5-inch by 11-inch white paper, using the continuation sheets of the Application for Payment.

1.2 SUBMITTALS

- A. Informational Submittals: Submit the following:
1. Submit to ENGINEER: 2 copies of Schedule of Values, 1 copy Electronically.
 2. Content of Schedule of Values submittals shall conform to Article 1.1 of this Section.
 3. Time Frames for Submittals:
 - a. Submit preliminary Schedule of Values within ten days of date that the Contract Times commence running in accordance with the Notice to Proceed.
 - b. Submittal of the Schedule of Values shall be in accordance with the General Conditions. ENGINEER will not accept Applications for Payment without an acceptable Schedule of Values.
 - c. When required by ENGINEER, promptly submit updated Schedule of Values to include cost breakdowns for changes in the Contract Price.

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION (NOT USED)

END OF SECTION

SECTION 01310

PRE-CONSTRUCTION MEETINGS

PART 1 - GENERAL

1.1 DESCRIPTION

- A. A pre-construction conference will be held for the Project. CONTRACTOR shall attend the conference prepared to discuss all items on the agenda. The representatives present for each party shall be authorized to act on their behalf.
- B. Purpose of the conference is to designate responsible personnel, establish working relationships, and establish administrative provisions for the Project. Matters requiring coordination will be discussed and procedures for handling such matters will be established.
- C. Date, Time and Location: Conference will be held after execution of the Contract and before Work starts at the Site. ENGINEER will determine the date, time, and location of the conference and advise the interested and involved parties.
- D. ENGINEER will distribute an agenda, preside at the conference, and prepare and distribute meeting minutes to all meeting participants and others as requested.
- E. CONTRACTOR shall provide data required and contribute appropriate items for discussion. Unless previously submitted to ENGINEER, CONTRACTOR shall bring to the conference a draft of each of the following:
 - 1. Progress Schedule.
 - 2. List of required Shop Drawings and submittals.
 - 3. Schedule of Values.
 - 4. CONTRACTOR'S Site-specific health and safety plan.
 - 5. List of emergency contact information.

1.2 REQUIRED ATTENDANCE

- A. Conference shall be attended by CONTRACTOR'S project manager, Site superintendent, and major Subcontractors and major equipment Suppliers, as CONTRACTOR deems appropriate.
- B. Other attendees will be representatives of:
 - 1. OWNER.
 - 2. ENGINEER.
 - 3. Governmental agencies having control or responsibility, if available.
 - 4. Utility companies.
 - 5. Others as requested by OWNER, CONTRACTOR, or ENGINEER.

1.3 AGENDA

- A. Agenda: A complete agenda will be furnished to CONTRACTOR prior to the conference. However, CONTRACTOR shall be prepared to discuss the following:
1. Designation of responsible personnel.
 2. Communications and correspondence.
 3. Shutdown Coordination.
 4. Emergency contact information.
 5. Review of scope of Work.
 6. Review of Contract Times, Milestones, and completion dates.
 7. Subcontractors.
 8. Progress Schedule.
 9. Schedule of Values.
 10. Project coordination and coordination with OWNER'S operations.
 11. Progress meetings.
 12. Submittals and Shop Drawings: processing and schedule of submittals
 13. Substitutions.
 14. Payments, retainage, payrolls, and Substantial Completion.
 15. Processing of Field Orders and Change Orders.
 16. Use of premises, security, housekeeping, safety, CONTRACTOR'S responsibility for safety and first aid procedures, Site access.
 17. Field offices, trailers, temporary facilities.
 18. Storage of materials.
 19. Construction photographs.
 20. Record drawings.
 21. Clarifications.
 22. Requirements for copies of Contract Documents and availability.
 23. Layouts and surveys.
 24. Hours of Work and overtime.
 25. Permits.
 26. Insurance in force.
 27. Disposal of demolition materials and Dewatering.
 28. Project Water and Location of Construction Meter
 29. Next meeting.
 30. General discussion and questions.

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION (NOT USED)

END OF SECTION

SECTION 01311

PROJECT COORDINATION

PART 1 - GENERAL

1.1 DESCRIPTION

- A. As more fully set forth in of the General Conditions, CONTRACTOR shall coordinate the Work, including his Subcontractors and Suppliers, as required to complete the Work within the Contract Times.
- B. As set forth in the General Conditions, CONTRACTOR shall cooperate with and coordinate the Work with other CONTRACTORS, including utility service companies or OWNER'S employees performing Work at the Site.
- C. CONTRACTOR will not be responsible or liable for damage unless it is through the negligence of CONTRACTOR.
- D. CONTRACTOR shall also coordinate the Work with the others to assure compliance with schedules.
- E. CONTRACTOR shall attend and participate in all project coordination and progress meetings and report on the progress of all Work and compliance with Progress Schedules.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION

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SECTION 01312

PROGRESS MEETINGS

PART 1 - GENERAL

1.1 DESCRIPTION

- A. Progress meetings will be held throughout the Project. CONTRACTOR shall attend each meeting prepared to discuss all items on the agenda. The representatives present for each party shall be authorized to act on their behalf.
- B. Date and Time:
 - 1. Regular Meetings: Bi-weekly on a day and time agreeable to OWNER, ENGINEER, and CONTRACTOR.
 - 2. Other Meetings: As required.
- C. Place: FPUD office.
- D. OWNER will preside at meetings and prepare and distribute meeting minutes to all meeting participants and others as requested.
- E. CONTRACTOR shall provide data required including, at each meeting, a minimum of five (5) copies of each of the following handouts:
 - 1. List of work accomplished since the previous meeting.
 - 2. Schedule of Work (with specific starting and ending dates for each task) planned until the next meeting.
 - 3. "Look-ahead" schedule of Work for major shutdowns, major equipment installations, and other important Milestones.
 - 4. When applicable, list of upcoming, planned time off (with dates) for personnel with significant roles on the Project, and the designated contact person in their absence.

1.2 MINIMUM ATTENDANCE

- A. CONTRACTOR:
 - 1. CONTRACTOR'S project manager.
 - 2. CONTRACTOR'S site superintendent.
 - 3. When needed for the discussion of a particular agenda item, CONTRACTOR shall require representatives of Subcontractors or Suppliers to attend a meeting.
- B. OWNER's representative, as required.
- C. Others, as appropriate.

1.3 AGENDA

- A. Agenda will include, but will not necessarily be limited to, the following:
1. Review and comment on minutes of previous meeting.
 2. Review of progress since the previous meeting.
 3. Planned progress and shutdowns for next period.
 4. Review of overall project schedule, including off-site fabrication and delivery schedules and corrective measures, if required.
 5. Review of status of critical submittals, including Shop Drawings and Applications for Payment.
 6. Review of CONTRACTOR Requests for Information (RFI).
 7. Review of change issues and change orders.
 8. Problems, conflicts and observations.
 9. Quality standards and control.
 10. Coordination between parties.
 11. Safety concerns.
 12. Permits.
 13. Construction photographs.
 14. Record drawings.
 15. Punch list status.
 16. Other business.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION

SECTION 01321

PROGRESS SCHEDULE

PART 1 - GENERAL

1.1 DESCRIPTION

- A. This Section describes the Progress Schedule requirements to be performed by CONTRACTOR.
- B. ENGINEER's acceptance of the Progress Schedule, and comments or opinions concerning the various scheduling documents and reports shall not control CONTRACTOR's independent judgment concerning means, methods, techniques, sequences and procedures of construction that CONTRACTOR employs. CONTRACTOR is solely responsible for meeting the Contract Time(s).
- C. Payment for progress or mobilization will not be paid to CONTRACTOR until the 90-day Bar Chart is accepted. Refer to Paragraph 1.2.A., below.
- D. All Activities of CONTRACTOR shall be scheduled and monitored by use of a Bar Chart Progress Schedule. CONTRACTOR shall provide a Bar Chart Progress Schedule for Work done under this Contract, in accordance with this Section, and the sequence and progress of the Work requirements included under Section 01110 - Summary of Work, Section 01143 - Coordination with OWNER's Operations, and the Construction Sequence Diagram.
- E. In the preparation of the Progress Schedule, CONTRACTOR shall take into consideration submittal requirements and approval time, delivery times for equipment and materials, Subcontractors' work, availability and abilities of workman, weather conditions, any restrictions in operations at the Site, and all other factors that may affect completion of the Work within the Contract Times.
- F. In addition to construction, network Activities shall include the submittal and approval of samples of materials, Shop Drawings and fabrication of special materials. It shall include collection and submittal of all documents and proofs of compliance required by the Contract Documents for final inspection and acceptance of the Work.

1.2 PROGRESS SCHEDULE SUBMITTAL

- A. No later than 28 calendar days after the Notice to Proceed, CONTRACTOR shall submit to the ENGINEER the complete Progress Schedule in Bar Chart format. The first submittal of the Progress Schedule is the preliminary Progress Schedule. ENGINEER and CONTRACTOR shall meet bi-weekly to review the progress of the development of the Progress Schedule. Lack of progress in the development of the Progress Schedule shall be cause for suspension of any progress payment. The Progress Schedule will be reviewed by the ENGINEER within 14 calendar days of receipt or request for adjustment. A meeting, or meetings, may be required with the CONTRACTOR during this period in order to expedite acceptance or adjustment.

Any adjustments required after this period shall be made and resubmitted by CONTRACTOR within 14 calendar days.

- B. If, in the preparation of the Progress Schedule, CONTRACTOR reflects a completion date or milestone date different than that specified in the Contract Documents, this in no way voids the dates set therein. The dates as specified in the Contract Documents govern. Where the Progress Schedule reflects a completion date or milestone date earlier than specified, the ENGINEER may accept such Progress Schedule with CONTRACTOR specifically understanding that no claim for an adjustment in Contract Times or Contract Price shall be brought against the OWNER as the result of CONTRACTOR's failure to complete the Work by the earlier date shown on the Progress Schedule.

1.3 UPDATING THE PROGRESS SCHEDULE

- A. Updates:
 - 1. CONTRACTOR shall update the Bar Chart Schedule on a monthly basis.
 - 2. Revisions and additions to the accepted progress schedule shall be submitted in PDF format and two hard copies each 11-inch by 17-inch.

1.4 TIME IMPACT ANALYSIS FOR CHANGE ORDERS, DELAYS, AND TIME EXTENSIONS

- A. Change Orders, Delays, and Time Extensions:
 - 1. When a Change Order is proposed by the ENGINEER or CONTRACTOR, or delays are experienced, CONTRACTOR shall submit a Time Impact Analysis illustrating the influence of each Change Order or delay on any specified intermediate Milestone date(s) or Contract completion date. Each Time Impact Analysis shall demonstrate how the CONTRACTOR proposes to incorporate the change(s) or delay(s) into the Progress Schedule.
- B. Submittal:
 - 1. Each Time Impact Analysis shall be submitted within 3 calendar days after a delay occurs or a notice of change or proposed Change Order is given to CONTRACTOR. In cases where CONTRACTOR does not submit a Time Impact Analysis for a specific change or delay within the specified period of time, it shall be mutually agreed that no time extension is required.
- C. Evaluation:
 - 1. Final evaluation of each Time Impact Analysis by the ENGINEER will be made within 7 calendar days after receipt, unless subsequent meetings and negotiations are necessary. Adjustments in the Contract Times will be made only by Change Order.

1.5 RECOVERY SCHEDULE

- A. In the event that an updated Progress Schedule indicates that the Project, or a Milestone requirement, falls 14 or more work days behind schedule and there is no excusable delay or change to support a time extension, CONTRACTOR shall prepare and submit a Recovery Schedule for acceptance by the ENGINEER. CONTRACTOR shall revise logic or durations to show the Project on schedule. The Recovery Schedule shall be submitted 7 calendar days after the updated Progress Schedule is submitted.
- B. CONTRACTOR shall provide additional manpower, equipment, or materials or shall work additional shifts, or expedite procurement to complete Activities within the specified Milestones or Contract Times, at no additional cost to the OWNER. Upon acceptance of the Recovery Schedule by the ENGINEER, CONTRACTOR shall incorporate it into the current Progress Schedule.
- C. Lack of Action:
 - 1. CONTRACTOR's refusal, failure, or neglect to take appropriate recovery action or to submit a written Recovery Schedule shall constitute reasonable evidence that CONTRACTOR is not prosecuting the Work, or separable part, with the diligence that will ensure its completion within the applicable Contract Times. Such lack of action shall constitute sufficient basis for the OWNER to exercise remedies available under the Contract Documents.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION

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SECTION 01620

PRODUCT OPTIONS

PART 1 - GENERAL

1.1 DESCRIPTION

- A. Scope:
 - 1. CONTRACTOR's options for selection of products.
 - 2. Requirements for consideration of "or-equal" products.

1.2 PRODUCT OPTIONS

- A. For products specified only by reference standard or description, without reference to Supplier, provide products meeting that standard, by any Supplier or from any source that complies with the Contract Documents.
- B. For products specified by naming one or more products or Suppliers, provide the named products that comply with the Contract Documents, unless an "or-equal" or substitute product is approved by ENGINEER.
- C. For products specified by naming one or more products or Suppliers and the term, "or equal", when CONTRACTOR proposes a product or Supplier as an "or equal", submit to ENGINEER a request for approval of an "or equal" product or Supplier in accordance with Section 1 of the General Provisions.

1.3 "OR EQUAL" PRODUCTS

- A. For proposed products not named in the Contract Documents and considered as an "or equal" as defined in the General Conditions, CONTRACTOR shall request in writing ENGINEER's approval of the "or equal". Request for approval of an "or equal" product shall accompany the Shop Drawing submittal for the proposed product and shall include:
 - 1. CONTRACTOR's request that the proposed product be considered as an "or equal" per the General Conditions, accompanied by CONTRACTOR's certifications as required in the General Conditions.
 - 2. Documentation adequate to show that proposed product does not require extensive revisions to the Contract Documents, that it is consistent with the Contract Documents, and will produce the indicated results and performance, and that it is compatible with other portions of the Work.
 - 3. Detailed comparison of significant qualities of proposed product with those named in the Contract Documents. Significant qualities include attributes such as performance, weight, size, durability, visual effect, and specific features and requirements specified.
 - 4. Evidence that proposed product provides warranty equal to or better than specified.
 - 5. List of similar installations for completed projects with project names and addresses, and names and address of design professionals and owners, if requested.
 - 6. Samples, if requested.
 - 7. Other information requested by ENGINEER.

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION (NOT USED)

END OF SECTION

SECTION 02956

CLOSED CIRCUIT TELEVISION (CCTV) INSPECTION OF SEWER MAINS, MANHOLES AND LATERALS

PART 1 GENERAL

1.1 DESCRIPTION

- A. Section includes requirements to execute internal closed circuit television (CCTV) survey to inspect sewer mains, manholes and laterals.

1.2 SUBMITTALS

- A. Submit the following
 1. Sample of television survey log, DVD/CD-ROM video, and equipment list for approval before commencement of work.

1.3 QUALITY ASSURANCE

- A. Operator performing CCTV inspection: Certified by National Association of Sewer Service Companies (NASSCO) in the following;
 1. PACP for inspection of sewer mains.
 2. MACP for inspection of manholes.
 3. LACP for inspection of laterals.

PART 2 PRODUCTS

2.1 MATERIALS

- A. General.
 1. Provide equipment to perform inspections of sewer mains, manholes and laterals from mainline to property line or cleanout located in streets, street rights-of-way, and off road easements.
 - a. Including but not limited to portable CCTV equipment, vehicles capable of transporting TV equipment and accessing remote easements, and adequate cleaning equipment.
 2. Have DVD and necessary playback equipment readily accessible for review by Engineer.
 3. Certify that backup equipment is available and can be delivered to site within 48 hours.
- B. Software Requirements.
 1. Follow National Association of Sewer Service Companies (NASSCO).
 - a. Sewer Mains: Follow Pipeline Assessment Certification Program (PACP)
 - b. Laterals: Follow Lateral Assessment Certification Program (LACP)
 - c. Manholes: Follow Manhole Assessment Certification Program (MRCP)
 2. Populate access database provided by District.
 3. Video: Recorded in MPEGI/PPEG2 format.
- C. Sewer Main and Lateral CCTV.
 1. Color Video Camera:
 - a. Specifically designed and constructed for this application.

- b. Camera, Television Monitor, and Other Components: Capable of producing minimum 470H -line resolution color video picture.
- c. Able to inspect laterals as small as 4 -inches up to 5 feet from sewer mainline.
- d. Pan and tilt type, capable of turning at right angles to pipe's axis over an entire vertical circle (minimum pan of 270 degrees and rotation of 360 degrees).
- e. Lateral Camera: Self leveling type.
- f. Lighting: Suitable to allow clear picture of entire inner pipe wall extending at least 10 feet in front, including black High Density Polyethylene (HDPE) pipe.
- g. Operative in 100 percent humidity conditions.
- h. Image: Capable of self-righting itself.
- i. Include data view display feature capable of showing following information.
 - 1) Lateral addresses.
 - 2) City and state.
 - 3) Date and time.
 - 4) Project name.
 - 5) Contractor's name.
 - 6) Inside pipe diameter and type.
 - 7) Manhole identification (upstream manhole to downstream manhole).
 - 8) On-going footage counters accurate within 0.2 foot.
 - 9) Operator narration capability: Follow NASSCO standards.
 - 10) Recording of single section of sewer onto 2 DVD/CD-ROMs will not be acceptable.
- j. Clearly label each DVD as approved by Engineer.
- k. Mounting:
 - 1) Launched from within mainline sewer: Mounted on tread tractor that moves through sewers and positions inspection camera launcher opposite lateral line connection.
 - 2) Launched from within cleanout: Able to travel to mainline sewer.
- l. Attachment: Push cable with fiberglass rod core
- m. Able to laser profile inside diameter.

D. Manhole CCTV.

- 1. Color Video Camera:
 - a. Specifically designed and constructed for this application.
 - b. Capable of capturing both video and high resolution stills.
 - c. High-resolution, pan and tilt or rotating head (manually performed or motor operated) with wide viewing angle lens and either automatic or remote focus and iris control.
 - d. Lighting: Suitable for use with digital color inspection cameras and pipe diameters identified in contract.
 - e. Operative in 100 percent humidity conditions.

PART 3 EXECUTION

3.1 GENERAL

- A. Perform work in two phases as listed.
 - 1. Phase I
 - a. Perform internal CCTV inspection of mainline sewer and manholes to be coated prior to initiating work.
 - c. Submit inspection records and survey information to District promptly upon completion of work for evaluation.

2. Phase II

- a. Perform repair, rehabilitation or replacement of defective or aging laterals, mainlines and manholes per contract. Following Standard Specifications and Contract Documents.

3.2 CCTV PRECONSTRUCTION SURVEY

A. CCTV Procedure.

1. Sewer Mainline.

- a. Before repair work, light clean and inspect sewer line from manhole to manhole, preferably upstream to downstream, one section at a time. Light cleaning includes up to 3 passes with hydraulic jet cleaner.
 - 1) If light cleaning is ineffective in cleaning sewer, heavy cleaning method may be approved by Engineer.
 - a) Heavy cleaning uses non -hydraulic jet efforts such as porcupines, cutters, power rodding, clam buckets and other mechanical means.
 - 2) Remove sludge, dirt, sand, grease, root and other material from downstream manhole of sewer section being cleaned.
 - 3) Collect debris and remove from site.
 - a) Transportation and disposal of debris: Follow jurisdiction requirements and Engineers approval.
- b. Maintain sewer main isolation by plugging or bypass pumping while camera is moving and recording.
 - 1) Plugs: Secured to remain in place during inspection.
 - 2) Conduct operations to prevent backups and sewer overflows.
 - 3) Be responsible for cleanup, repair, fines, property damage costs and claims for any sewage backup, bypass spillage or sanitary sewer overflow.
 - a) Follow reporting requirements.

2. Manhole.

- a. Document and perform above ground survey.
 - 1) Record along alignment of interceptor and surface cover.
 - 2) Obtain still photos of exterior of manhole and surrounding area.
- b. Interior Inspection:
 - 1) Start camera at manhole rim in line with largest diameter outgoing pipe.
 - 2) Rotate camera clockwise until 360 degree panorama is complete.
 - a) Provide still photos of defects noted, following MRCP.
 - 3) Lower camera 2 to 3 vertical feet and repeat procedure outlined above.
 - 4) Repeat previous step until bench invert is reached.

B. Camera.

1. Placement.

- a. Manhole:
 - 1) Place at center of manhole and commence video before entering pipe.
 - 2) Start footage counter at manhole wall.
- b. Mainline.
 - 1) Mount on transport platform that will keep it centered along longitudinal axis of sewer mainline and above water.
 - 2) Laterals from mainline.
 - a) Place into lateral and commence video recording before entering lateral.
 - b) Start footage counter at connection.

- 3) Laterals from cleanout.
 - a) Place camera into sweep and commence video recording before entering lateral or before lowering through cleanout stack.
 - b) Start footage counter at sweep.

2. Operation.

- a. Record section of sewer in its entirety with no breaks or interruptions.
- b. Show inside of manhole walls, manhole channel, and pipe connection to wall at both upstream and downstream manhole and lateral connections.
- c. Move through line at speed no greater than 30 feet per minute stopping for minimum 10 seconds to record lateral connections, mainline connections, defects, and features and points of interest.
- d. Maintain technical quality, sharp focus, and distortion free picture.
- e. Pan, tilt, and rotate as necessary to best view and evaluate lateral connections, defects, features, and points of interest.
- f. Use power winches, powered rewinds, tractors, or other devices that do not obstruct camera view or interfere with proper documentation of sewer conditions to move camera through sewer.
 - 1) Whenever non -remote powered and controlled winches are used set up suitable means of communication between manholes.
- g. Use hydraulic jet nozzle if necessary to remove standing water from line.
- h. Eliminate steam in line for duration of inspection.
 - 1) Utilize blower as needed to defog sewer line.
- i. Measurement for location of defects and service laterals:
 - 1) Engineer -approved footage counter or metering device taken at ground level.
 - 2) Measurement meters: Accurate to 0.2 foot over length of section being televised.
 - 3) Use measuring target in front of television as exact measurement reference point.

3. Movement.

- a. Mainline.
 - 1) Stop camera at lateral connections and inspect with pan and tilt camera.
 - a) Active lateral connections where flow is discharging.
 - (1) Identify building address and confirm that laterals are active by obtaining flush, with or without dye, of property owner's commode or by using outside cleanout, if available.
 - b) No flows being discharged from building: Considered as infiltration/inflow.
 - 2) Laterals.
 - a) Move camera through lateral at uniform rate from mainline to property line or cleanout.
 - b) Stop at each suspected defect to allow adequate evaluation.

C. Defects.

1. If roots, sludge, or sediment material impedes inspection withdraw camera and re-clean mainline by hydraulic jet.
 - a. Upon completion of re -cleaning operation resume internal inspection.
 - b. Furnish media confirmation for heavy cleaning to Engineer.
2. If protruding tap impedes inspection trim protruding tap to 1/2 inch.
3. If obstructions are not passable and cannot be removed by sewer cleaning or reaming, withdraw CCTV equipment and perform inspection from opposite end.

- a. Cost involved in extracting camera stuck in sewer line: At no additional cost to the District.
- b. When additional obstructions are encountered after re -deployment of equipment, and no means me available for passing obstructions, remand to Engineer for resolution.

D. Field Documentation.

1. Submit original records, logs, and electronic inspection data to Engineer within 10 working days.
 - a. Provide the following at minimum.
 - 1) Contract Number and Project Name.
 - 2) Basin time
 - 3) Contractor.
 - 4) Operator name.
 - 5) Date and time (begin to end inspections).
 - 6) Weather conditions.
 - 7) Q.A. Reviewer time.
 - 8) DVD number and index.
 - 10) General physical conditions.
 - 11) Footage locations, clock position, and descriptions of defects and estimated leakage rates for visible point sources of infiltration/inflow.
 - b. Mainline. In addition to information listed above, include;
 - 1) Inside pipe diameter and type.
 - 2) Manhole identification (upstream and downstream manhole)
 - 3) Follow PACP.
 - c. Manholes. In addition to information listed above, include;
 - 1) Manhole records and digital photos: Labeled with manhole number identification
 - 2) Follow MACP
 - d. Laterals. In addition to information listed above, include;
 - 1) Address of each lateral including city and state.
 - 2) Owner.
 - 3) Length of lateral segment.
 - 4) Direction of CCTV (from property line or form mainline connection).
 - 5) Lateral size.
 - 6) Lateral material.
2. DVD/CD-ROM.
 - a. Once recorded, DVD/CD ROM becomes property of the District.
 - b. Use observation terminology during audio narration consistent with PACP, MRCP and LACP.
 - 1) Naming convention for lateral connections following WSSC protocol: Referenced to access from mainline (AML) or downstream manhole (AMH). Do not use naming convention for access from cleanout (ACO) or other access point.
 - c. Clearly label each DVD/CD ROM as approved by Engineer.
 - d. Recording of single section of sewer on 2 DVD/CD ROMS: Not acceptable.
 - e. DVDs displaying poor video quality (Includes but not limited to; grease or debris on lens, camera under water, image too dark, washed out, distorted or out of focus, lines improperly cleaned or poor/no audio).
 - 1) Re -televise line and resubmit at no cost to District.

- 2) Rejection by Engineer of original recording for failure to comply with requirements herein will incur charge based on current hourly fee for additional review time.

3.3 POST-CONSTRUCTION SURVEY

A. Follow procedures as specified for pre -construction survey above, except as specified below.

1. Sewer Mains and Laterals.

a. Operation of Camera.

- 1) Stop camera (minimum 10 seconds) at beginning and end of repairs and inspect repaired section.

2. Manhole CCTV.

a. Manhole inspection: Follow MACP standards.

b. Begin with above ground exterior survey documentation.

- 1) Record along alignment of interceptor and surface cover.
- 2) Obtain still photos of exterior of manhole and surrounding area.

c. Interior CCTV inspection.

- 1) Start camera at manhole rim in line with Ingest diameter outgoing pipe. Rotate camera clockwise until 360 degree panorama is complete.
 - a) Provide still photos of any defects noted.
- 2) Lower camera 2 to 3 vertical feet and repeat procedure
- 3) Repeat until bench invert is reached.

3. Associated Pipe Segments CCTV.

a. After completion of manhole CCTV inspection, reset camera for pipe segment inspection.

b. Begin with largest diameter outgoing pipe segment.

c. Center camera on pipe as reasonably possible while keeping it above flow.

d. Adjust focus and lighting to observe most distant point in pipe and bring focus and zoom to nearest point of interest.

e. Capture and record individually special features noted.

f. Record defects noted using standard PACP nomenclature.

g. Record minimum of 60 seconds per pipe segment.

h. After inspecting outgoing pipe segment, rotate camera clockwise to locate next pipe segment and repeat inspection process.

i. Repeat clockwise rotation until all pipe segments in manhole are documented utilizing the same procedure.

B. Field Documentation.

1. Follow procedures specified for preconstruction survey above, except lateral also include but not limited to following items;

a. Confirm address of each lateral.

b. Direction of CCTV.

- 1) From top of cleanout to mainline connection
- 2) From mainline to cleanout.

END OF SECTION

SECTION 02960

TEMPORARY BY-PASS PUMPING SYSTEMS

PART 1 - GENERAL

1.1 DESCRIPTION

- A. Section includes requirements for implementing a temporary pumping system for the purpose of diverting existing sewage flow around work area for duration of the project.

1.2 QUALITY ASSURANCE

- A. Follow national standards and as specified herein.
- B. Perform leakage and pressure tests on discharge piping using clean water, before operation. Notify Engineer 24 hours prior to testing.
- C. Maintain and inspect temporary pumping system every two hours. Responsible operator: on site when pumps are operating.
- D. Keep and maintain spare parts for pumps and piping on site, as required.
- E. Maintain adequate hoisting equipment and accessories on site for each pump.

1.3 REFERENCES

- ASTM F714 - Standard Specification for Polyethylene (PE) Plastic Pipe (DR-PR) Based on Outside Diameter
- ASTM D1248 - Standard Specification for Polyethylene Plastics Extrusion Materials for Wire and Cable
- ASTM D2657 - Standard Practice for Heat Fusion Joining of Polyolefin Pipe and Fittings

1.4 SUBMITTALS

- A. Submit the following per work plans / planning.
 - 1. Detailed plan and description of proposed pumping system. Indicate number, size, material, location and method of installation of suction and discharge piping, size of pipeline or conveyance system to be by-passed, staging area for pumps, site access point, and expected flow.
 - a. Size and location of manhole or access points for suction and discharge hose or piping.
 - b. Sections showing suction and discharge pipe depth, embedment, select fill and special backfill, if buried.
 - c. Temporary pipe supports and anchoring required.
 - d. Thrust and restraint block sizes and locations.
 - e. Sewer plugging method and type of plugs.
 - f. Bypass pump sizes, capacity, number of each size to be on site and power requirements.
 - g. Backup pump, power and piping equipment.
 - h. Calculations of static lift, friction losses, and flow velocity. Pump curves showing pump operating range.
 - i. Design plans and computation for access to bypass pumping locations indicated on drawings.
 - j. Calculations for selection of bypass pumping pipe size.
 - k. Method of noise control for each pump and/or generator.

- l. Method of protecting discharge manholes or structures from erosion and damage.
- m. Schedule for installation and maintenance of bypass pumping lines.
- n. Procedures to monitor upstream mains for backup impacts.
- o. Procedures for setup and breakdown of pumping operations.
- p. Emergency plan detailing procedures to be followed in event of pump failures, sewer overflows, service backups, and sewage spillage.
 - 1) Maintain copy of emergency plan on site for duration of project.

B. Submit the following per quality control.

- 1. Certify bypass system will meet requirements of codes, and regulatory agencies having jurisdiction.

1.5 CONTRACTORS RESPONSIBILITY FOR OVERFLOWS AND SPILLS

A. Schedule and perform work in manner that does not cause or contribute to incidence of overflows, releases or spills of sewage from sanitary sewer system or bypass operation.

1.6 DELIVERY AND STORAGE

A. Transport, deliver, handle, and store pipe, fittings, pumps, ancillary equipment and materials to prevent damage and following manufacturer's recommendations.

- 1. Inspect all material and equipment for proper operation before initiating work.

B. Material found to be defective or damaged due to manufacturer or shipment.

- 1. When Engineer deems repairable: Repair as recommended by manufacturer.
- 2. When Engineer deems not repairable: Replace as directed by Engineer before initiating work.
- 3. Repair or replacement of defective or damaged material and equipment will be at no cost to District.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Discharge and Suction Pipes: Approved by Engineer.

- 1. Discharge piping: Determined according to flow calculations and system operating calculations.
- 2. Suction piping: Determined according to pump size, flow calculations, and manhole depth following manufacturer's specifications and recommendations.

B. Polyethylene Plastic Pipe:

- 1. High density solid wall and following ASTM F714 Polyethylene (PE) Plastic Pipe (SDR -DR) based on Outside Diameter, ASTM D1248.
- 2. Homogenous throughout, free of visible cracks, discoloration, pitting, varying wall thickness, holes, foreign material, blisters, or other deleterious faults.

C. High -Density Polyethylene (HDPE).

- 1. Homogenous throughout, free of visible cracks, discoloration, pitting, varying wall thickness, holes, foreign material, blisters, or other deleterious faults.
 - a. Defective areas of pipe: Cutout and joint fused as stated herein.
- 2. Assembled and joined at site using couplings, flanges or butt-fusion method to provide leak proof joint. Follow manufacturer's instructions and ASTM D2657.
 - a. Threaded or solvent joints and connections are not permitted.
- 3. Fusing: By personnel certified as fusion technicians by manufacturer of HDPE pipe and/or fusing equipment.

4. Butt-fused joint: True alignment and uniform roll-back beads resulting from use of proper temperature and pressure.
 - a. Allow adequate cooling time before removal of pressure.
 - b. Watertight and have tensile strength equal to that of pipe.
 - c. Acceptance by Engineer before insertion.
 5. Use in streams, storm water culverts and environmentally sensitive areas.
- D. Flexible Hoses and Associated Couplings and Connectors.
1. Abrasion resistant.
 2. Suitable for intended service.
 3. Rated for external and internal loads anticipated, including test pressure.
 - a. External loading design: Incorporate anticipated traffic loadings, including traffic impact loading.
 4. When subject to traffic loading, compose system, such as traffic ramps or covers.
 - a. Install system and maintain H-20 loading requirements while in use or as directed by the Engineer.
- E. Valves and Fittings: Determined according to flow calculations, pump sizes previously determined, and system operating pressures.
- F. Plugs: Selected and installed according to size of line to be plugged, pipe and manhole configurations, and based on specific site.
1. Additional plugs: Available in the event a plug fails. Plugs will be inspected before use for defects which may lead to failure.
- G. Aluminum "irrigation type" piping or glued PVC piping will not be permitted.
- H. When approved by Engineer, discharge hose will be allowed in short sections.

2.2 EQUIPMENT

- A. Pumps.
1. Fully automatic self -priming units that do not require the use of foot -valves or vacuum pumps in priming system.
 2. Electric or diesel powered.
 3. Constructed to allow dry running for long periods of time to accommodate cyclical nature of effluent flows.
 4. Provide.
 - a. Necessary stop/start controls for each pump.
 - b. One standby pump of each size maintained on site.
 - 1) On-line, isolated from primary system by a valve.
 - c. Quiet flow pumps at request of Engineer.

2.3 DESIGN REQUIREMENTS

- A. Bypass pumping systems:
1. Sufficient capacity to pump peak flow of 0.70 MGD.
 - a. Peak flows greater than 0.70 MGD as approved by Engineer.
 - b. District will provide flow data for bypass system.
 2. Operate 24 hours per day.
- B. Provide pipeline plugs and pumps of adequate size to handle peak flow, and temporary discharge piping to ensure total flow of main can be safely diverted around section to be repaired.

PART 3 - EXECUTION

3.1 PUBLIC NOTIFICATION

- A. District shall be notified of planned system shutdown requirements 7 days prior to planned shutdown.
- B. District will notify customers, as needed.

3.2 PREPARATION

- A. Determining location of bypass pipelines.
 - 1. Minimal disturbance to existing utilities.
 - a. Field locate existing utilities in proposed bypass area.
 - 2. Obtain approvals for placement within public or private property.
 - 3. Obtain Engineer's approval of location.
 - 4. Costs associated with relocation of utilities and obtaining approvals shall be at no cost to the District.

3.3 INSTALLATION AND REMOVAL

- A. Provisions and requirements must be reviewed by Engineer before starting construction.
- B. Remove manhole sections or make connections to existing sewer and construct temporary bypass pumping structures at access location indicated on Drawings and as required to provide adequate suction conduit.
- C. Plugging or blocking of sewage flows shall incorporate a primary and secondary plugging device. When plugging or blocking is no longer needed for performance and acceptance of work, remove in a manner that permits the sewage flow to slowly return to normal without surge, to prevent surcharging or causing other major disturbances downstream.
- D. When working inside manhole or force main, exercise caution. Follow OSHA, Local, State and Federal requirements. Take required measures to protect workforce against sewer gases and/or combustible or oxygen -deficient atmosphere.
- E. Installation of Bypass Pipelines:
 - 1. Pipeline may be placed along shoulder of roads.
 - a. Do not place in streets or sidewalks.
 - 2. When bypass pipeline crosses local streets and private driveways, place in roadway ramps.
 - a. When roadway ramps cannot be used, place bypass in trenches and cover with temporary pavement as approved by Engineer.
- F. During bypass pumping operation, protect sewer lines from damage inflicted by equipment.
- G. Upon completion of bypass pumping operations, and after the receipt of written permission from Engineer, remove piping, restore property to pre -construction condition and restore pavement.

END OF SECTION

SECTION 03955

SEWER MAINS AND LATERAL REHABILITATION BY LINING

PART 1 GENERAL

1.1 DESCRIPTION

Section includes requirements for rehabilitation of sewer mains and laterals by Cured in Place Pipe (CIPP) lining and installation of a resin-impregnated flexile tube.

1.2 DEFINITIONS

- A. Mainline: Sewer main.
- B. Lateral: Service pipe from property line cleanout to mainline.
- C. Internal Spot Repair: Installation of Mechanical Seal liner into existing pipe.
- D. Lateral-Mainline Interface: Lateral connection to mainline.
- E. Lateral-Mainline Interface Seal: Watertight seal between lateral and mainline and up lateral 18-inches minimum using T-type lateral lining system or approved equal.
- F. Re-instate Lateral-Mainline Interface: Cutting open or trimming opening in mainline liner to allow flow from lateral to enter main.

1.3 REFERENCES

- A. Specification Section 02956 – CCTV Inspection of Sewer Mains, Manholes and Laterals.
- B. Specification Section 02960 – Temporary By-Pass Pumping Systems
- C. ASTM F1216 - Standard Practice for Rehabilitation of Existing Pipelines and Conduits by the Inversion and Curing of a Resin-Impregnated Tube
- D. ASTM F1743 - Standard Practice for Rehabilitation of Existing Pipelines and Conduits by Pulled-in-Place Installation of Cured-in-Place Thermosetting Resin Pipe (CIPP)
- E. ASTM F1216 – Standard Practice for Rehabilitation of Existing Pipelines and Conduits by the Inversion and Curing of a Resin-Impregnated Tube
- F. ASTM F1743 - Standard Practice for Rehabilitation of Existing Pipelines and Conduits by Pulled-in-Place Installation of Cured-in-Place Thermosetting Resin Pipe.
- G. ASTM F2019 - Standard Practice for Rehabilitation of Existing Pipelines and Conduits by the Pulled in Place Installation of Glass Reinforced Plastic (GRP) Cured-in-Place Thermosetting Resin Pipe (CIPP)
- H. ASTM F2561 - Standard Practice for Rehabilitation of a Sewer Service Lateral and Its Connection to the Main Using a One Piece Main and Lateral Cured-in-Place Liner (CIPP)

1.4 QUALITY ASSURANCE

- A. Follow national standards and as specified herein.

- B. Personnel Involved in Installation of Pipe Liner: Certified by liner manufacturer with successful completion of training in handling, insertion, trimming, reinstatement of laterals and finishing pipe liner.
- C. District Engineer:
 - 1. May inspect and test liner or its materials at factory, before delivery to site or while in storage.
 - 2. May inspect factory materials, wet-out procedure, and loading.
- D. Internally inspect host pipe prior to lining and post-lining.
- E. Commercially Proven Mainline and Lateral Products:
 - 1. Minimum 500,000 linear feet mainline and 3,500 linear feet laterals successfully installed and documented in the United States and Internationally.
 - 2. Translate International installations into English to District's approval.
- F. Commercially Proven Lateral-Mainline Interface Product:
 - 1. Minimum 1,000 lateral-mainline interface services successfully installed and documented in the United States and Internationally.
 - 2. Translate International installations into English to District's approval.

1.5 SUBMITTALS

- A. Submit the following
 - 1. Working drawings showing design calculations, soil impacts, live load, dead load, ground water impacts, materials selected, and thickness of liner.
 - 2. Catalog data showing manufacturer's clarifications and updates, ASTM references, material composition, specifications, physical properties and chemical resistance of liner.
 - 3. Manufacturer's recommended procedures for handling, storing, repairing, and installing materials selected.
 - 4. Method of construction.
 - a. Access manholes and site locations.
 - b. Work dimensions.
 - c. Existing utilities.
 - d. Size of working area.
 - e. Impacted portions of existing sewer.
 - f. Site access points.
 - g. Bypass pumping plan: Follow Section 02960.
 - 5. Emergency plan detailing procedures followed in event of health and safety emergency, pump failures, sewer overflows, service backups, and sewage spillage. Maintain copy on site for duration of project.
 - a. Address dangers associated with sewer rehabilitation work (i.e. working with large boiler trucks).
 - b. Identify Health and Safety officer (i.e. crew chief)
 - c. Designated Health and Safety officer:
 - 1) Responsible for providing health and safety oversight of personnel participating on project team.
 - 2) Perform and document routine work area inspections, conduct safety meetings, and provide safety orientations for team members.
 - 3) Have in easily accessible place following contact information;

- a) Non-emergency number.
 - b) Contractor's health and safety representative name and number.
 - c) Occupational health clinic number(s).
 - d. Submit for review;
 - 1) List of critical rehabilitation equipment, including boiler truck equipment, to be inspected on daily basis.
 - 2) Recently completed (previous month) monthly maintenance log.
 - 3) Annual third-party certified inspection for boiler truck(s) to be used on project.
 - 4) Certification of training for boiler truck operator.
 - 6. Method of reinstatement and sealing of lateral-mainline interface including, but not limited to internal inspection equipment, and equipment used for reinstatement and sealing of lateral-mainline interface.
 - 7. Method of proposed point repair with details.
 - a. Termination or transition details between cured in place point repair and existing sewer.
 - 8. Infrared spectrograph chemical fingerprint and Certificates of Analysis for each lot of resins:
 - a. Lot number.
 - b. Product name.
 - c. Manufacturer.
 - d. Brookfield Viscosity.
 - e. Thix Index.
 - f. Gel time at cure temperature.
 - g. Peak temperature for failure.
 - h. Percent of non-volatile solids.
 - i. Specific Gravity.
 - j. Catalyzed Stability time at optimum temperature.
 - k. Catalyst to resin ratio.
 - l. Analysis signature.
 - m. Date tested.
 - n. Batch ticket for each resin-catalyst-colorant batch made up and impregnated into felt liner material.
 - 9. Stock sheets, order forms, delivery forms, invoices, and Hazardous Material forms for material used.
 - 10. Shipping manifest with;
 - a. Date shipped.
 - b. Origination and delivery locations.
 - c. Shipping method and carrier.
 - d. Shipping order number.
 - e. Purchase order number.
 - f. Shipped item.
 - g. Stock number.
 - h. Lot number.
 - i. Manufacturer.
 - j. Any shipping, storage, or safety requirements.
 - k. Received by, and date.
 - l. Signature of receiver.
- B. Submit the following for quality control as specified herein. Mark submittals with mainline pipe identification number, work order number, Contract number, Contractor's name, operator's name, and date of readings.

1. Certified statement from manufacturer approved installer of their system.
 - a. Include certificates of training for each crewmember involved in installation process.
2. Documentation for Products and Installers: Engineer's approval required before installation of liner.
3. ASTM certified lab test results for field installations in United States of same resin system and tube materials as proposed for actual installation.
 - a. Test results must verify (CIPP) physical properties specified herein have been achieved in previous field applications.
 - b. Third party is defined as ASTM or equivalent accredited materials testing firm with no financial or directorial link to manufacturer or Contractor.
4. Television inspection reports, color videos, CD-ROMs, and electronic CIMS 2000 downloads made before and following mainline CIPP, and original copies of digitally recorded inspections furnished to District Engineer within 10 days.
5. Curing logs: Include liner manufacturer recommended curing citations for each submittal. Store electronically on data logger. Submit printed copy with Post CCTV.
 - a. Heat cured liners.
 - 1) Record temperature (degrees Fahrenheit) and pressure (psi) readings per unit of time collected during liner installation and curing.
 - b. UV cured liners.
 - 2) Record the curing speed (feet per minute), light source (number of lamps, intensity and wattage), inner air pressure (psi), and curing temperatures (degrees Fahrenheit) per unit time over length of liner.
6. Weiring Logs: Show beginning and final rehab weir readings.
7. Materials delivery and storage: Record date, time and temperature readings at 15 minute intervals, minimum. Include sewer pipe material's stock identification number.
8. Tabulation of time versus temperature by liner manufacturer with lengths of time exposed portions of liner will endure without self-initiated cure or other deterioration.
 - a. Tabulate at 5 degrees F. increments, ranging from 70 degrees F. to 100 degrees F.
 - b. Include analysis of progressive effects of such self-initiated cure on insertion and cured properties of liner.
9. Sampling Plan:
 - a. Test Coupon samples will be obtained from each sewer mainline repair section (CIPP). One section is defined as between two manholes.
 - b. Sample testing will be done by Third Party testing facility Ram Tech Labs, or approved equal,
 - c. Test results will be reported within 60 days of install.
10. Provide to District Engineer for review within 30 days prior to beginning work;
 - a. Description of methods for avoiding liner stoppage due to conflict and friction with such points as manhole entrance and bend into pipe entrance.
 - b. Plans for dealing with liner stopped by snagging within pipe.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Protect, store, and handle materials during transportation and delivery, while stored on-site, and during installation following manufacturer's recommendations.
- B. Continuously monitor liner materials during transport and storage with temperature recorder and data storage or strip printer.
 1. Furnish District Engineer with recorder readings before installation.

2. Material exposed to temperatures outside of manufacturer's limits: Rejected.
- C. Material found to be defective or damaged due to manufacture or shipment:
1. When District Engineer deems repairable: Repair following manufacturer's recommendations.
 2. When District Engineer deems not repairable: Rejected, removed from Contract site, and replaced under District Engineer's direction.
 3. Repair or replacement of defective or damaged material will be at no additional cost to District.

PART 2 PRODUCTS

2.1 MATERIALS

- A. Mainline (CIPP): Follow ASTM F1216, ASTM F1743 and ASTM F2019 as appropriate to insertion method, liner tube material and resin material proposed for fully deteriorated pipe condition.
1. Wet-out liner material in controlled factory environment.
 2. Resin-Catalyst-Colorant-Additive Mixture:
 - a. Tested to certify liner material follows design standards before wet out.
 - b. Quantity of resin used for tube impregnation: Sufficient to fill volume of air voids in felt tube with additional 10 to 15 percent allowances for polymerization shrinkage and loss of resin through cracks and irregularities in original pipe wall.
 - 1) Heat cured liners, required amount of resin mixture: Vacuumed into felt liner material.
 - a) Point of vacuum: No further than 25 feet from point of initial resin introduction to ensure thorough resin saturation throughout length of felt tube.
 - b) Vacuum point: No further than 75 feet from leading edge of resin after vacuum in tube is established.
 - 2) UV cured liners, fiberglass liner: Saturated with appropriate resin using resin bath to minimize air entrapment and delivered to site ready for installation.
 - a) Vacuum methods: As recommended by the manufacturer.
 - 3) Leading edge of resin slug:
 - a) As near to perpendicular as possible.
 - b) Wet-out liner is fed onto conveyor system and through roller gap set following design (minimum 2.3 x lining thickness in mm).
 - (1) Ensure uniform distribution of resin throughout pre cured liner.
 - (2) Pack pre-cured liner on ice within automatically monitored refrigerated truck with ice bags between pre-cured liner folds.
 - c) Alternate resin impregnation method: Proven, inspected, and with District Engineer's approval.
 - c. Colorant: Dark yellow.
 - 1) Add to catalyst before mixing catalyst with resin.
 - 2) Pigmentation: Produces color that is clearly distinguishable from dry felt.
 - 3) Wall color of interior pipe surface of CIPP after installation: Light reflective color to allow clear detailed examination with closed circuit television inspection equipment.
 3. Additives for resin enhancement, viscosity control, safety, chemical resistance, physical resistance, or extending shelf life are permitted with District Engineer's approval.

4. Liner Tube.
 - a. Felt Tubes.
 - 1) Seams as described herein.
 - a) Liner to run continuously from manhole to manhole.
 - b) Does not use overlapping section of liner felt tube or longitudinal seams that cause lumps in final product.
 - 2) Impermeable, flexible membrane outside layer that will contain resin and monitor resin saturation at factory during resin impregnation procedure.
 - b. Fiberglass Tubes.
 - 1) Consist of flexible fiberglass tubes made spirally or by overlapping layers.
 - 2) Include exterior and interior film that contains resin in tube, are impervious to airborne styrene and serves as ultraviolet blocking material.
 5. Cured Liner: 50-year life span.
 - a. Chemically resistant to internal exposure to sewage containing small quantities of hydrogen sulfide, carbon dioxide, methane, mercaptans, kerosene, moisture, and diluted sulfuric acid.
 - b. Chemically and physically resistant to external exposure of soil bacteria, moisture, roots, and chemical attack, that may be due to material in surrounding ground.
 6. Approved Manufacturers:
 - a. Inliner Technologies, LLC.
 - b. Insituform Technologies Inc.
 - c. National Liner.
 - d. Novapipe.
 - e. Premier Pipe.
 - f. Reline America Blue-Tek Liner.
 - g. Saertex MultiCom.
 - h. LightStream LP, StreamLiner UV Liner
 - i. Or equal.
- B. Lateral CIPP Renewal Processes:
1. ASTM F2561-06 or ASTM F1216 following mainline CIPP wet-out requirements.
- C. Lateral-Mainline Interface Seal:
1. ASTM F2561-06 following mainline CIPP wet-out requirements.
 - a. T Liner.
 - 1) Approved manufacturers.
 - a) LMK Enterprises Inc.
 - b) Or equal.
 2. Resin injection process following manufacturer's recommendations.
 - a. Injected resin without the use of grout.
 - 1) Approved manufacturers:
 - a) Janssen Process Company.
 - b) ProKasro.
 - c) Or Equal.
 3. Follow Section 02959 for lateral-mainline interface sealing by chemical grout.
- D. Internal Spot Repair: Follow ASTM F1216 and as noted herein.
1. Tube fabricated from resin impregnated fiberglass/carbon patch sheet to a size which, when installed will closely approximate the internal circumference of the conduit specified.

- a. Make allowance for changes in circumference of the conduit by free overlap during inflation of the tube.
2. Minimum Length: Determined to effectively span the designated defective section, plus one foot at either end.
 - a. Verify lengths in field before pulling tube into pipe.
3. Thickness of the mechanical seal liner within pipe: Designed to conform to actual field conditions.
4. Approved Manufacturers:
 - a. Easy-Liner
 - b. LMK Enterprises
 - c. EPROS Drain Packer Repair System
 - d. Pipe Patch by Source 1 Environmental, LLC
 - e. Or equal.

E. Cleanout Installation. – NOT USED

F. Miscellaneous Materials.

1. Finishing material for transitioning, filling, and sealing liners entering manholes.
 - a. Chemically inert, non shrinking, and able to cure in presence of water.
 - b. Material: Quickset H2S resistant, epoxy resin or mortar.
 - c. Design mix: Minimum 500-psi compressive strength in 28 days.
 - 1) Additives may be added to improve flow properties when minimum compressive strength requirements are met, with District Engineer's approval.
 - d. Pre-lining lateral installations: Use PVC Tees with full circle seal couplers on either side of PVC Tee.
 - 1) PVC Tee: Stainless steel sleeve inside lateral tap to protect tap during reinstatement.
 - e. Pre-lining external point repairs: Use PVC pipe with non-shear seal couplers on either side of PVC pipe.
 - f. Non-shear couplings: Capable of maintaining mainline alignment during mainline lining.
 - g. Epoxy resin used to seal liner to manhole drop line: Compatible with liner.

G. CIPP Liner Calculations.

1. Layers of cured CIPP: Uniformly bonded.
 - a. Structural Properties: Use deteriorated design condition, following design equations in appendix of ASTM F1216. If equation is less than minimum liner thickness noted on table below use minimum as noted.
 - 1) Design Assumptions.
 - a) Water table: At manhole rim
 - b) Buckling resistance: AWWA M45, Appendix A
 - c) Design Safety Factor: 2.0
 - d) Ovality: 2 percent
 - e) Live Load: H20 Highway

Felt Liner and Ambient Temperature, Steam or Hot Water Cured CIPP	
Host Pipe Diameter	Minimum Liner Thickness *
8" diameter	6mm
10" diameter	6mm
12" diameter	8mm
15" diameter	10mm
18" diameter	12mm

Fiberglass Felt and Ultraviolet Cured CIPP	
Host Pipe Diameter	Minimum Liner Thickness *
8" diameter	4mm
10" diameter	4mm
12" diameter	6mm
15" diameter	6mm
18" diameter	8mm

* (± 0.5 mm) tolerance will be allowed

2. Resin properties (Greenbook Table 1.4.2)

Epoxy Resin Properties	ASTM Test Method	Initial Values Psi (MPa)
Flexural Strength	D790	5,000 (34.5)
Flexural Modulus	D790	300,000 (2050)
Tensile Strength	D638	4,000 (27.5)
Tensile Modulus	D638	250,000 (1710)

Epoxy-Vinyl-Ester Resin Prop.	ASTM Test Method	Initial Values Psi (MPa)
Flexural Strength	D790	4,5000 (31)
Flexural Modulus	D790	250,000 (1710)
Tensile Strength	D638	3,000 (20.5)
Tensile Modulus	D638	250,000 (1710)

2.2 SOURCE QUALITY CONTROL

- A. Mainline Cured-In-Place Pipe (CIPP)
 1. Document installation procedure following ASTM F1216, ASTM F1743 or ASTM F2019, as appropriate to insertion method, liner tube material, resin material, curing method and installation procedures, as specified herein, for District Engineer's approval.
 2. Submit 10 percent of lining coupon samples to independent third party laboratory, as approved by District Engineer, for testing with verification following ASTM F1216, Section 8 Inspection Practices or ASTM F2019, Table 1, as appropriate to liner tube and resin materials. Testing will include;
 - a. Short Term Flexural (Bend) Properties.
 - b. Tensile Properties.
 - c. CIPP Wall Thickness.
 3. Submit results from independent third party laboratory for District Engineer's

- approval.
 - a. Correct rejected deficiencies at no additional cost to the District.
 - 4. Perform Post-inspection CCTV recording following Section 02956 for District Engineer's approval.
 - a. The acceptability of lateral liner defects will be at District Engineers discretion. Defect locations will factor into District Engineer's decision on acceptability.
 - b. Liner Approved:
 - 1) Free of wrinkles.
 - 2) Continuous liner over length of reconstructed pipe.
 - 3) No visible leaks.
 - 4) Free of obstructions.
 - c. Rejected: Correct deficiencies at no additional cost to the District.
- B. Lateral Renewal Process.
1. Lateral Renewals by CIPP:
 - a. Document installation procedure following manufacturer's recommendation, ASTM standards F1216 or F2561-06 and as specified herein for District Engineer's approval.
 - b. Collect Mainline and Lateral Cured In-Place Lining (MLCIPL) samples for 10 percent of installed laterals and submit to independent third party laboratory for testing with verification following ASTM F1216, Section 8 Recommended Inspection Practices.
 - 1) Short –Term Flexural Properties.
 - 2) MLCIPL Wall Thickness.
 2. Rehabilitation of lateral-mainline interface by resin injection seal.
 - a. Record and document installer's certificate of training number and manufacturer's batch identification number.
 - b. Mark identification number on corresponding resin sample (5 to 6 ounce cubes) poured at start of each new batch at beginning of each day.
 - c. Submit 10 percent of prepared samples to independent third party laboratory for testing under District Engineer's direction.
 - 1) If half of samples fail, additional 10 percent may be required to be tested.
 - d. Record resin injection process with CCTV for District Engineer's approval. Follow Section 02956.
 - e. Cure: Follow manufacturer's recommendation.
 - f. Clearly see resin ring at lateral-mainline interface.
 3. Submit results from independent third party laboratory for District Engineer's approval.
 4. Perform Post-inspection CCTV recording following Section 02956 for District Engineer's approval.
 - a. Acceptability of lateral liner defects: District Engineer's discretion. Defect locations will factor into District Engineer's decision on acceptability.
 - b. Approved:
 - 1) Free of wrinkles.
 - 2) Continuous liner over length of reconstructed pipe.
 - 3) No visible leaks.
 - 4) Free of obstructions.
 - c. Rejected: Correct deficiencies at no additional cost to the District.

- C. Lateral-Mainline Interface.
 - 1. Rehabilitation of lateral-mainline interface by lining specified herein.
 - a. Follow Mainline CIPP for sample submissions, reviews, results, and corrections.
 - 2. Rehabilitation of lateral-mainline interface by resin injection seal.
 - a. Record and document installer's certificate of training number and manufacturer's batch identification number.
 - b. Mark identification number on corresponding resin sample (5 to 6 ounce cubes) poured at start of each new batch at beginning of each day.
 - c. Submit 10 percent of prepared samples to independent third party laboratory for testing under District Engineer's direction.
 - 1) If half of samples fail, additional 10 percent may be required to be tested.
 - d. Record resin injection process with CCTV for District Engineer's approval. Follow Section 02956.
 - e. Cure: Follow manufacturer's recommendations.
 - f. Clearly see resin ring at lateral-mainline interface.
 - 3. Follow Mainline CIPP for review and correction process.

PART 3 EXECUTION

3.1 PUBLIC NOTIFICATION

Shall be coordinated with the schedule of work. The Contractor will provide 2 weeks' notice, prior to work, and the District will notify the public, as needed.

3.2 TESTING

- A. Follow Section 02956, and as directed by District Engineer.
- B. Post Installation Test:
 - 1. Ensure materials installed follow specifications and tested according to the sample plan.
 - 2. Test coupons for each section shall be submitted to the third party test facility.
 - 3. Test results shall be provided to the District Engineer within 60 days of installation.

3.3 MAINLINE PREPARATION

- A. Access: Through existing manholes.
- B. CCTV Internal Inspection.
 - 1. Perform after cleaning sewer: Follow Section 02956 and specified herein.
 - a. Pre-lining recordings: Indicate mainline is ready for lining.
 - b. District Engineer approval of pre-lining recordings: Required prior to liner installation.
 - 2. Pre-Lining internal intruding tap and offset joint removal.
 - a. Remove, by internal process, intruding taps and offset joints that reduce internal diameter of liner by 10 percent or more.
 - b. Perform Pre-Lining external point repair if internal removal efforts fail to remove an obstruction.
 - 3. Pre-Lining Mandrel.
 - a. Insert and pull mandrel through mainline to be lined following Section 15062 to

- demonstrate that mainline can accept liner.
- b. Repair areas where mandrel cannot pass before lining is performed.
- 4. Pre-Lining Installation of External Point Repairs and Lateral Renewals following Section 15062 and specified herein.
 - a. Excavate and repair defects in host pipe, which could include intruding laterals and offset joints that cannot be repaired by internal means.
 - 1) PVC pipe external point repairs: Sized to match mainline interior diameter with equivalent exterior diameter for seal clamp to fit.
 - b. Remove sags and flow constrictions that reduce cross-sectional area of mainline more than 10 percent.
 - c. Remove trapped debris that jetting cannot remove.
 - d. Clear mainline of dropped joints, crushed or collapsed pipe, and other obstructions that interfere with installation, causes damage to inverted tube, or reduces capacity of sewer.
 - e. Perform lateral renewals that involve a new tap.
 - 1) PVC Tee Connection: Sized to match mainline and lateral interior diameter with equivalent exterior diameter for seal clamp to fit.
- C. Infiltration Leakage Measurement and Control.
 - 1. Immediately before lining mainline and after by-pass has been established, measure infiltration in isolated mainline using a weir.
 - 2. Stabilize flow through weir for 10 minutes before taking measurement.
 - 3. Repeat weir measurement immediately after lining while bypass is still in place.
 - 4. Report pre-lining and post lining measurements to District Engineer upon completion of lining operation.
 - 5. Where needed, perform pre-lining leakage control by chemical grout method to eliminate cold spots.

3.4 MAINLINE LINER INSTALLATION.

- A. Set up bypass pumping, if necessary, or turn off water to building with District Engineer's approval.
 - 1. Water service shutdown will be reviewed by District Engineer on case by case basis.
- B. Method of Lining.
 - 1. Invert tube by inversion: Follow ASTM F1216
 - a. Erect scaffold or elevated platform at upstream or downstream access point.
 - b. Invert pre-cured tube using inversion elbow at bottom of manhole or inversion ring above ground with water pressure.
 - 1) Ensure tube is;
 - a) Fully extended to termination point and expanded to inside pipe diameter with no annular space between liner and host pipe.
 - b) Dimpled to show locations of service laterals needing restoration.
 - 2. Pull-In Place: Follow ASTM 1743, F2019.
 - a. Install slip sheet on bottom half of pipe prior to liner insertion. Pull liner into place with constant tension winch capable of recording strain used during insertion.
 - b. Use end plugs to cap each end of liner. Both plugs and liner restrained during pressurization of line.
 - c. Measure laterals for reinstatement.
 - 3. Use hydrophilic water stop around exterior of liner material at liner termination in each manhole to prevent passage of groundwater infiltration past liner termination,

- regardless of insertion methodology used.
4. Other methods of installation of CIPP lining or curing are acceptable; provided manufacturer and installer demonstrate they meet Quality Assurance requirements specified herein and obtain District Engineer's approval following Submittal Procedures.
- C. Install and cure resin impregnated tube into liner: Follow manufacturer's recommendations and specified herein.
1. Protect tube and lining material from damage during installation.
 2. Insert tube without twisting, cutting, tearing, separating, kinking, gouging, overstressing, resin loss, or double-ups.
 3. District Engineer may request installed tube be retrieved for inspection.
 4. If tube is damaged during removal, repair tube to District Engineer's approval or replace damaged tube with new tube at no cost to the District.
- D. Loss or discharge of resin, other lining materials, or by-products downstream is not permitted.
1. Stop, collect, and remove at next downstream manhole.
 2. Transportation and disposal of debris: Follow jurisdiction requirements and as approved by District Engineer.
- E. Notify District Engineer of any construction delay, problems, or contract deviations taking place during insertion before curing operations.
1. Such delays or problems may require sampling and testing of portions of cured liner by independent laboratory at District Engineer's direction at no additional cost to the District.
 2. Sample test failures or lack of immediate notification of delay may result in rejection of that portion of work.
 3. District Engineer has option to require removal of liner tube and reinstallation.
 4. If tube is damaged during removal, repair tube to District Engineer's approval or replace damaged tube with new tube at no cost to the District.
- F. Cure.
1. Liners cured with hot water or steam: Follow ASTM F1216 or ASTM F1743 as specified.
 - a. Recirculation Equipment: Capable of uniformly raising temperature of re-circulated water, and maintaining recommended cure temperature for duration to produce cured resin.
 - b. Water/Steam Temperature in Tube during Cure Period: Follow manufacturer's guidelines and specified herein.
 - 1) Follow minimum and maximum standards for curing CIPP including temperature requirements determined by resin/catalyst system employed.
 - 2) Bring temperature up slowly through stages until exothermic reaction is achieved and then maintain.
 - a) Evidence of exothermic reaction: When inspection of exposed portions of CIPP appear hard and sound and sensor indicates temperature has reached magnitude to realize exothermic set following resin manufacturer's curing tables.
 2. Fiberglass Liners cured with UV: Follow ASTM F2019.
 - a. Cure with UV light sources at constant inner pressure sufficient to maintain liner tight against existing wall of pipe.

- b. Record time, rate of travel of ultraviolet light assembly, light sources and internal pressures as specified by liner manufacturer.
 - c. Submit segment curing data to District Engineer along with manufacturer's curing standards.
- G. Process Monitoring Sensors.
 - 1. Use to monitor and maintain curing temperature and internal pressure throughout length of liner following manufacturer's recommendations.
 - 2. Heat Source: Fitted with suitable monitors to gauge temperature of incoming and outgoing heat exchanger circulating water.
 - 3. Placement: Between tube and host pipe in downstream manhole at or near bottom.
 - a. Extra temperature gauges: Inside tube at invert level of each end.
 - 4. Electronically record continuous or specified pressure and temperature reading on printout.
 - a. Start time.
 - b. Gradual build up to curing period with maximum temperature and pressure.
 - c. Time of gradual dropping of curing temperature.
 - d. Cool down duration along with relaxing temperature and pressure.
 - e. Start time of gradual release of curing pressure.
 - f. Ending time.
 - 5. If electronic recording fails, record temperature and pressure readings on log every 10 minutes starting before pressure is added to liner and ending 20 minutes after pressure is relieved.
 - 6. Provide digital thermometer or other means of accurately and quickly checking temperature of exposed portions of liner.
- H. Cooling and Relaxation of Liners:
 - 1. Cool finished CIPP to temperature within 10 degrees of ambient temperature before relieving static head in inversion standpipe.
 - 2. Cool-down may be accomplished by introduction of cool water into standpipe to replace water/steam being drained or vented from downstream end.
 - 3. Caution is advised in release of static head so vacuum will not be developed with potential to damage newly installed liner.
 - 4. After liner has cooled and relaxed, except for manhole indicated as line-through, cut cured liner flush with inside wall of manholes.
 - 5. Fill voids between manhole channel, bench, or wall and liner with quick setting, H₂S resistant, epoxy mortar to form watertight seal.
 - 6. Trowel grout to form smooth transition between manhole base or channel and liner to ensure sewage flow with no collection points for solids.
- I. Finish liner.
 - 1. Ensure liner is continuous over length of reconstructed pipe and follows material requirements specified herein.
 - 2. Repair leaks at interface of manhole and liner.
- J. Return mainlines to service with approval of District Engineer.

3.5 MAINLINE DROP CONNECTIONS AT MANHOLES

- A. Line through drop and open up extended liner into manhole enough to clamp inside drop fittings, using mold to maintain pipe outside form and diameter.

3.6 RE-INSTATEMENT OF LATERAL-MAINLINE INTERFACE

- A. Identify and locate lateral-mainline interface.
- B. Re-instate active services and services to vacant lots after pipe liner has cured.
 - 1. Perform from interior of pipeline without excavation using internal inspection camera with robotic cutter head.
 - 2. Re-instatement cut through liner: Neat, smooth, and to diameter of existing lateral-mainline interface in order to prevent blockages.
 - 3. Do not damage existing laterals.
 - 4. Coupons and cuttings.
 - a. Collect at downstream manhole and remove.
 - b. Mark whole captured coupons with component number and make available for testing and reporting liner thickness.
- C. Abandoned Laterals.
 - 1. Open at District Engineer's directions.
 - 2. If abandoned lateral is opened without District Engineer's approval, perform an internal spot repair to close lateral at no cost to the District.
- D. Lateral-Mainline Interface Reinstatement Problems.
 - 1. Respond within 2 hours of District Engineer's notification of potential backup.
 - 2. Cost incurred by the District due to failure to respond within time frame specified may be deducted from monies owed Contractor.

3.7 PREPARATION FOR LATERAL LINING – NOT USED

3.8 LATERAL LINING INSTALLATION - NOT USED

3.9 LATERAL RENEWAL - NOT USED

3.10 LATERAL-MAINLINE INTERFACE SEAL

- A. After mainline lining is completed and the laterals have been recently renewed, install watertight lateral-mainline interface seal and extend minimum of 18 inches into lateral to create water tight seal, ensuring interface is smooth and does not impede flow from lateral.
 - 1. Approved for lateral lining seal.
 - a. LMK Enterprises
 - 1) T-Liner type lateral lining system (shorty) by LMK Enterprises
 - 2) 2-piece Hydrophilic, Full Circle Structural Connection Seal
 - 2. Approved for Interface Injection Seal.
 - a. Janssen Process Company.
 - b. Perform manufacturer's required and industry standard preparation work to alleviate lateral-mainline interface seal problems and as specified herein.
 - c. Prokasro Interface Injection
 - 3. As necessary for access of equipment, contour manhole bench and channel by saw cutting.
 - 4. Internally remove any obstructions, roots, debris, or grease that impact lateral-

- mainline interface seal.
 - 5. Remove tuberculation on ductile iron lateral.
 - 6. Do not back-up or blow-back waste into property owners' building.
 - 7. Perform pre-lining leakage control by chemical grout method to eliminate cold spots.
 - a. Chemical grouting not required for Janssen resin seal method.
 - 8. Lateral, mainline, or property damaged as result of improper use of equipment:
Repaired at no cost to the District.
- B. Setup bypass pumping, if necessary, or turn off water to building with District Engineer's approval.

3.11 PREPARATION FOR SPOT REPAIRS

- A. Perform internal inspections after cleaning sewer: Follow Section 02956 and as specified herein.
- 1. Inspect fault in conduit using CCTV and record detail. Estimate dimensions of fault and length of repair required.
 - 2. Confirm, locate and identify by building address existing connections and services attached to impacted sewer main and furnish to District Engineer.
 - 3. Confirm that pipe is ready for repair.
 - a. If internal spot repair is not viable, notify District Engineer and provide pre-inspection CCTV recording.
- B. Fill void areas prior to performing internal spot repair.

3.12 POST INSPECTION OF MAIN, AND LATERAL-MAINLINE INTERFACE

- A. Follow Section 02956 and specified herein.
- B. Verify system is sealed and free of leaks.
- 1. Show liner at manhole wall is sealed with no leakage.
 - 2. Show main, lateral, and lateral-mainline interface seal are installed properly.

3.13 ACCEPTANCE

- A. Inspect sewer main, lateral, and lateral-mainline system by CCTV inspection.
- B. Infiltration of groundwater: None.
- C. Laterals: Reinstated and unobstructed.
- D. Defects When District Engineer Deems Repairable: Repair defect, replace liner, install new service, or replace lateral-mainline interface at no additional cost to the District.

3.14 ADDITIONAL WORK ORDERS

- A. Additional Work Orders may be issued and may be designated as emergency.
- B. Commence emergency work within 24 hours of issuance.

END OF SECTION

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SECTION 03959

SEWER MAIN SEALING BY CHEMICAL GROUT

PART 1 GENERAL

1.1 DESCRIPTION

- A. Section includes requirements for rehabilitation of defective sewer mainline and lateral joints, circumferential mainline cracks, other small mainline defects and defective lateral - mainline interfaces by application of chemical grout material. Grout repairs shall be performed, when inspection indicates a necessity and practical, and prior to lining per Section 03955.

1.2 DEFINITIONS

- A. Mainline: Sewer Main.
- B. Lateral: Service pipe from property line to mainline.
- C. Lateral -Mainline Interface: Lateral connection to mainline.
- D. Lateral -Mainline Interface Seal: Watertight seal between lateral and mainline.

1.3 QUALITY ASSURANCE

- A. Follow ASTM F2304 and F2454-05.
- B. Commercially Proven Products:
 - 1. Minimum 12,000 mainline joints and 1,000 lateral-mainline interfaces successfully grouted and documented in the United States and Internationally.
 - 2. Translate international installations into English for District Engineer's approval.
- C. Personnel involved in sealing of joints and lateral connections: Certified by grout manufacturer they have successfully completed training in handling, mixing and application of grout for sanitary sewer line and joint and lateral connection sealing.
- D. Third -Party Inspector: Minimum of 5 years' experience in Chemical grouting applications and have no financial or directorial link to grout manufacturer or Contractor.
- E. District Engineer may inspect and test grout at factory, before delivery to site, while in storage, or prior to use.
- F. Internally CCTV inspect host pipe prior to grouting, during grouting and post grouting.

1.4 SUBMITTALS

- A. Submit the following:
 - 1. Catalog data showing manufacturer's clarifications and updates, ASTM references, material composition, specifications, and physical and chemical properties of grout.

2. Calculations of expected volumes of annular space between packer and pipe wall, to be used in calculating required gel times.
 3. Manufacturer's recommended procedures for handling, storing, mixing and injecting grout.
 4. Method of Construction.
 - a. Access manholes and site locations.
 - b. Work dimensions.
 - c. Size of working area.
 - d. Impacted portions of existing sewer.
 - e. Site access points.
 - f. Bypass pumping plan: Following Section 02960.
 5. Emergency plan detailing procedures to be followed in event of health and safety emergency, pump failures, sewer overflows, service backups, and sewage spillage. Maintain copy on site for duration of project.
 - a. Address dangers associated with sewer rehabilitation work.
 - b. Identify Health and Safety officer. (i.e. crew chief)
 - c. Designated Health and Safety officer:
 - 1) Responsible for providing health and safety oversight of personnel participating on project team.
 - 2) Perform and document routine work area inspections, conduct safety meetings, and provide safety orientations for team members.
 - 3) Have in easily accessible location, the following contact information
 - a) Non emergency number.
 - b) Contractor's health and safety representative name and number.
 - c) Occupational health clinic number(s).
 - d. Submit for review the following;
 - 1) List of critical rehabilitation equipment, to be inspected on daily basis.
 - 2) Recently completed (previous month) monthly maintenance log.
- B. Submit the following:
1. Grout manufacturer's certification that Contractor is approved installer of their system. Certificates of training in handling, mixing, and application of grout for sanitary sewer line and joint and lateral connection sealing for grout truck operator and at least one crewmember involved in sealing process.
 2. Third party lab test results for field installations in United States of same grout system as proposed for actual installation.
 - a. Test results must verify grout physical and chemical properties specified herein have been achieved in previous field applications.
 3. CCTV inspection reports and electronic downloads following 02956, before and following sewer joint sealing. Furnish original copies of CCTV inspections color DVDs to District Engineer within 10 days.
 4. Documentation for Products and Installers: District Engineer's approval required before acceptance or injection of grout.

5. Proof of grout manufacturer's product liability insurance, if requested by District Engineer.
6. Pump calibration information.
7. Field sealing records.
8. Certification of accuracy and calibration of pressure sensing/monitoring equipment by independent testing firm within one month before use of equipment.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Protect, store, and handle grout or other material during transportation and delivery, while stored on-site, and during installation following manufacturer's recommendations.
- B. Grout Material found defective or damaged due to manufacture or shipment:
 1. Remove from Contract site and replace, following District Engineer's direction, at no cost to the District.

PART 2 PRODUCTS

2.1 MATERIALS

- A. Grouting.
 1. Properties and Characteristics.
 - a. Will perform in presence of infiltrating water, during injection.
 - b. Packaged for field storage, handling requirements with minimum spillage and worker safety.
 2. Cured grout:
 - a. Submergible in water without degrading.
 - b. Not biodegradable.
 - 1) Additives may be used to meet this requirement, without effecting long- term strength.
 - c. Chemically stable and resistant to concentrations of acids, alkalis, and organic materials found in normal sewage.
 3. Composition.
 - a. Acrylamide gel:
 - 1) Minimum of 10 percent acrylamide base material by weight in total grout mix.
 - 2) Higher concentration percent of acrylamide base material (maximum 20%) may be used to increase strength or offset dilution during injection.
 - 3) Able to tolerate some dilution and react in moving water during injection.
 - 4) Approximately 2 centipoise viscosity. Can be increased with additives.
 - 5) Constant viscosity during reaction period.
 - 6) Controlled reaction time from 10 seconds to 1 hour.
 - 7) Curing reaction producing a homogenous, chemically stable, non - biodegradable, firm, flexible gel.
 - 8) Able to prevent dehydration and increase -mix viscosity, density and gel strength by use of additives.

- a) Diatomaceous earth (Celite 209 or equal) can be added to concentration of five percent.
 - b) Use of other additives following manufacturer's recommendation and District Engineer's approval.
- 9) Root control additive 2, 6-Dichlorobemonitrile, may be added following manufacturer's recommendation and District Engineer's direction.

b. Urethane gel:

- 1) Ratio: One part urethane prepolymer mixed with 5 to 10 parts water by volume.
 - a) Recommended mix ratio: 1 part urethane prepolymer to 8 parts of water (11 percent prepolymer).
- 2) Liquid prepolymer:
 - a) Solids content: 77 to 83 percent.
 - b) Specific Gravity: 1.04 (8.65 pounds per gallon)
 - c) Flash Point: 20 degrees F.
 - d) Viscosity: 600 to 1,200 centipoises water at 70 degrees F.
- 3) Water for reacting prepolymer: pH of 6.5 to 8.
- 4) Curing reaction:
 - a) Produces chemically stable, non-biodegradable, tough, flexible gel.
 - b) Able to increase mix viscosity, density, gel strength and resistance to shrinkage by using additives in water component of grout.
 - c) Minimum 15 percent shrink control agent supplied by the same manufacturer.

c. Acrylate gel:

- 1) Minimum 10 percent acrylate base material by weight or as specified by the manufacturer.
 - a) In total grout mix, a higher concentration (percent) of acrylate base material may be used to increase strength or offset dilution during injection.
 - b) If acrylate base material is in 40 percent solution 27.5 percent by weight of total grout mix: 11 percent base material.
- 2) Able to tolerate some dilution and react in moving water during injection.
- 3) Viscosity: Approximately 2 centipoises.
 - a) Can be increased with additives.
- 4) Constant viscosity during reaction period.
- 5) Controlled reaction time: 10 seconds to 1 hour.
- 6) Curing reaction producing homogeneous, chemically stable, non-biodegradable, flexible gel.
- 7) Able to prevent dehydration and to increase-mix viscosity, density and gel strength by use of additives.
 - a) Diatomaceous earth (Celite 209 or equal) can be added to concentration of five percent, by volume.
 - b) Use of other additives following manufacturer's recommendations and District Engineer's approval.
- 8) Root control additive 2, 6-Dichlorobenzonitrile, may be added following manufacturer's recommendation and District Engineer's direction.

2.2 EQUIPMENT

A. General.

1. CCTV system, necessary chemical grout containers, pumps, regulators, valves, hoses, joint sealing packers for various sizes of sewer pipes, and lateral bladders.
2. Air pressure monitoring system:
 - a. Configured with no valves on air line between measuring point and pressure sensing device.
 - b. Digital readouts located at control panel in grouting truck.

B. Grouting packer:

1. Diameter less than pipe size, with cables attached at each end to pull it through the line.
2. Designed to allow restricted amount of sewage to flow through device, in mainlines where sewage flows do not exceed maximum depth for joint testing/sealing following manufacturer's recommendation and following ASTM F2304 and ASTM F2454-05.
3. Approved Manufacturers:
 - a. Logiball, Inc.
 - b. Cues, Inc.
 - c. Or Equal.

PART 3 EXECUTION

3.1 PREPARATION

A. Access.

1. Chemical grout sealing of mainline sewers: Through existing manholes.
2. Chemical grout sealing of lateral-mainline connections: Through mainline sewers.

B. Sewer Cleaning and Surface Preparation.

1. Cleaning of Main Line Sewers and Laterals.
 - a. Hydraulic high pressure jetting of reaches is permitted.
 - b. Before sealing work, lightly clean each line section.
 - c. Remove sludge, dirt, sand, grease, root, and other materials from pipe and collect and remove resulting debris from downstream manhole of sewer section being cleaned.
 - d. Collect debris and remove from site following jurisdictional requirements and District Engineers' approval.
 - e. Sewers damaged as result of improper use of cleaning equipment: Promptly repaired at no additional cost to the District.
 - f. Clean sewer main within 72 hours before chemical grouting of sewer lateral connections.

C. Pre-sealing CCTV Inspection.

1. After cleaning, perform CCTV inspection to ensure main is sufficiently clean to perform sealing operations. Document protruding taps and structural defects found during the CCTV inspection.

- a. If District Engineer finds main is not sufficiently cleaned, remove CCTV and sealing equipment and re-clean at no additional cost to the District.
- b. If light cleaning is not sufficient, heavy clean sewer following Section 02956.

D. Pre-sealing Reaming.

- 1. Ream or trim protruding taps following Section 02955.

E. Structural Defects.

- 1. Repair defects that would interfere with sealing operation to District Engineers acceptance prior to grout injection.
- 2. If possible, perform a reverse set up for sealing operation from opposite manhole instead of performing a point repair.

F. Bypass Pumping: Before pre-sealing CCTV inspection, and joint testing and sealing can be performed, depth of flow should be at or below levels shown in table.

- 1. If necessary, by-pass pump to bring flow levels down to acceptable levels.

Pipe Diameter (inches)	Maximum Depth of Flow (as % of Pipe Diameter)
6 to 10	20
12 to 24	25
27 or greater	30

3.2 TESTING

A. Performance Test Demonstrations.

- 1. Before start of work, verify accuracy and repeatability of void pressure meter and fluid pumping equipment.
- 2. If test demonstrations fail to show accuracy of +/-0.5 psi for void pressure repeatability and +/- 0.1 gallon of chemical pumped into measured container or bucket, make required repairs or adjustments to equipment and gauges and retest until results meet District Engineers satisfaction.
- 3. Test may be required at commencement of each work shift during sealing operations.

B. Mainline Joint Pressure Air Testing.

- 1. Before testing, perform control tests at ground surface to verify accuracy, integrity, and reliability of testing equipment following ASTM F2304.
- 2. After entering each pipe segment through manhole, and immediately before joint pressure air testing, perform an intermediate test on pipe between joints following ASTM F2454-05.

3. Maintain joint testing air pressure of 3 psi higher than groundwater pressure outside the pipe, up to maximum of 10 psi. If groundwater pressure data is not available, use joint testing pressure of 0.5 psi per vertical foot of pipe depth or 10 psi, whichever is greater.
4. Perform testing following ASTM F2304. Seal joints that do not maintain void pressure drop of less than 1 psi in 15 seconds.

C. Lateral Connection Pressure Air Testing.

1. Before lateral connection testing, perform control tests at ground surface to verify accuracy, integrity and reliability of testing equipment following ASTM F2454-05.
2. Maintain joint testing air pressure of 3 psi higher than groundwater pressure outside the pipe, up to maximum 6 psi. If groundwater pressure data is not available, use joint testing pressure of 0.5 psi per vertical foot of pipe depth or 6 psi whichever is greater.
3. Perform lateral connection testing following ASTM F2454-05. Seal joints that do not maintain void pressure with pressure drop of less than 2 psi in 15 seconds.

3.3 BASIC REQUIREMENTS.

A. General.

1. Seal joints, defects or leaking lateral connections that failed air testing or show sign of visible leaks, by internal chemical methods, as directed by District Engineer.
2. After sealing of joint, defect or connection, perform post air test per ASTM F2304 or ASTM F2454-05 for mainline sewer sealing and lateral sealing, respectively.
3. Sewer that District Engineer deems damaged as a result of Contractor's operations, will be promptly repaired to District Engineer's satisfaction at no cost to the District.
4. Grouting materials that set to a hard, rigid product capable of intrusion into sewer lines are not acceptable unless specifically approved by District Engineer on a case by case basis.
5. Provide qualified, independent third party inspector to observe grouting mixing process, chemical grouting injections process and post grouting pressure testing. Report findings to District Engineer.

B. Application Procedures for Joint Sealing and Lateral Connection Sealing.

1. Force chemical grouting material into or through faulty joints, defects or lateral connection by system of pumps, hoses, and sealing packers.
 - a. Position packer over faulty joint or lateral connection by means of measuring device and CCTV camera in line.
 - b. For mainline sewers, expand packer end bladders using controlled pressure. For lateral connections use lateral packer equipped with lateral bladder and rotating mechanism.
 - 1) Obtain a tight seal. If a tight seal is not obtained, remove equipment and make adjustments.

- 2) Pump grout material through hose system at controlled pressures high enough to overcome external pressures such as groundwater pressures.
2. Design pumping unit, metering equipment, and packer devices so proportions and quantities of materials can be regulated following type and size of leak being sealed.
3. Set chemical pumping rates and mixing ratios as specified herein, following manufacturer's recommendations and District Engineer's adjustments.
4. Determine appropriate gel set times.
 - a. To estimate gel set times, divide estimated volume of annular space (in gallons) by grout pumping rate (in gallons per minute), then add between 15 to 25 seconds. Adjust estimate by taking into account temperature of grout tanks, temperature of hoses, temperature of groundwater, amount of groundwater present and other field conditions.
 - b. The gel set time is typically between 20 and 40 seconds. Gel set times of less than 20 seconds may be required in presence of high filtration.
 - c. Monitor induction periods and gel characteristics through daily gel time tests for each sealing vehicle. Check each new batch once. If only one batch is used, check at least twice per day.
 - d. Perform new gel time test when grout additives are modified to change gel times, at beginning of new setup with new starting manhole, or when temperature in tanks and hoses changes by more than 10 degrees F from previous gel time test.
 - e. Use water with known and controlled pH that will be used during actual grouting operations.
 - f. Allow grout mixture to settle to remove entrained oxygen, before testing gel time.
 - g. Use plastic or stainless steel tanks. Do not use tanks that contain iron or copper.
5. During seal operations, operate void pressure monitoring equipment, described herein.
6. Integrate CCTV, grout pumping, and air pressure monitoring equipment so proportions, quantities, and void pressure for materials and sealing can be instantly monitored and regulated following type and size of joint, break, or leak.
7. Amount of chemical being pumped: Based on number of pumped strokes delivered for each sealed sewer main joint, defect or leaking connection.
 - a. Record and provide results to District Engineer.
8. If large voids are encountered on outside of sewer, including the possibility of "piping" holes to ground surface, which could cause excessive use of grout material, at District Engineer's direction change operating pressures and pumping rates as follows.
 - a. Reduce pressures and pumping rates, such that intervals between pump strokes are shorter than gel time.
 - b. Pump first stage of grout, and then stop pumping until temporary gel of the grout is obtained on outside of pipe.
 - c. Increase pressure and pumping rate to pump the second stage and form a second layer.
 - d. Repeat this cycle until refusal conditions are reached, or until the inspector judges the grout consumption to be excessive.

- e. Avoid sealing inner surface of pipe from inside before building up layers on the outside.
9. Grout injection complete: When chemical grout is pumped to refusal as defined in ASTM F2304.
- a. If chemical grout cannot be pumped to refusal, within a volume less than or equal to 0.5 gallons per inch of pipe diameter due to latent physical conditions, do not perform additional work until District Engineer grants authorization.
 - b. Lateral connections: When back pressure of grout in void at mainline level drops from 8 psi to 6 psi in greater than 20 seconds after cessation of grout pumping, following ASTM F2454-05.
 - 1) If using stage grouting, grout injection is complete when refusal pressure of 8 psi is achieved.
10. Sealed Defects.
- a. Remove excess grout gel ring if obtrusive and impedes air testing and CCTV inspection of work as required. If excess grout gel ring cannot be removed by use of packer, jet clean pipe prior to testing seal.
 - b. Air test each sealed joint. (not required during CIPP installation - as next step)
 - 1) If defect or connection fails air test after grout injection, reseal failed joints and air test again.
 - 2) After lateral connection has been sealed successfully as confirmed by post air test, break lateral packer seal and test service to assure grout has not blocked lateral connection further upstream.
 - a) In the event sewage back-up occurs and enters a dwelling, respond within 2 hours of being notified and be responsible for cleanup, repair, property damage costs and claims.
 - c. After all pipe joints and lateral connections have been grouted, retest all previously unsealed pipe joints and lateral connections. Seal any pipe joints and lateral connections that do not pass the air pressure test.
11. Flush or push forward excess grouting material to next downstream manhole, and remove from sewer system.
- a. Dispose of debris following grout manufacturer's recommendation, and jurisdictional regulations.
 - b. Excess grout material from upstream section(s) will not be allowed to accumulate in sewer.
12. Provide approved plug and/or by-pass pumping if grouting operations restrict or prevent simultaneous sewage flow passage.
- a. Manage Sanitary Sewer Overflow following Section 02530.
- C. Joint, Defector Lateral Connection Sealing Verification.
- 1. Mainline joints and defects.
 - a. Deflate packer bladders after completing each seal until zero void pressure (± 0.5 psi) is shown on the monitoring equipment.
 - b. If zero void pressure (± 0.5 psi) is not achieved, clear residual grout material from packer or make needed equipment adjustments allowing true pressure reading.
 - 2. Re-test joint, defect or lateral connection as described herein.

- a. Re-seal joints, defects, or connections that do not meet specified test criteria and re-test until test criteria are met, or District Engineer determines that joint defect, or lateral connection cannot be sufficiently sealed.
- b. Additional testing and sealing will be at no additional cost to the District.

D. Residual Sealing Material.

1. Leave no residual grout material capable of reducing pipe diameter or restricting flow greater than 5 percent pipe capacity.

E. Obstructions.

1. During course of sealing operations obstructions may be encountered preventing travel of packer and camera.
 - a. Should obstruction not be passable, begin sealing operations from opposite end of sewer reach.
2. If additional obstructions are encountered after re-employment and no means are available for passing obstructions without damage to equipment, remaining sections of sewer main not sealed may be temporarily excluded from work requirements of Contract, until point repair is completed.

3.4 FIELD DOCUMENTATION.

A. Records.

1. Keep complete, accurate, and legible records of operation for each joint, deflector connection sealed.
 - a. Include on Record of Operation for each joint or lateral mainline interface tested and/or routed or attempted to be grouted:
 - 1) Identification of work site, complete component, address, county page & grid, 200 foot sheet.
 - 2) Date and time.
 - 3) Station of each seal measured from upstream manhole.
 - 4) Location of any joints not tested and reason for not testing.
 - 5) Grout mixture formation, including additives and catalyst mixture.
 - 6) Test pressures and durations of tests maintained for each joint passing the air test.
 - 7) Ambient outside air temperature at time of grout injection.
 - 8) Grout tank temperatures.
 - 9) Gel time and time last verified.
 - 10) Verified address of lateral.
 - 11) Estimated visible leakage (gpm) from joint/defect connection or lateral.
 - 12) Number of pump strokes and amount of grout in place.
 - 13) Beginning, ending, pressure losses, re-test pressures.
 - 14) Verification lateral is clear after sealing process.
 - 15) Remaining leakage and location after seal (gpm).
2. Work site will not be accepted until District Engineer receives original record.
 - a. Failure to fill out logs completely will result in non-payment for the questioned mainline joint, defect or connection.

3.5 WARRANTY

- A. Provide twelve month performance and workmanship warranty for the seals from date of acceptance of the District.
- B. Perform CCTV inspections during the first wet weather season after initial sealing, to evaluate quality of the initial sealing.
- C. CCTV inspect initial retest area consisting of 10 percent of grouted joints and 10 percent of grouted lateral connections following Section 02956.
- D. Provide qualified, independent third party inspector to review CCTV inspection videos to verify integrity of seals.
- E. Reseal all joints sealed under this Contract that inspector finds defective within warranty period, at no additional cost to the District.
 - 1. Defective seals include, but not limited to those with root penetration, signs of infiltration, and cracks in pipe or grouting material.
- F. If failure rate of retested joints and lateral connections is 5 percent or less of joints and lateral connections retested, work shall be considered satisfactory and no further retesting will be required. If the failure rate of retested joints and lateral connections is greater than 5 percent, the District Engineer shall randomly select another retest area consisting of another 10 percent of the initially sealed joints and lateral connections. Continue this additional retesting and resealing until a failure rate of less than 5 percent is met.

3.6 ACCEPTANCE

- A. When sealed joint, defect, and lateral connections pass the post air test.
- B. Or, when no infiltration flow is occurring, via visual inspection (CCTV), and CIPP installation is happening as the next step.

END OF SECTION

SECTION 15062

POLYVINYL CHLORIDE (PVC) GRAVITY SEWER PIPE AND FITTINGS

PART 1 GENERAL

1.01 DESCRIPTION

This section designates the requirements for the manufacture and installation of polyvinyl chloride, abbreviated PVC, gravity sewer pipe to be furnished and installed by the Contractor, at the location and to the lines and grades shown on the Plans as herein specified.

1.02 REFERENCE STANDARDS

The publications listed below form part of this specification to the extent referenced and are referred to in the text by the basic designation only. Reference shall be made to the latest edition of said standards unless otherwise called for:

ASTM D1784	Rigid PVC Compounds
ASTM D2321	Underground Installation of Flexible Thermoplastic Sewer Pipe
ASTM D2412	Pipe Stiffness Test
ASTM D2564	Solvent Cements for PVC Pipe Fittings
ASTM D3034	PVC Sewer Pipe and Fittings (4" to 15")
ASTM D3212	Joints for Drain and Sewer Plastic Pipe Using Elastomeric Seals
ASTM F477	Elastomeric Gaskets for Joining Plastic Pipe
ASTM F679	PVC Large Diameter Gravity Sewer Pipe and Fittings (18" to 27")
UNI-B-5	Uni Bell Recommended Practice for the Installation of PVC Sewer Pipe

1.03 RELATED WORK SPECIFIED ELSEWHERE

FPUD	Standard Drawings
Section 02223	Trenching, Backfilling and Compacting
Section 03461	Precast Concrete Manholes
Section 15043	Testing of Gravity Sewer

1.04 SUBMITTALS

The Contractor shall furnish submittals in accordance with Section 1 General Conditions. Submittals are required for the following:

- A. Submit Shop Drawings, material lists, manufacturer's literature and catalog cuts and other information.
- B. An affidavit from the pipe manufacturer including compliance with requirements of the Plans and Specifications shall be delivered with the pipe.

PART 2 MATERIALS

2.01 PVC PIPE

- A. PVC gravity sewer pipe shall be made of PVC plastic having a cell classification of 12454-B, 13364-A, or 13364-B as defined in ASTM D1784. PVC gravity sewer pipe, fittings, coupling and joints, 4-inch through 15-inch, shall be manufactured in conformance with the requirements of ASTM D3034, SDR 35 and shall have gasketed joints. All pipe shall be of solid wall construction with smooth interior and exterior surfaces.
- B. Any fittings shall also be made of PVC plastic and have a cell classification of 12454-B, 12454-C, or 13343-C as defined in ASTM D1784. PVC gravity sewer pipe, fittings, coupling and joints, 18-inch through 21-inch, shall be manufactured in conformance with the requirements of ASTM F679 with T-1 wall thickness and shall have gasketed joints. All pipe shall be of solid wall construction with smooth interior and exterior surfaces.
- C. The minimum pipe stiffness for both small diameter and large diameter PVC gravity sewer pipe shall be 46 psi according to ASTM D2412.

2.02 JOINING SYSTEM

- A. The pipe shall be jointed with an integral bell gasketed joint that meets the requirements of ASTM D3212. The gasket shall be manufactured from a synthetic elastomer and factory installed in the belled end of the pipe. Gasket shall conform to ASTM F477.
- B. All pipe shall have a homemark on the spigot end to indicate proper penetration when the joint is made. The socket and spigot configurations for fittings and couplings shall be compatible to those used for the pipe.

2.03 CERTIFICATION

Pipe, fittings, and couplings shall meet the requirements of the section titled "Requirements" of ASTM D3034 SDR 35 (4-inch through 15-inch) and ASTM F679 (18-inch through 27-inch). During production of the pipe, the manufacturer shall perform the specified tests for each pipe marking. A certification by the manufacturer indicating compliance with specification requirements shall be delivered with the pipe. The certification shall include the test result data. Pipe which is not installed within 120 days of latest test shall not be used without prior approval of the District Engineer.

2.04 WARNING/IDENTIFICATION TAPE

Use marking tape consisting of one layer of aluminum foil laminated between two colored layers of inert plastic film. The lamination bond shall be strong enough that the layers can not be separated by hand. Tape shall be a minimum of 5 mils thick and 6-inches wide. Elongation shall be a minimum of 600%. Tape shall bear a continuous, printed, message every 16 to 36-inches warning of the installation buried below. Tape shall be selected from the Approved Materials List.

PART 3 EXECUTION

3.01 PIPE LENGTHS

Standard laying lengths shall be 20-feet and 12.5-feet with the manufacturer's option to supply up to 15% random lengths. Combined horizontal and vertical deflections at PVC gravity sewer pipe shall not exceed that recommended by the manufacturer (the maximum total deflection allowed shall be three (3) degrees). Any deflection of the pipe shall be accomplished by bending the pipe along its entire length in the trench and not by deflection at the joints.

3.02 MARKING

All pipe, fittings, and couplings shall be clearly marked at an interval not to exceed 5-feet as follows:

Nominal Pipe Diameter
PVC cell classification
Company, plant, shift, ASTM, SDR, and date designation
Service designation or legend

For fittings and couplings, the SDR designation is not required.

3.03 EARTHWORK

- A. Excavation and backfill, including the pipe bedding, shall conform to the provisions of Section 02223, Trenching, Backfilling and Compacting, except as herein modified.
- B. Crushed Rock and Gravel: Crushed rock shall be the product of crushing rock or gravel. Fifty percent of the particles retained on a 3/8-inch sieve shall have their entire surface area composed of faces resulting from fracture due to mechanical crushing. Not over five (5) percent shall be particles that show no faces resulting from crushing. Less than ten (10) percent of the particles that pass 3/8-inch sieve and are retained on the No. 4 sieve shall be water worn particles. Gravel shall not be added for crushed rock.
1. Gravel shall be defined as particles that show no evidence of mechanical crushing, are fully waterworn, and are rounded. For pipe bedding, where gravel is specified, crushed rock may be substituted or added.
 2. Where crushed rock or gravel is specified in the bedding details on the Plans or in the Specifications, the material shall have the following gradations:

Sieve Size	3/4-Inch Max Crushed Rock % Passing
1"	100
3/4"	90 - 100
1/2"	55 - 90
3/8"	20 - 55
No. 4	0 - 10
No. 8	---

3. Unless otherwise specified, 3/4-inch maximum crushed rock shall be used for pipes with inside diameter of 48-inches and less.

- C. Pipe Bedding: Crushed rock shall be used for pipe bedding and shall be compacted to obtain a relative density of 90% unless otherwise specified. The thickness of the pipe bedding shall be a minimum of 6-inches. The pipe bedding shall be placed over the full width of the trench.
- D. Backfill Within Pipe Zone: Crushed rock shall be placed and compacted within the pipe zone from the bottom of the pipe to 12-inches above the top of the pipe outside diameter. The crushed rock shall be compacted to obtain a relative density of 90% unless otherwise specified.

3.04 GENERAL INSTALLATIONS PROCEDURES AND WORKMANSHIP

- A. PVC pressure pipe and fittings shall be installed per ASTM D2321, Uni Bell pamphlet Uni-B-5, and the manufacturer's recommendations.
- B. Proper care shall be used to prevent damage in handling, moving, and placing the pipe. The Contractor shall unload the pipe by mechanical means such as a crane or backhoe, or by rope and skids, as recommended by the manufacturer. In using skids, pipes must be prevented from striking other pipe. Dropping pipe from truck will not be permitted.
- C. All pipe shall be laid without break, upgrade from structure to structure, with the bell ends of the pipe upgrade. Pipe shall be laid to the line and grade given so as to form a close concentric joint with the adjoining pipe and prevent sudden offsets of the flow line. The interior of the pipe shall be cleaned of all dirt and superfluous materials of all description immediately prior to installing the pipe. The Contractor shall wipe the mating surfaces of the pipe to be joined clean of all dirt and foreign matter and apply an approved lubricant. The spigot end shall be inserted to the proper depth of the socket as indicated by the home mark.
- D. Laying tolerances for the installed pipe shall not vary greater than 0.3-foot horizontally, or greater than 0.1-foot vertically from the alignment and elevations shown on the Approved Drawings.

3.05 BRANCHES

- A. PVC wyes, and other types of branches shall be furnished and installed along with PVC pipe as is called for on the Plans. The longitudinal barrel of branch fittings, to be placed in line and grade with PVC sewer mains, shall be of the same diameter, quality, and type as specified herein for sewer installations, and shall conform to the applicable provisions set forth for PVC gravity sewer pipe. Unless otherwise specified, the branch of wye fittings shall be inclined upward at an angle not greater than 45 degrees from a horizontal line. No wye shall be placed closer than 5-feet in the downstream side to the centerline of any structure. Also no two wyes or tees shall be laid back to back. There shall be a minimum of 3-feet between each branch fitting.
- B. The Contractor shall place a support of grade crushed rock or gravel under every wye branch when installed.

3.06 CONNECTIONS TO EXISTING SEWER

All connections into existing sewer lines shall be made by installing a pvc wye with stainless steel couplers.

3.07 MANHOLES

Connection of PVC sewer pipe to the manhole shall be water tight. The connection shall be made with a gasket plastic manhole coupling in accordance with Section 03461 and the Standard Drawings.

3.08 PREVENTING FOREIGN MATTER FROM ENTERING THE PIPE

At all times when pipe laying is not in progress, the open end of the pipe shall be closed with a tight-fitting cap or plug to prevent the entrance of foreign matter into the pipe. These provisions shall apply during the noon hour as well as overnight. Under no circumstances shall the pipeline be used as a drain for removing water which has infiltrated into the trench. The Contractor shall maintain the inside of the pipe free from foreign materials and in a clean and sanitary condition until its acceptance by the Owner.

3.09 CLEANING

Before testing, each pipe shall be thoroughly cleaned from manhole to manhole with a sewer Wayne ball. All debris and trash shall be removed from each manhole.

3.10 TEST FOR LEAKAGE AND INFILTRATION

The pipe, and other appurtenances shall be tested for leakage and infiltration in accordance with Section 15043, Testing of Gravity Sewer.

3.11 MANDREL TEST

- A. Following the completion of the required testing, the placement and densification of backfill, and the installation of all utilities, and prior to the placing of the permanent paving, all PVC sewer pipe shall be cleaned and then mandrelled, to measure for obstructions (deflections, joint offsets, and lateral pipe intrusions) in accordance with the requirements of the Standard Specifications for Public Works Construction (latest edition) Section 306-1.2.12. A rigid mandrel, with a circular cross section having a diameter of at least 95% of the specified inside diameter, shall be pulled through the pipe by hand. The minimum length of the circular portion of the mandrel shall be equal to the nominal diameter of the pipe.
- B. Obstructions encountered by the mandrel shall be corrected by the Contractor. All material, equipment, and labor to perform the test shall be provided by the Contractor at no cost to the District.

END OF SECTION

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DRAWINGS/ MAPS

INDEX

OVERVIEW MAP = LOCATION / VACINITY MAP

- # MHs/ # of Laterals/ Total Linear Ft./ Main Size

MAP A	-	3	4	684	8"
MAP B	-	2	0	177	6"
MAP C	-	2	1	350	8"
MAP D	-	2	2	217	8"
MAP E	-	2	0	298	6"
MAP F	-	2	0	101	10"
MAP G	-	3	4	450	6"
			TOTAL	2277 FT	

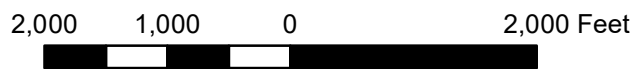
APPENDIX TO MAPS – INSPECTION RECORDS BY MAP NAME



SEWER MAIN RELINING FY 25 - OVERVIEW MAP A-G

Total Length: 2277

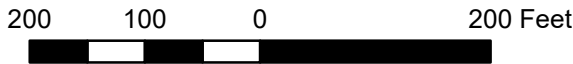
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MAP A
B130-B11
B11-B12

MAP A
B130-B11
B11-B12



8-INCH SEWER MAIN RELINING (684 LINEAR FT)

MH: B130-B11 340 FT MH: B11-B12 344FT

4 LATERALS (NOT SHOWN IN MAP)

Map Created by Sierra Stephensen (9-24-24).

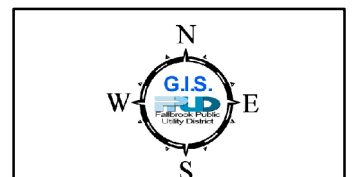
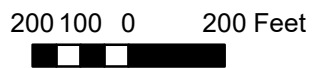
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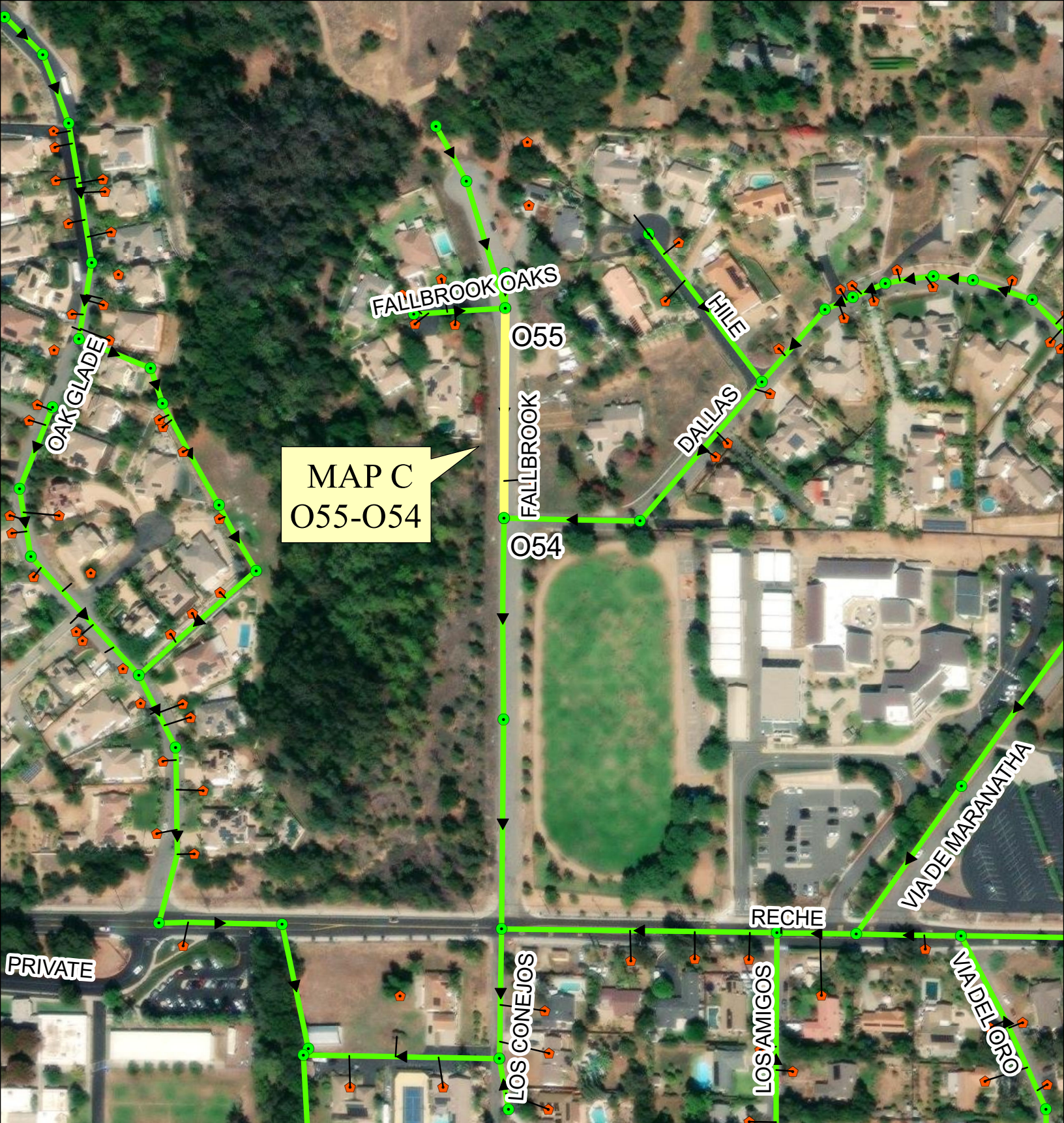


MAP B B50-B51

**6-INCH SEWER MAIN RELINING (177 LINEAR FT)
NO LATERALS**



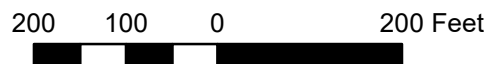
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MAP C
O55-O54

MAP C O55-054

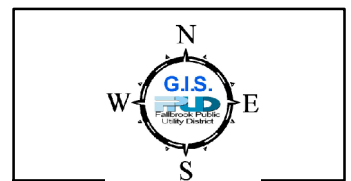
8-INCH SEWER MAIN RELINING (350 LINEAR FT)
1 LATERAL



Map Created by Sierra Stephensen (9-17-24).

Source: FPUD, ESRI

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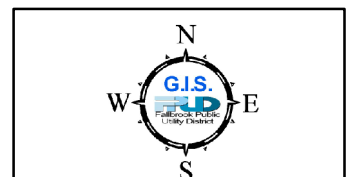
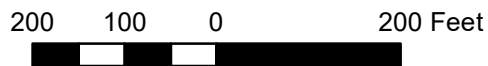
Projection: California State Plane Zone 6, NAD 83, Feet. Epoch 1991.35



MAP D P51-P14

8-INCH SEWER MAIN RELINING (217 LINEAR FT)

2 LATERALS



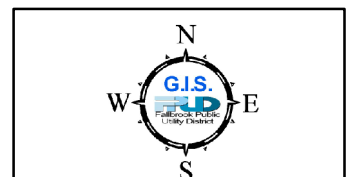
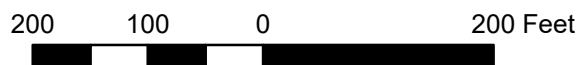
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MAP E

J38-36

**6-INCH SEWER MAIN RELINING (298 LINEAR FT)
NO LATERALS**



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MAP F
J12-J10

STAGE COACH

J12

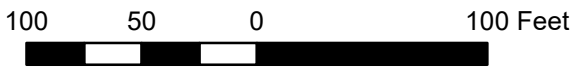
J10

MISSION

MAP F J12-J10

10- INCH SEWER MAIN RELINING (100.8 LINEAR FT)
NO LATERALS

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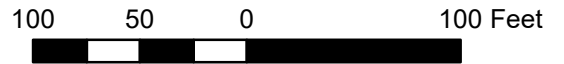
Map Created by Sierra Stephensen (9-24-24).

Source: FPUD, ESRI

Projection: California State Plane Zone 6, NAD 83, Feet. Epoch 1991.35



MAP G
J92-J91
J115-J92

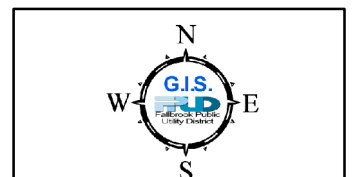


6-INCH SEWER MAIN RELINING (450 LINEAR FT)

MH: J92-J91 185 ft MH: J115-J92 265 ft

4 LATERALS

Map Created by Sierra Stephensen (9-17-24).



DISCLAIMER: By accepting this map, you agree that the Fallbrook Public Utility District assumes no liability or responsibility of any kind arising from use of this map. This map, its Data, and any calculations associated with this map is provided without warranty of any kind.



Inspection report

Date: 4/10/2024	Work Order: 27286	Weather:	Surveyed By: Chad Wodarczyk	Certificate Number: p0033938-092021	Pipe Segment Ref.: COL-P1PZ-GSMN-B11-B2
Year laid:	Pre-cleaning: Not Known	Direction: Downstream	Pipe Joint Length: 4.0	Total Length: 359.1'	Length Surveyed: 359.1'

City: FALLBROOK	Drainage Area:	Upstream MH: B11
Street: S MISSION RD	Media Label:	Up Rim to Invert:
Location Code:	Flow Control:	Downstream MH: B12
Location Details: B11-B12	Sheet Number:	Down Rim to Invert:
Pipe shape: Circular	Sewer Use: Sanitary Sewage Pipe	Total gallons used: 0.0
Pipe size: 8"	Sewer Category: SEC	Joints passed: 0
Pipe material: Vitrified Clay	Purpose:	Joints failed: 0
Lining Method:	Owner:	

Additional Info:

1:2351	Distance	Code	Observation	Grade
	0.0	AMH	Manhole / B11	
	0.0	MWL	Water Level, 5% of the vertical dimension	
	41.9	RFJ	Roots Fine Joint at 3 o'clock, within 8 inch	M1
	65.2	TF	Tap Factory Made at 12 o'clock, dia/height: 4inch	
	68.4	IDJ	Infiltration Dripper Joint at 11 o'clock, within 8 inch	M3
	78.8	RFJ	Roots Fine Joint from 11 o'clock to 4 o'clock, within 8 inch	M1
	89.3	RFJ	Roots Fine Joint from 7 o'clock to 11 o'clock, within 8 inch	M1
	107.0	MMC	Miscellaneous Material Change / VCP TO PVC	
	108.9	TF	Tap Factory Made at 9 o'clock, dia/height: 4inch	
	109.8	MMC	Miscellaneous Material Change / PVC TO VCP	
	244.7	MMC	Miscellaneous Material Change / PVC TO VCP	
	247.5	MMC	Miscellaneous Material Change / PVC TO VCP	
	248.8	CS	Crack Spiral from 1 o'clock to 8 o'clock	S2
	291.3	CS	Crack Spiral from 1 o'clock to 11 o'clock	S2
	308.5	MMC	Miscellaneous Material Change / VCP TO PVC	
	311.2	TF	Tap Factory Made at 3 o'clock, dia/height: 4inch	



Inspection report

Date: 4/10/2024	Work Order: 27286	Weather:	Surveyed By: Chad Wodarczyk	Certificate Number: p0033938-092021	Pipe Segment Ref.: COL-P1PZ-GSMN-B11-B12
Year laid:	Pre-cleaning: Not Known	Direction: Downstream	Pipe Joint Length: 4.0	Total Length: 359.1'	Length Surveyed: 359.1'

	Distance	Code	Observation	Grade
	311.8	MMC	Miscellaneous Material Change / PVC TO VCP	
	333.1	CS	Crack Spiral from 12 o'clock to 11 o'clock	S2
	340.9	CS	Crack Spiral from 12 o'clock to 11 o'clock	S2
	345.2	CS	Crack Spiral from 12 o'clock to 11 o'clock	S2
	359.1	AMH	Manhole / B12	

QSR	QMR	QOR	SPR	MPR	OPR	SPRI	MPRI	OPRI
2500	3113	3125	10.0	6.0	16.0	2.0	1.5	1.8



WinCan

REF. Map A

Inspection report

Date: 4/10/2024	Work Order: 27283	Weather:	Surveyed By: Chad Wodarczyk	Certificate Number: p0033938-092021	Pipe Segment Ref.: COL-P1PZ-GSMN-B130-B11
Year laid:	Pre-cleaning: Not Known	Direction: Downstream	Pipe Joint Length: 4.0	Total Length: 342.1'	Length Surveyed: 342.1'

City: FALLBROOK	Drainage Area:	Upstream MH: B130
Street: W BEECH ST	Media Label:	Up Rim to Invert:
Location Code:	Flow Control:	Downstream MH: B11
Location Details: B130-B11	Sheet Number:	Down Rim to Invert:
Pipe shape: Circular	Sewer Use: Sanitary Sewage Pipe	Total gallons used: 0.0
Pipe size: 8"	Sewer Category: SEC	Joints passed: 0
Pipe material: Vitrified Clay	Purpose:	Joints failed: 0
Lining Method:	Owner:	

Additional Info:

1:2583	Distance	Code	Observation	Grade
B130				
	0.0	AMH	Manhole / B130	
	0.0	MWL	Water Level, 8% of the vertical dimension	
	24.4	RFJ	Roots Fine Joint from 10 o'clock to 5 o'clock, within 8 inch	M1
	30.2	RFJ	Roots Fine Joint from 3 o'clock to 5 o'clock, within 8 inch	M1
	39.0	RFJ	Roots Fine Joint from 3 o'clock to 9 o'clock, within 8 inch	M1
	66.7	IRJ	Infiltration Runner Joint at 8 o'clock, within 8 inch	M4
	78.9	RFJ	Roots Fine Joint from 3 o'clock to 9 o'clock, within 8 inch	M1
	87.7	RFJ	Roots Fine Joint from 7 o'clock to 9 o'clock, within 8 inch	M1
	222.8	TF	Tap Factory Made at 1 o'clock, dia/height: 4inch	
	292.9	CM	Crack Multiple from 5 o'clock to 7 o'clock	S3
	321.8	MMC	Miscellaneous Material Change / VCP TO PVC	
	326.7	MMC	Miscellaneous Material Change / PVC TO VCP	
	342.1	AMH	Manhole / B11	
B11				

QSR 3100	QMR 4115	QOR 4131	SPR 3.0	MPR 9.0	OPR 12.0	SPRI 3.0	MPRI 1.5	OPRI 1.7
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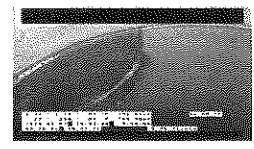
Inspection report

Date: 3/1/2024	Work Order: 25851	Weather:	Surveyed By: Chad Wodarczyk	Certificate Number: p0033938-092021	Pipe Segment Ref.: COL-P1PZ-GSMN-B50-B51
Year laid:	Pre-cleaning: Not Known	Direction: Downstream	Pipe Joint Length: 4.0	Total Length: 177.3'	Length Surveyed: 174.7'

City: FALLBROOK	Drainage Area:	Upstream MH: B50
Street: W ELDER ST	Media Label:	Up Rim to Invert:
Location Code:	Flow Control:	Downstream MH: B51
Location Details: B50-B51	Sheet Number:	Down Rim to Invert:
Pipe shape: Circular	Sewer Use: Sanitary Sewage Pipe	Total gallons used: 0.0
Pipe size: 6"	Sewer Category: SEC	Joints passed: 0
Pipe material: Vitrified Clay	Purpose:	Joints failed: 0
Lining Method:	Owner:	

Additional Info:

1:1339	Distance	Code	Observation	Grade
B50	0.0	AMH	Manhole / B50	
	0.0	MWL	Water Level, 10% of the vertical dimension	
	2.2	MMC	Miscellaneous Material Change, Ductile Iron Pipe / VCP TO DIP	
	40.5	MMC	Miscellaneous Material Change, Vitrified clay pipe / DIP TO VCP	
	43.3	CM	Crack Multiple from 10 o'clock to 2 o'clock	S3
	61.1	CM	Crack Multiple from 10 o'clock to 2 o'clock	S3
	63.8	CM	Crack Multiple from 9 o'clock to 3 o'clock	S3
	66.9	CL	Crack Longitudinal at 2 o'clock	S2
	73.0	CL	Crack Longitudinal at 3 o'clock	S2
	99.7	IWJ	Infiltration Weeper Joint at 9 o'clock, within 8 inch	M2
	117.4	CL	Crack Longitudinal at 9 o'clock	S2
	117.5	RFJ	Roots Fine Joint from 10 o'clock to 2 o'clock, within 8 inch	M1
	120.5	CL	Crack Longitudinal at 9 o'clock	S2
	122.8	IWJ	Infiltration Weeper Joint at 8 o'clock, within 8 inch	M2
	131.6	IDJ	Infiltration Dripper Joint at 3 o'clock, within 8 inch	M3
B51	174.7	AMH	Manhole / B51	



CL - 72.98

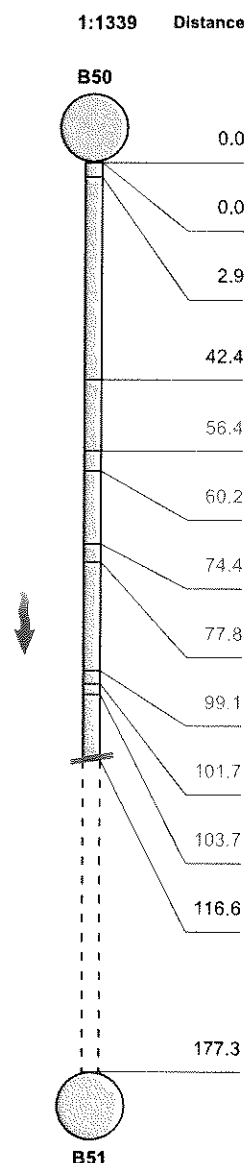
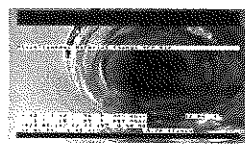
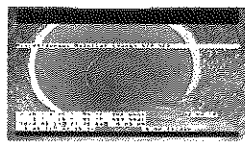
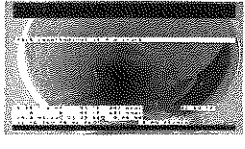
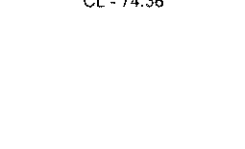
QSR	QMR	QOR	SPR	MPR	OPR	SPRI	MPRI	OPRI
3324	3122	3426	17.0	8.0	25.0	2.4	2.0	2.3

Inspection report

Date: 1/23/2024	Work Order: 24256	Weather:	Surveyed By: Peter Velasco	Certificate Number: P0038704-072022	Pipe Segment Ref.: COL-P1PZ-GSMN-B50-B51
Year laid:	Pre-cleaning: Not Known	Direction: Downstream	Pipe Joint Length: 4.0	Total Length: 177.3'	Length Surveyed: 116.6'

City: FALLBROOK	Drainage Area:	Upstream MH: B50
Street: W ELDER ST	Media Label:	Up Rim to Invert:
Location Code:	Flow Control:	Downstream MH: B51
Location Details: B50-B51	Sheet Number:	Down Rim to Invert:
Pipe shape: Circular	Sewer Use: Sanitary Sewage Pipe	Total gallons used: 0.0
Pipe size: 6"	Sewer Category: SEC	Joints passed: 0
Pipe material: Vitrified Clay	Purpose:	Joints failed: 0
Lining Method:	Owner:	

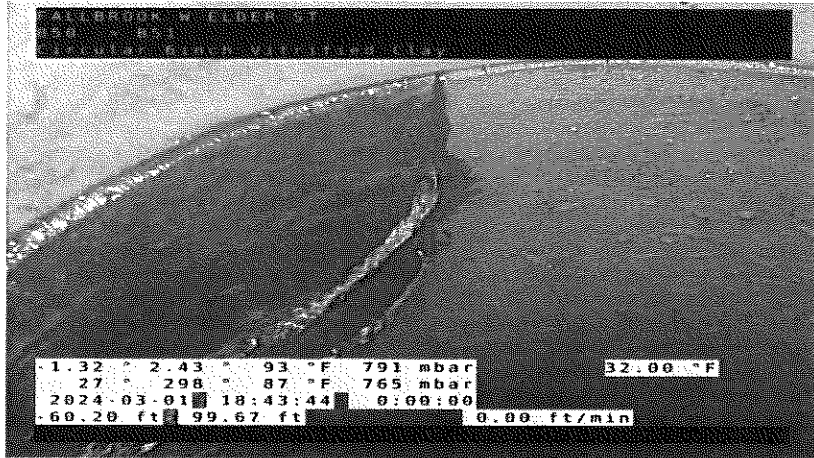
Additional Info:

1:1339	Distance	Code	Observation	Grade
	0.0	AMH	Manhole / B51	
	0.0	MWL	Water Level, 1% of the vertical dimension	
	2.9	MMC	Miscellaneous Material Change / VCP-DIP	 MMC - 2.91
	42.4	MMC	Miscellaneous Material Change / DIP-VCP	 MMC - 42.45
	56.4	RMJ	Roots Medium Joint at 1 o'clock, 5% of cross sectional area, within 8 inch	M3
	60.2	RFJ	Roots Fine Joint at 9 o'clock, within 8 inch	M1
	74.4	CL	Crack Longitudinal at 4 o'clock	S2
	77.8	RFJ	Roots Fine Joint at 8 o'clock, within 8 inch	M1
	99.1	RFJ	Roots Fine Joint at 3 o'clock, within 8 inch	M1
	101.7	IRJ	Infiltration Runner Joint at 9 o'clock, within 8 inch	M4
	103.7	CC	Crack Circumferential from 4 o'clock to 11 o'clock	S1
	116.6	MSA	Miscellaneous Survey Abandoned / CAN NOT CONTINUE DEBRIS IN PIPE	 RFJ - 60.20
	177.3		End of pipe	 CL - 74.36



Section Pictures - 3/1/2024 - COL-P1PZ-GSMN-B50-B51

City FALLBROOK	Street W ELDER ST	Date 3/1/2024	Lateral Segment Reference COL-P1PZ-GSMN-B50-B51	Section No. 4
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COL-P1PZ-GSMN-B50-B51_963cddc7-c2c1-4302-8cea-d743c5b074a8_20240301_085240_11.jpg, 00:05:26, 72.98ft
Crack Longitudinal at 3 o'clock



Inspection report

Date: 1/23/2024	Work Order: 24256	Weather:	Surveyed By: Peter Velasco	Certificate Number: P0038704-072022	Pipe Segment Ref.: COL-P1PZ-GSMN-B50-B51
Year laid:	Pre-cleaning: Not Known	Direction: Downstream	Pipe Joint Length: 4.0	Total Length: 177.3'	Length Surveyed: 116.6'



RFJ - 77.81



RFJ - 99.12



IRJ - 101.67



CC - 103.70



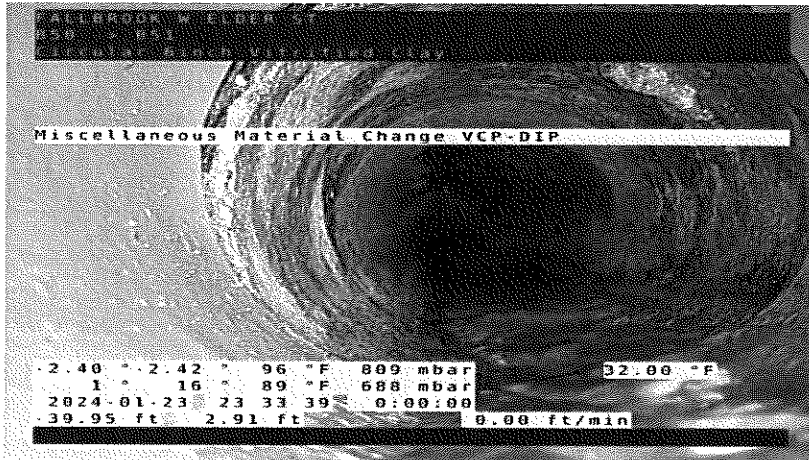
MSA - 116.59

QSR	QMR	QOR	SPR	MPR	OPR	SPRI	MPRI	OPRI
2111	4131	4131	3.0	10.0	13.0	1.5	2.0	1.9

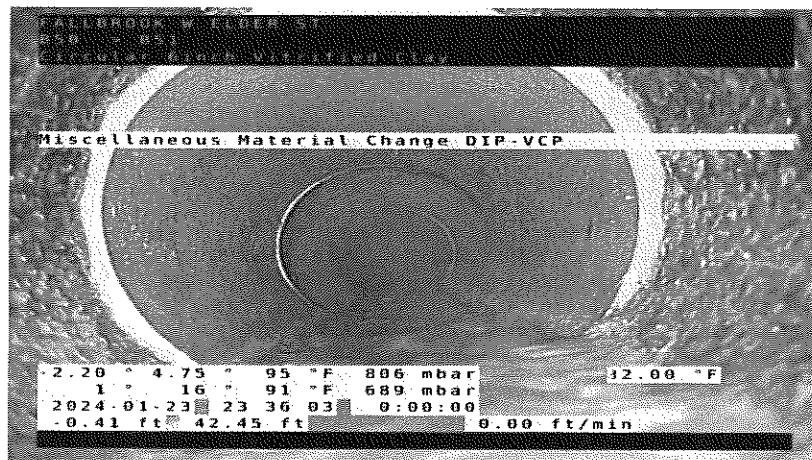


Section Pictures - 1/23/2024 - COL-P1PZ-GSMN-B50-B51

City FALLBROOK	Street W ELDER ST	Date 1/23/2024	Lateral Segment Reference COL-P1PZ-GSMN-B50-B51	Section No. 4
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COL-P1PZ-GSMN-B50-B51_d810945a-dad4-4d6b-8831-ff6e1c99b102_20240123_134201_133.jpg, 00:00:47, 2.91ft
Miscellaneous Material Change / VCP-DIP

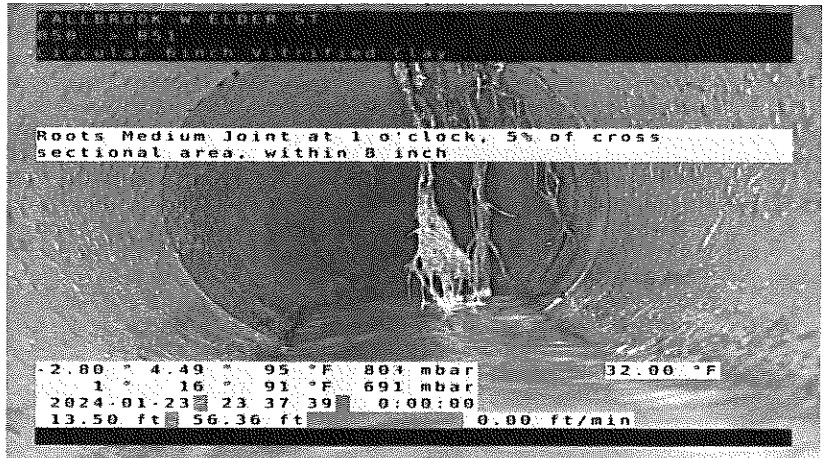


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Miscellaneous Material Change / DIP-VCP

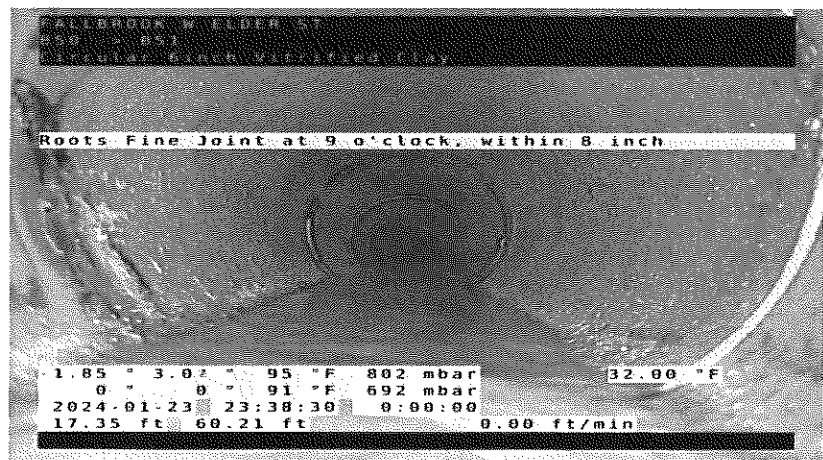


Section Pictures - 1/23/2024 - COL-P1PZ-GSMN-B50-B51

City FALLBROOK	Street W ELDER ST	Date 1/23/2024	Lateral Segment Reference COL-P1PZ-GSMN-B50-B51	Section No. 4
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COL-P1PZ-GSMN-B50-B51_8289706f-bc47-4582-a40a-ae4e760bd436_20240123_134600_968.jpg, 00:04:02, 56.36ft
 Roots Medium Joint at 1 o'clock, 5% of cross sectional area, within 8 inch

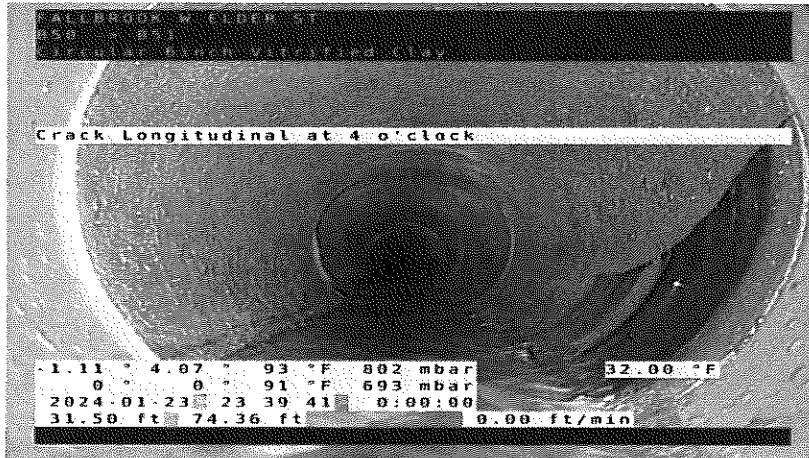


COL-P1PZ-GSMN-B50-B51_afd98a1f-2959-494e-8c7f-ab32131173bb_20240123_134652_117.jpg, 00:04:32, 60.20ft
 Roots Fine Joint at 9 o'clock, within 8 inch

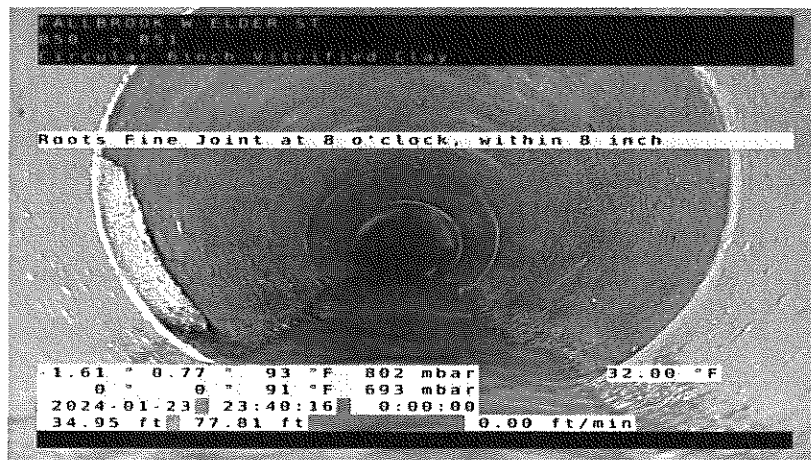


Section Pictures - 1/23/2024 - COL-P1PZ-GSMN-B50-B51

City FALLBROOK	Street W ELDER ST	Date 1/23/2024	Lateral Segment Reference COL-P1PZ-GSMN-B50-B51	Section No. 4
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COL-P1PZ-GSMN-B50-B51_a4d4c936-8bfc-4dbf-a76b-4c9927bee056_20240123_134803_49
1.jpg, 00:05:34, 74.36ft
Crack Longitudinal at 4 o'clock

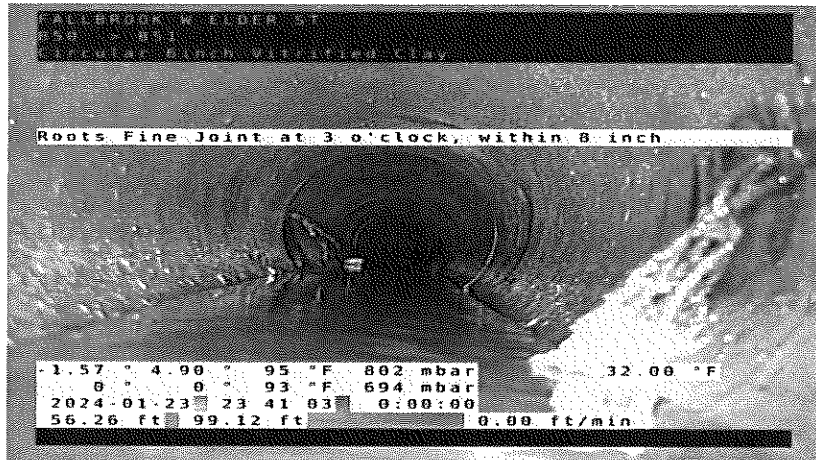


COL-P1PZ-GSMN-B50-B51_f7ec862c-6eca-4b38-9f0a-7e74f0359692_20240123_134837_967.jpg,
00:05:52, 77.81ft
Roots Fine Joint at 8 o'clock, within 8 inch

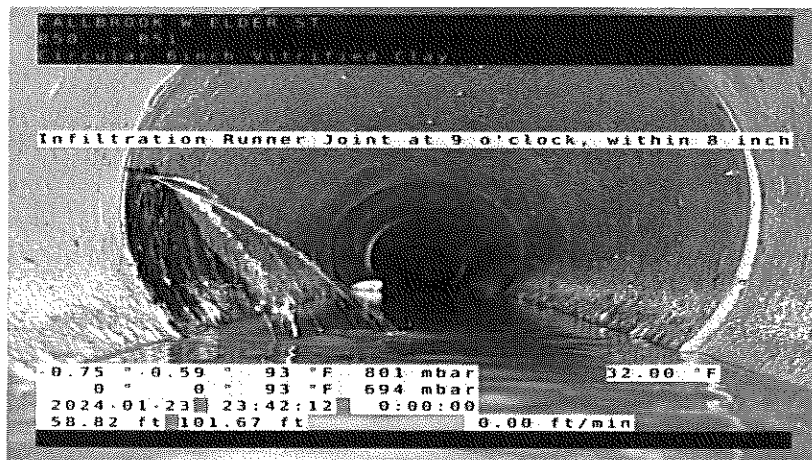


Section Pictures - 1/23/2024 - COL-P1PZ-GSMN-B50-B51

City FALLBROOK	Street W ELDER ST	Date 1/23/2024	Lateral Segment Reference COL-P1PZ-GSMN-B50-B51	Section No. 4
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COL-P1PZ-GSMN-B50-B51_72917ef6-c6be-4de8-a6f2-b8221d636cde_20240123_134925_40
2.jpg, 00:06:29, 99.12ft
Roots Fine Joint at 3 o'clock, within 8 inch

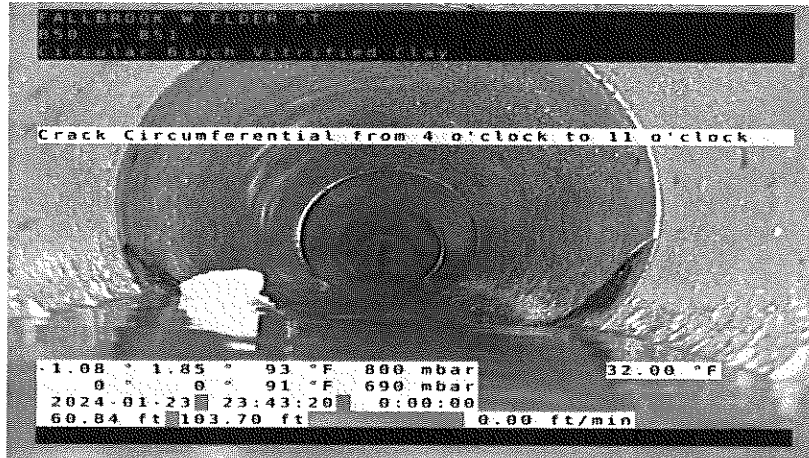


COL-P1PZ-GSMN-B50-B51_ed350209-875f-4fc1-b020-e23983867a16_20240123_135033_7
31.jpg, 00:06:46, 101.67ft
Infiltration Runner Joint at 9 o'clock, within 8 inch

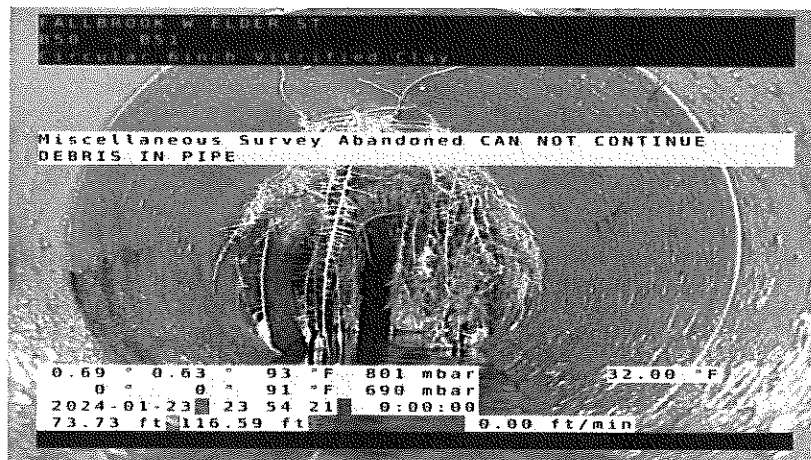


Section Pictures - 1/23/2024 - COL-P1PZ-GSMN-B50-B51

City FALLBROOK	Street W ELDER ST	Date 1/23/2024	Lateral Segment Reference COL-P1PZ-GSMN-B50-B51	Section No. 4
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COL-P1PZ-GSMN-B50-B51_0396279c-40f9-4eb3-9f1d-e419597f1f1d_20240123_135141_707.jpg,
00:07:25, 103.70ft
Crack Circumferential from 4 o'clock to 11 o'clock



COL-P1PZ-GSMN-B50-B51_9538f8a5-d0c0-409a-bb71-49054115946f_20240123_140243_1
18.jpg, 00:17:00, 116.59ft
Miscellaneous Survey Abandoned / CAN NOT CONTINUE DEBRIS IN PIPE



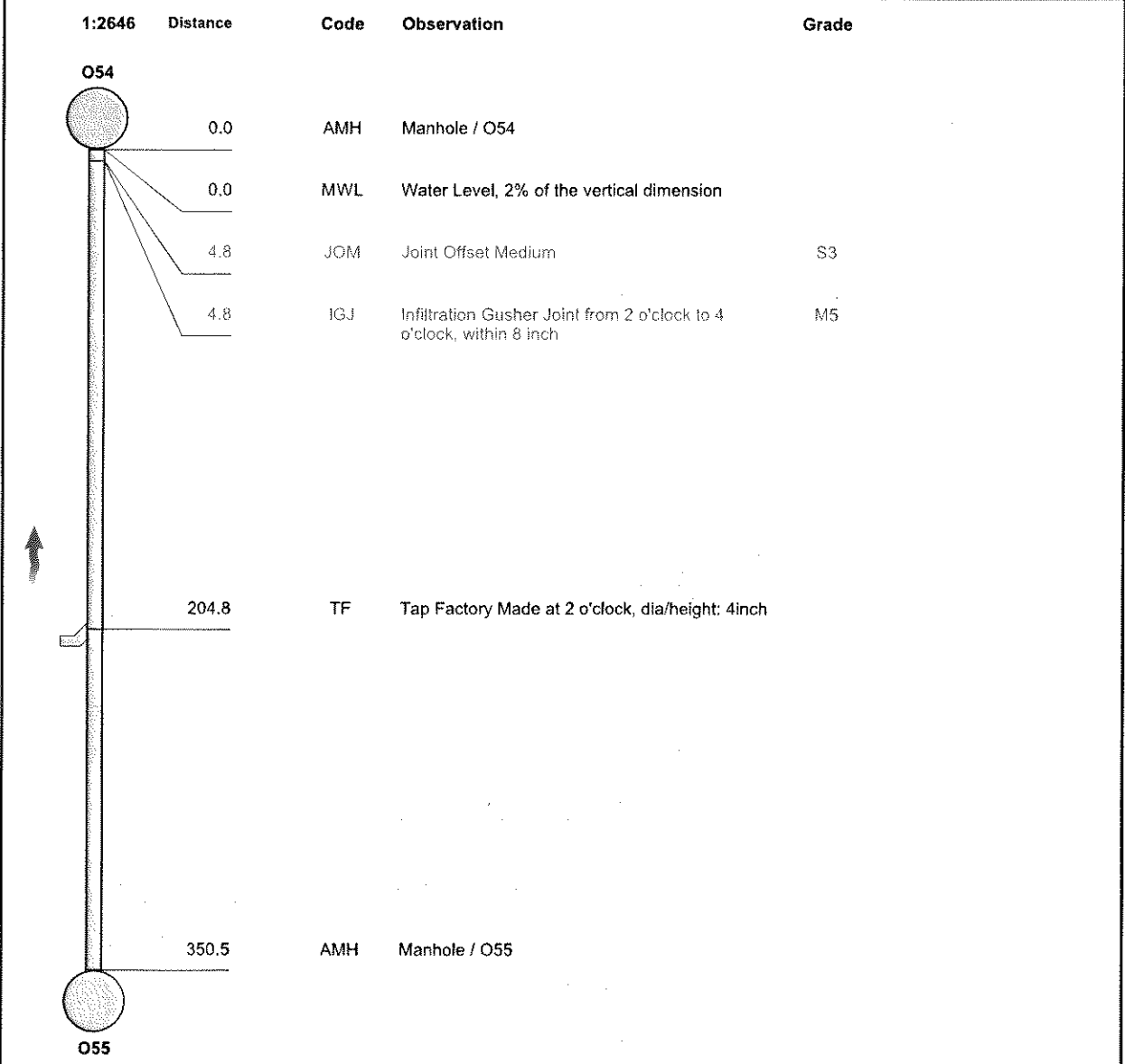
REF. Map C

Inspection report

Date: 5/21/2024	Work Order: 28646	Weather:	Surveyed By: Chad Wodarczyk	Certificate Number: p0033938-092021	Pipe Segment Ref.: COL-P2PZ-GSMN-O55-O54
Year laid:	Pre-cleaning: Light Cleaning	Direction: Upstream	Pipe Joint Length: 4.0	Total Length: 350.5'	Length Surveyed: 350.5'

City: FALLBROOK	Drainage Area:	Upstream MH: O55
Street: FALLBROOK	Media Label:	Up Rim to Invert:
Location Code:	Flow Control:	Downstream MH: O54
Location Details: O55-O54	Sheet Number:	Down Rim to Invert:
Pipe shape: Circular	Sewer Use: Sanitary Sewage Pipe	Total gallons used: 0.0
Pipe size: 8"	Sewer Category: SEC	Joints passed: 0
Pipe material: Ductile Iron	Purpose:	Joints failed: 0
Lining Method:	Owner:	

Additional Info:



QSR 3100	QMR 5100	QOR 5131	SPR 3.0	MPR 5.0	OPR 8.0	SPRI 3.0	MPRI 5.0	OPRI 4.0
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REF. Map D

Inspection report

Date: 6/12/2024	Work Order: 29404	Weather:	Surveyed By: Peter Velasco	Certificate Number: P0038704-072022	Pipe Segment Ref.: COL-P2PZ-GSMN-P51-P14
Year laid:	Pre-cleaning: Heavy Cleaning	Direction: Downstream	Pipe Joint Length: 20.0	Total Length: 216.2'	Length Surveyed: 216.2'

City: FALLBROOK	Drainage Area:	Upstream MH: P51
Street: CALMIN DR	Media Label:	Up Rim to Invert:
Location Code:	Flow Control:	Downstream MH: P14
Location Details: P51-P14	Sheet Number:	Down Rim to Invert:
Pipe shape: Circular	Sewer Use: Sanitary Sewage Pipe	Total gallons used: 0.0
Pipe size: 8 "	Sewer Category: SEC	Joints passed: 0
Pipe material: Vitrified Clay	Purpose:	Joints failed: 0
Lining Method:	Owner:	

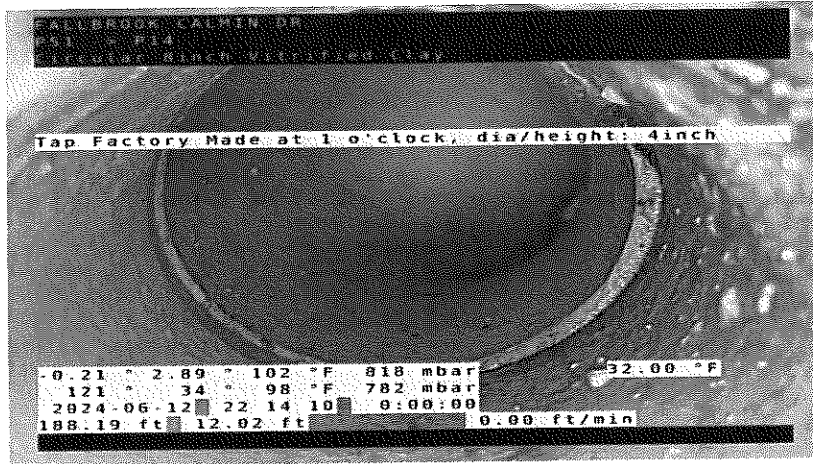
Additional Info:

1:1632	Distance	Code	Observation	Grade				
	0.0	AMH	Manhole / P14					
	0.0	MWL	Water Level, 1% of the vertical dimension	TF - 12.02				
	12.0	TF	Tap Factory Made at 1 o'clock, dia/height: 4inch					
	48.8	TF	Tap Factory Made at 1 o'clock, dia/height: 4inch	TF - 48.76				
				IGJ - 212.12				
	212.1	IGJ	Infiltration Gusher Joint from 9 o'clock to 11 o'clock, within 8 inch	M5				
	216.2	AMH	Manhole / P14					
				AMH - 216.20				
QSR 0000	QMR 5100	QOR 5100	SPR 0.0	MPR 5.0	OPR 5.0	SPRI 0.0	MPRI 5.0	OPRI 5.0

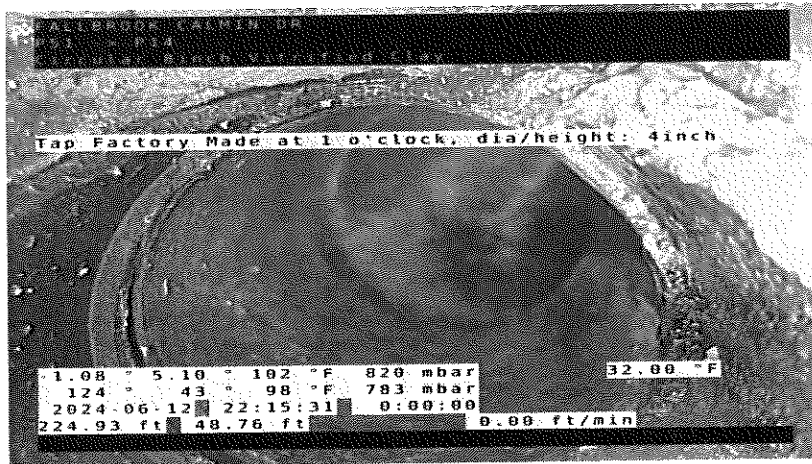


Section Pictures - 6/12/2024 - COL-P2PZ-GSMN-P51-P14

City FALLBROOK	Street CALMIN DR	Date 6/12/2024	Lateral Segment Reference COL-P2PZ-GSMN-P51-P14	Section No. 9
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COL-P2PZ-GSMN-P51-P14_c221f9a9-3082-4254-97e4-e624e2c018d5_20240612_132432_577.jpg, 00:00:55, 12.02ft
Tap Factory Made at 1 o'clock, dia/height: 4inch

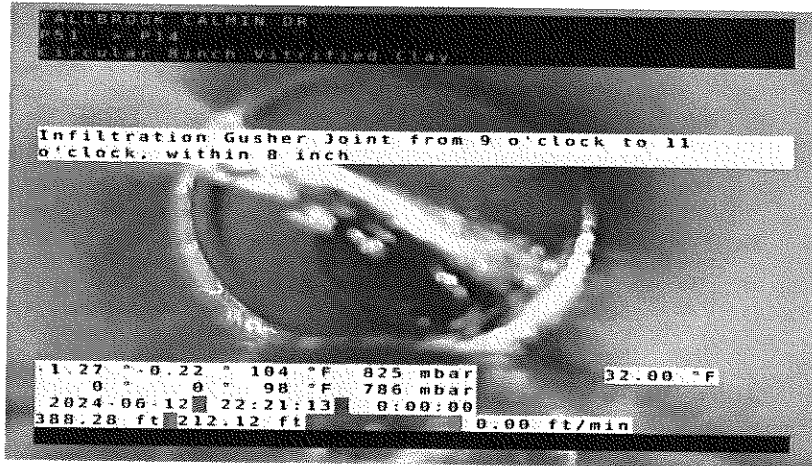


COL-P2PZ-GSMN-P51-P14_52a92177-bf29-4a59-b966-b8fd1a65fd99_20240612_132553_933.jpg, 00:02:02, 48.76ft
Tap Factory Made at 1 o'clock, dia/height: 4inch

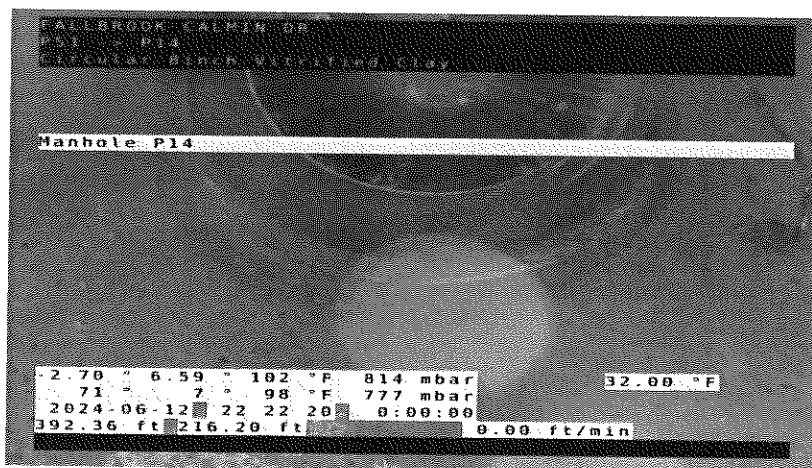


Section Pictures - 6/12/2024 - COL-P2PZ-GSMN-P51-P14

City FALLBROOK	Street CALMIN DR	Date 6/12/2024	Lateral Segment Reference COL-P2PZ-GSMN-P51-P14	Section No. 9
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COL-P2PZ-GSMN-P51-P14_04ca1400-aef1-47a3-9c04-9e8b7291975e_20240612_133136_071.jpg, 00:07:23, 212.12ft
Infiltration Gusher Joint from 9 o'clock to 11 o'clock, within 8 inch



COL-P2PZ-GSMN-P51-P14_a2ec0561-f714-4376-9b02-31c061738680_20240612_133243_347.jpg, 00:08:24, 216.20ft
Manhole / P14



Inspection report

Date: 9/25/2024	Work Order: 33707	Weather:	Surveyed By: Rene Ramos	Certificate Number: P0041470022023	Pipe Segment Ref.: COL-P2PZ-GSMN-J38-J36
Year laid:	Pre-cleaning: Not Known	Direction: Downstream	Pipe Joint Length: 4.0	Total Length: 297.8'	Length Surveyed: 297.8'

City: FALLBROOK	Drainage Area:	Upstream MH: J38
Street: S STAGE COACH LN	Media Label:	Up Rim to Invert:
Location Code:	Flow Control:	Downstream MH: J36
Location Details: J38-J36	Sheet Number:	Down Rim to Invert:
Pipe shape: Circular	Sewer Use: Sanitary Sewage Pipe	Total gallons used: 0.0
Pipe size: 6"	Sewer Category: SEC	Joints passed: 0
Pipe material: Vitrified Clay	Purpose:	Joints failed: 0
Lining Method:	Owner:	

Additional Info:

1:1785	Distance	Code	Observation	Grade
	0.0	AMH	Manhole / J38	
	0.0	MWL	Water Level, 1% of the vertical dimension	
	0.0	MGO	Miscellaneous General Observation / INFILTRATION IN M/H 2ND BARREL	 MGO - 0.00
	1.5	S01 SZ	Surface Other from 8 o'clock to 4 o'clock, Start / BUILD UP	 SZ - 1.49
	3.8	IWJ	Infiltration Weeper Joint from 12 o'clock to 12 o'clock, within 8 inch	 IWJ - 3.84
	31.4	F01 SZ	Surface Other from 8 o'clock to 4 o'clock, Finish / BUILD UP	
	35.3	S02 RPR	Point Repair Replacement, Start / V.C.P TO D.I.P	 RPR - 35.27
	43.6	S03 MWLS	Miscellaneous Water Level, Sag, 45% of the vertical dimension, Start	
	56.2	F02 RPR	Point Repair Replacement, Finish / V.C.P TO D.I.P	
	56.2	JOM	Joint Offset Medium	 JOM - 56.27
	72.1	F03 MWLS	Miscellaneous Water Level, Sag, 45% of the vertical dimension, Finish	
	72.1	S04 MWLS	Miscellaneous Water Level, Sag, 20% of the vertical dimension, Start	
	100.2	F04 MWLS	Miscellaneous Water Level, Sag, 20% of the vertical dimension, Finish	
	145.7	S05 MWLS	Miscellaneous Water Level, Sag, 20% of the vertical dimension, Start	
	159.6	F05 MWLS	Miscellaneous Water Level, Sag, 20% of the vertical dimension, Finish	 MWLS - 43.63
	223.4	S06 MWLS	Miscellaneous Water Level, Sag, 35% of the vertical dimension, Start	



Inspection report

Date: 9/25/2024	Work Order: 33707	Weather:	Surveyed By: Rene Ramos	Certificate Number: P0041470022023	Pipe Segment Ref.: COL-P2PZ-GSMN-J38-J36
Year laid:	Pre-cleaning: Not Known	Direction: Downstream	Pipe Joint Length: 4.0	Total Length: 297.8'	Length Surveyed: 297.8'

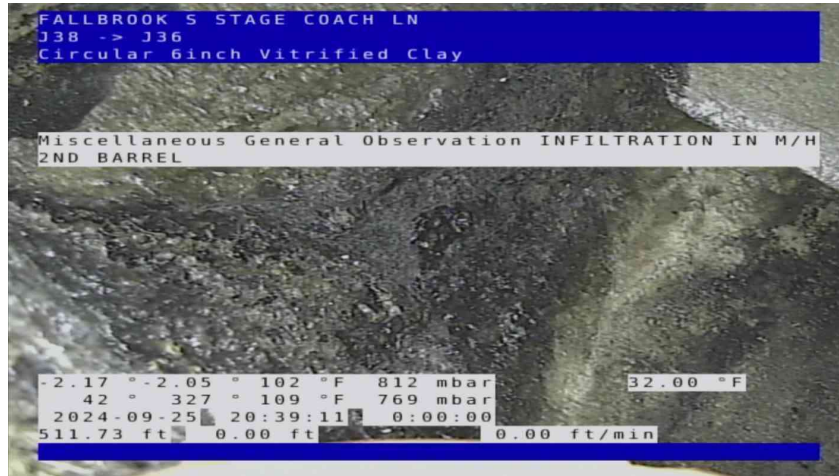
1:1785	Distance	Code	Observation	Grade		
	249.6	F06	MWLS	Miscellaneous Water Level, Sag, 35% of the vertical dimension, Finish	S3	
	252.0	IWJ	IWJ	Infiltration Weeper Joint from 12 o'clock to 12 o'clock, within 8 inch	M2	
	274.0	S07	MWLS	Miscellaneous Water Level, Sag, 50% of the vertical dimension, Start		JOM - 56.22
	292.7	IWJ	IWJ	Infiltration Weeper Joint from 12 o'clock to 12 o'clock, within 8 inch	M2	
	296.3	IWJ	IWJ	Infiltration Weeper Joint from 12 o'clock to 12 o'clock, within 8 inch	M2	
	296.3	F07	MWLS	Miscellaneous Water Level, Sag, 50% of the vertical dimension, Finish	S3	MWLS - 72.08
	297.8	AMH	AMH	Manhole / J36		
						MWLS - 145.74
						MWLS - 223.38
						IWJ - 252.04
						MWLS - 274.01
						IWJ - 292.67
						AMH - 297.82

QSR	QMR	QOR	SPR	MPR	OPR	SPRI	MPRI	OPRI
3B29	2400	3B2A	66.0	8.0	74.0	2.6	2.0	2.6

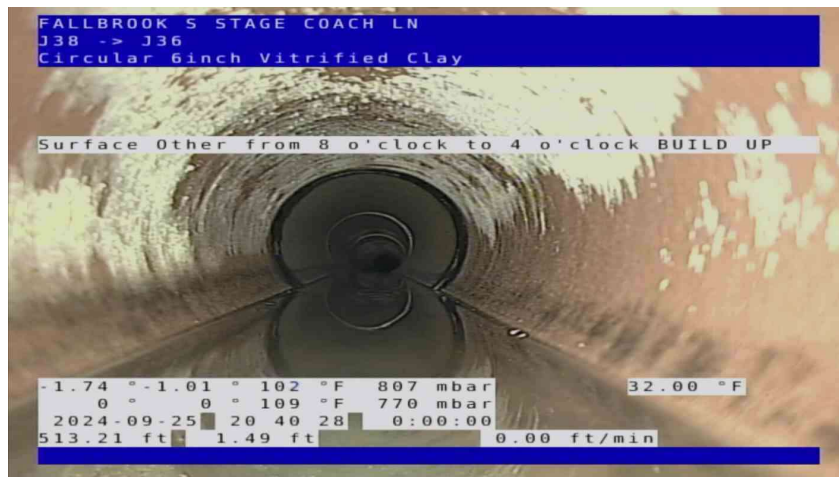


Section Pictures - 9/25/2024 - COL-P2PZ-GSMN-J38-J36

City FALLBROOK	Street S STAGE COACH LN	Date 9/25/2024	Lateral Segment Reference COL-P2PZ-GSMN-J38-J36	Section No. 81
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COL-P2PZ-GSMN-J38-J36_ede1e4ec-07cc-4fa5-bc58-83c96894ec91_20240925_115038_515.jpg, 00:00:20, 0.00ft
Miscellaneous General Observation / INFILTRATION IN M/H 2ND BARREL

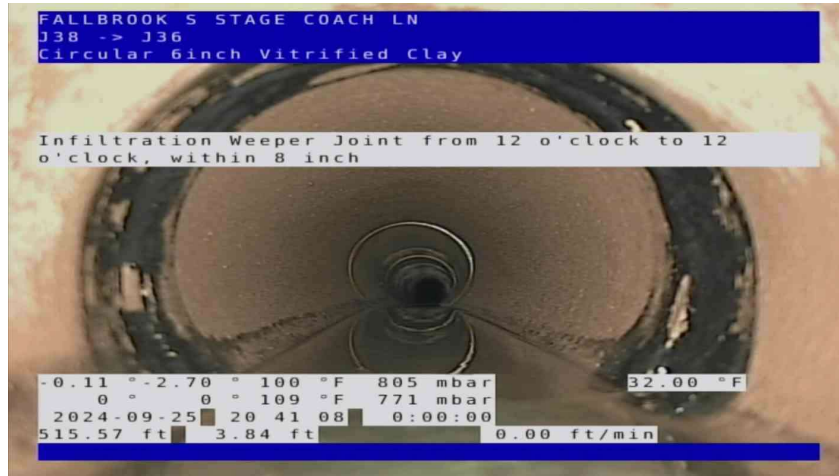


COL-P2PZ-GSMN-J38-J36_1d3835ad-6095-4d8f-b311-5f2178dfa8a2_20240925_115156_073.jpg, 00:00:46, 1.49ft
Surface Other from 8 o'clock to 4 o'clock, Start / BUILD UP



Section Pictures - 9/25/2024 - COL-P2PZ-GSMN-J38-J36

City FALLBROOK	Street S STAGE COACH LN	Date 9/25/2024	Lateral Segment Reference COL-P2PZ-GSMN-J38-J36	Section No. 81
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COL-P2PZ-GSMN-J38-J36_00a874ee-9c59-4816-9b58-250485c81ff1_20240925_115235_505.jpg,
00:00:57, 3.84ft
Infiltration Weeper Joint from 12 o'clock to 12 o'clock, within 8 inch

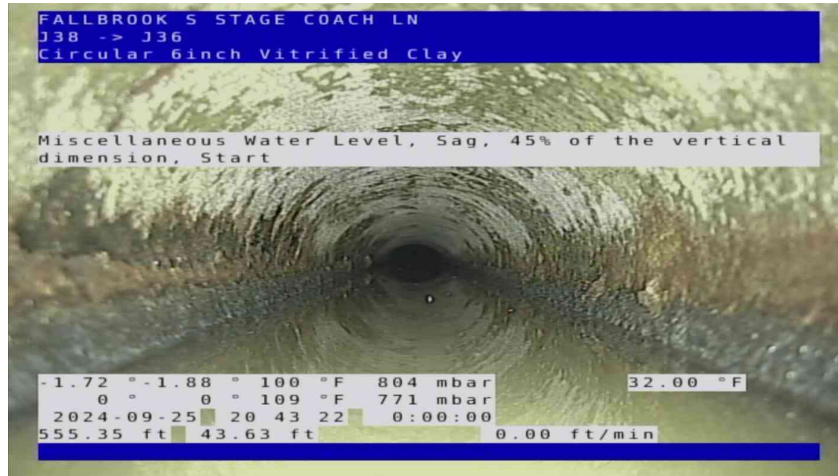


COL-P2PZ-GSMN-J38-J36_23aebbc7-0c66-4c7f-a22b-586c9cdc2145_20240925_115418_06
2.jpg, 00:01:58, 35.27ft
Point Repair Replacement, Start / V.C.P TO D.I.P



Section Pictures - 9/25/2024 - COL-P2PZ-GSMN-J38-J36

City FALLBROOK	Street S STAGE COACH LN	Date 9/25/2024	Lateral Segment Reference COL-P2PZ-GSMN-J38-J36	Section No. 81
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COL-P2PZ-GSMN-J38-J36_0aea78ef-6c8d-4d40-8901-4e9f4f1a1638_20240925_115449_591.jpg, 00:02:21, 43.63ft
Miscellaneous Water Level, Sag, 45% of the vertical dimension, Start

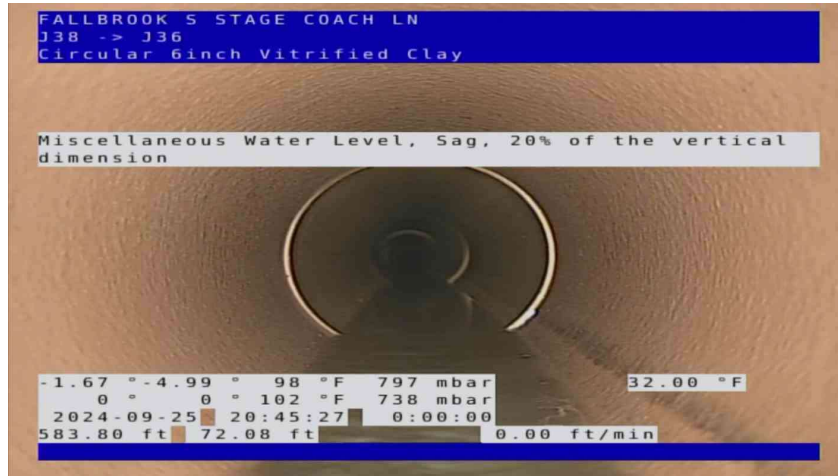


COL-P2PZ-GSMN-J38-J36_70bbd1a3-fd2b-4296-bc17-9d303d25b5c9_20240925_115601_248.jpg, 00:03:24, 56.22ft
Joint Offset Medium



Section Pictures - 9/25/2024 - COL-P2PZ-GSMN-J38-J36

City FALLBROOK	Street S STAGE COACH LN	Date 9/25/2024	Lateral Segment Reference COL-P2PZ-GSMN-J38-J36	Section No. 81
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COL-P2PZ-GSMN-J38-J36_26c522ba-1ad0-4cdb-b425-1da31026bed8_20240925_115654_455.jpg, 00:04:01, 72.08ft
Miscellaneous Water Level, Sag, 20% of the vertical dimension, Start



COL-P2PZ-GSMN-J38-J36_db9685e3-6cdb-4b8d-a2a6-d1e8b8504aab_20240925_120001_911.jpg, 00:06:52, 145.74ft
Miscellaneous Water Level, Sag, 20% of the vertical dimension, Start

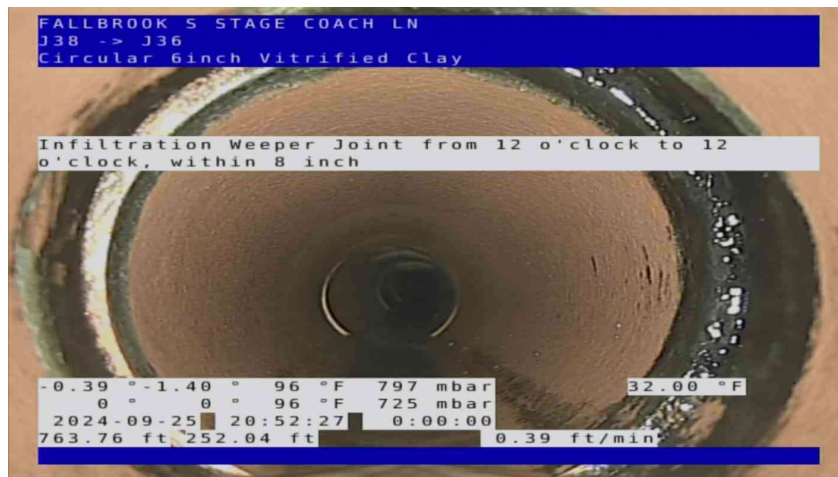


Section Pictures - 9/25/2024 - COL-P2PZ-GSMN-J38-J36

City FALLBROOK	Street S STAGE COACH LN	Date 9/25/2024	Lateral Segment Reference COL-P2PZ-GSMN-J38-J36	Section No. 81
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COL-P2PZ-GSMN-J38-J36_948d23d3-3d8b-43a8-9608-af007eb66792_20240925_120241_411.jpg, 00:09:12, 223.38ft
Miscellaneous Water Level, Sag, 35% of the vertical dimension, Start



COL-P2PZ-GSMN-J38-J36_44fadc49-f7ec-4086-9e6e-a2c7c55503e2_20240925_120354_960.jpg, 00:10:04, 252.04ft
Infiltration Weeper Joint from 12 o'clock to 12 o'clock, within 8 inch

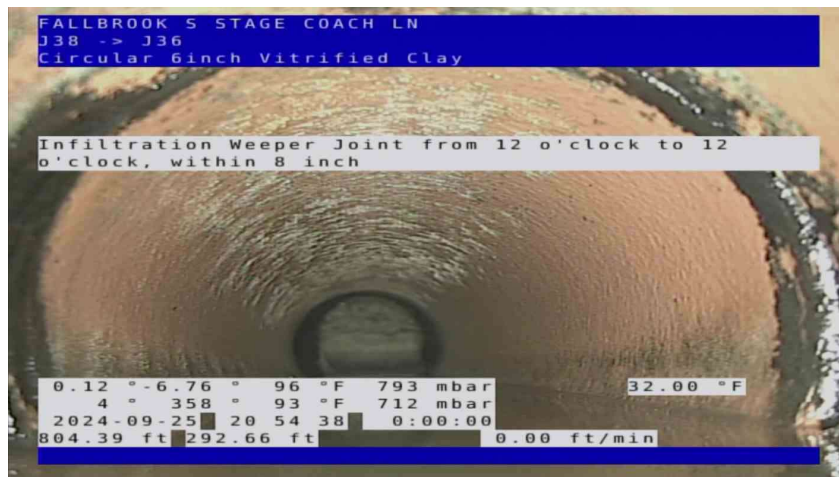


Section Pictures - 9/25/2024 - COL-P2PZ-GSMN-J38-J36

City FALLBROOK	Street S STAGE COACH LN	Date 9/25/2024	Lateral Segment Reference COL-P2PZ-GSMN-J38-J36	Section No. 81
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COL-P2PZ-GSMN-J38-J36_658ccc0b-cf2e-4e19-9929-a8dd1c613cf_20240925_120457_540.jpg, 00:10:46, 274.01ft
Miscellaneous Water Level, Sag, 50% of the vertical dimension, Start



COL-P2PZ-GSMN-J38-J36_87775688-2e0c-4c78-a4ac-7d0c1c2aa9b2_20240925_120606_223.jpg, 00:11:50, 292.67ft
Infiltration Weeper Joint from 12 o'clock to 12 o'clock, within 8 inch



Section Pictures - 9/25/2024 - COL-P2PZ-GSMN-J38-J36

City FALLBROOK	Street S STAGE COACH LN	Date 9/25/2024	Lateral Segment Reference COL-P2PZ-GSMN-J38-J36	Section No. 81
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COL-P2PZ-GSMN-J38-J36_8371e5b5-6237-48eb-9a16-521a20883ec2_20240925_120733_402.jpg, 00:12:56, 297.82ft
Manhole / J36



Inspection report

Date: 2/7/2024	Work Order: 25057	Weather:	Surveyed By: Chad Wodarczyk	Certificate Number: p0033938-092021	Pipe Segment Ref.: COL-P2PZ-GSMN-J38-J36
Year laid:	Pre-cleaning: Not Known	Direction: Downstream	Pipe Joint Length: 4.0	Total Length: 297.8'	Length Surveyed: 47.8'

City: FALLBROOK	Drainage Area:	Upstream MH: J38
Street: S STAGE COACH LN	Media Label:	Up Rim to Invert:
Location Code:	Flow Control:	Downstream MH: J36
Location Details: J38-J36	Sheet Number:	Down Rim to Invert:
Pipe shape: Circular	Sewer Use: Sanitary Sewage Pipe	Total gallons used: 0.0
Pipe size: 6"	Sewer Category: SEC	Joints passed: 0
Pipe material: Vitrified Clay	Purpose:	Joints failed: 0
Lining Method:	Owner:	

Additional Info:

1:2248	Distance	Code	Observation	Grade
	0.0	AMH	Manhole / J38	
	0.0	MWL	Water Level, 15% of the vertical dimension	MWL - 0.00
	4.7	IDJ	Infiltration Dripper Joint from 9 o'clock to 3 o'clock, within 8 inch	M3
	36.6	MMC	Miscellaneous Material Change / VCP TO DIP	
	47.8	MSA	Miscellaneous Survey Abandoned / COULD NOT PROCEED. TOO MUCH GRIT IN PIPE	MMC - 36.59
	297.8		End of pipe	

QSR	QMR	QOR	SPR	MPR	OPR	SPRI	MPRI	OPRI
0000	3100	3100	0.0	3.0	3.0	0.0	3.0	3.0



Section Pictures - 2/7/2024 - COL-P2PZ-GSMN-J38-J36

City FALLBROOK	Street S STAGE COACH LN	Date 2/7/2024	Lateral Segment Reference COL-P2PZ-GSMN-J38-J36	Section No. 81
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COL-P2PZ-GSMN-J38-J36_bb5071eb-85d0-488e-8996-191b76f40c15_20240207_092152_920.jpg, 00:00:02, 0.00ft
Water Level, 15% of the vertical dimension



COL-P2PZ-GSMN-J38-J36_53f5c61a-9842-45c2-ba0b-f57b332dc318_20240207_092457_121.jpg, 00:04:05, 36.59ft
Miscellaneous Material Change / VCP TO DIP



Inspection report

Date: 2/20/2024	Work Order: 25478	Weather:	Surveyed By: Peter Velasco	Certificate Number: P0038704-072022	Pipe Segment Ref.: COL-P2PZ-GSMN-J12-J10
Year laid:	Pre-cleaning: Not Known	Direction: Downstream	Pipe Joint Length: 4.0	Total Length: 136.7'	Length Surveyed: 136.7'

City: Fallbrook	Drainage Area:	Upstream MH: J12
Street: S STAGE COACH LN	Media Label:	Up Rim to Invert:
Location Code:	Flow Control:	Downstream MH: J10
Location Details: OTLS	Sheet Number:	Down Rim to Invert:
Pipe shape: Circular	Sewer Use: Sanitary Sewage Pipe	Total gallons used: 0.0
Pipe size: 10"	Sewer Category: SEC	Joints passed: 0
Pipe material: Vitrified Clay	Purpose:	Joints failed: 0
Lining Method:	Owner:	

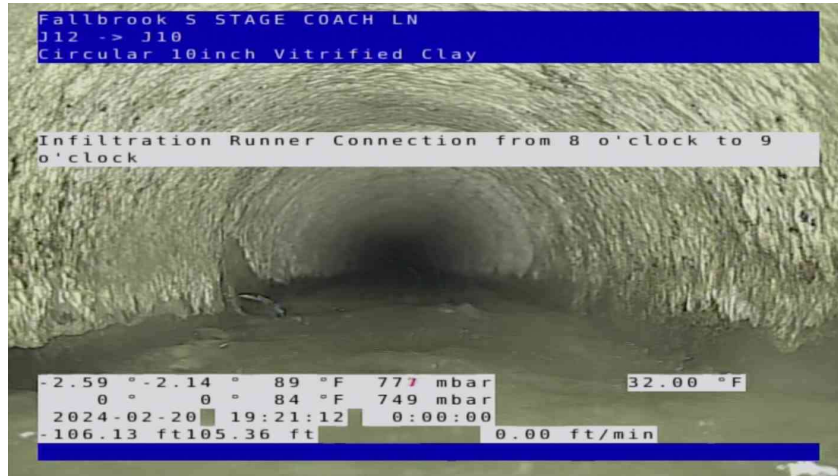
Additional Info:

1:1032	Distance	Code	Observation	Grade				
	0.0	AMH	Manhole / J12	 IRC - 105.36				
	0.0	MWL	Water Level, 15% of the vertical dimension					
	105.4	IRC	Infiltration Runner Connection from 8 o'clock to 9 o'clock	M4				
	136.7	AMH	Manhole / J10	 AMH - 136.69				
QSR	QMR	QOR	SPR	MPR	OPR	SPRI	MPRI	OPRI
0000	4100	4100	0.0	4.0	4.0	0.0	4.0	4.0



Section Pictures - 2/20/2024 - COL-P2PZ-GSMN-J12-J10

City Fallbrook	Street S STAGE COACH LN	Date 2/20/2024	Lateral Segment Reference COL-P2PZ-GSMN-J12-J10	Section No. 296
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COL-P2PZ-GSMN-J12-J10_4dca7644-a3f5-443f-b18c-f23d796a388f_20240220_092959_998.jpg,
00:02:12, 105.36ft
Infiltration Runner Connection from 8 o'clock to 9 o'clock



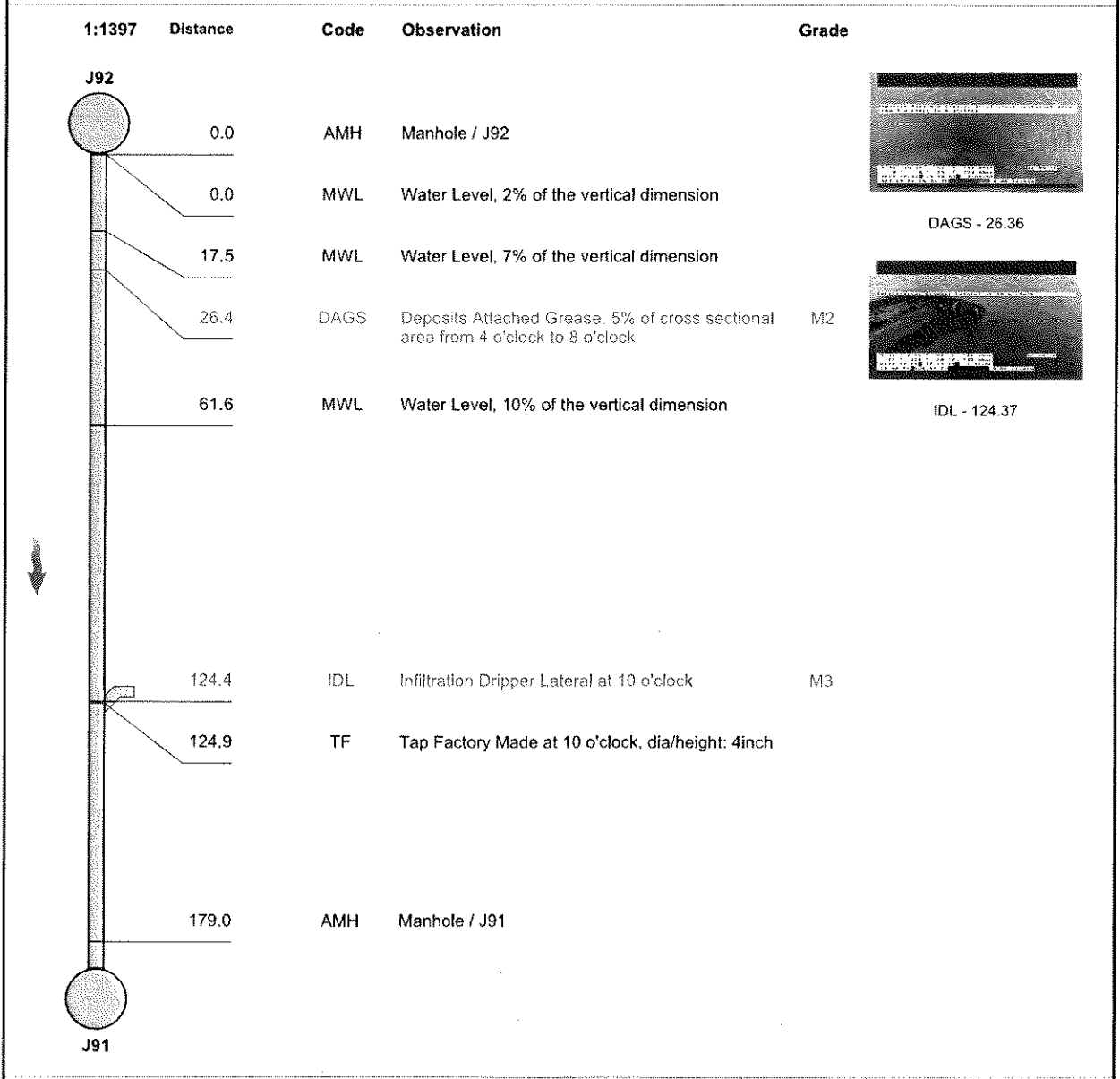
COL-P2PZ-GSMN-J12-J10_7ff1b602-baf4-4975-80a2-10ba69e419ad_20240220_093113_282.jpg,
00:03:18, 136.69ft
Manhole / J10

Inspection report

Date: 2/22/2024	Work Order: 25618	Weather:	Surveyed By: Jorge Ibarra	Certificate Number: P0041651-032023	Pipe Segment Ref.: COL-P2PZ-GSMN-J92-J91
Year laid:	Pre-cleaning: Not Known	Direction: Downstream	Pipe Joint Length: 4.0	Total Length: 185.0'	Length Surveyed: 179.0'

City: FALLBROOK	Drainage Area:	Upstream MH: J92
Street: WINTER HAVEN RD	Media Label:	Up Rim to Invert:
Location Code:	Flow Control:	Downstream MH: J91
Location Details: J92-J91	Sheet Number:	Down Rim to Invert:
Pipe shape: Circular	Sewer Use: Sanitary Sewage Pipe	Total gallons used: 0.0
Pipe size: 6"	Sewer Category: SEC	Joints passed: 0
Pipe material: Vitrified Clay	Purpose:	Joints failed: 0
Lining Method:	Owner:	

Additional Info:

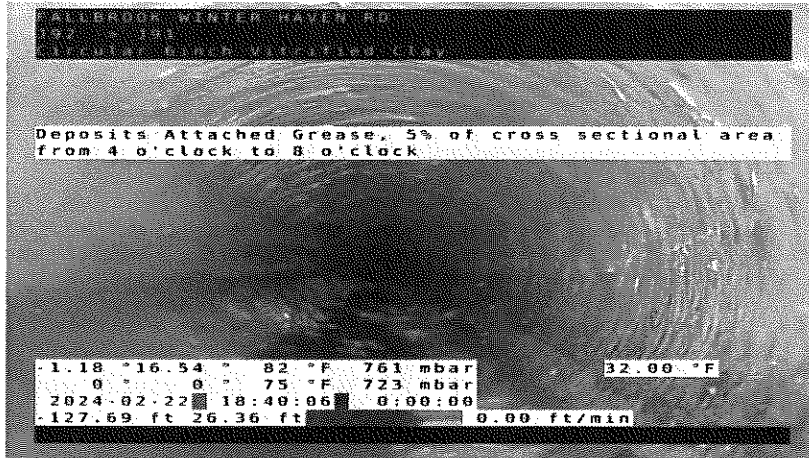


QSR	QMR	QOR	SPR	MPR	OPR	SPRI	MPRI	OPRI
0000	3121	3121	0.0	5.0	5.0	0.0	2.5	2.5

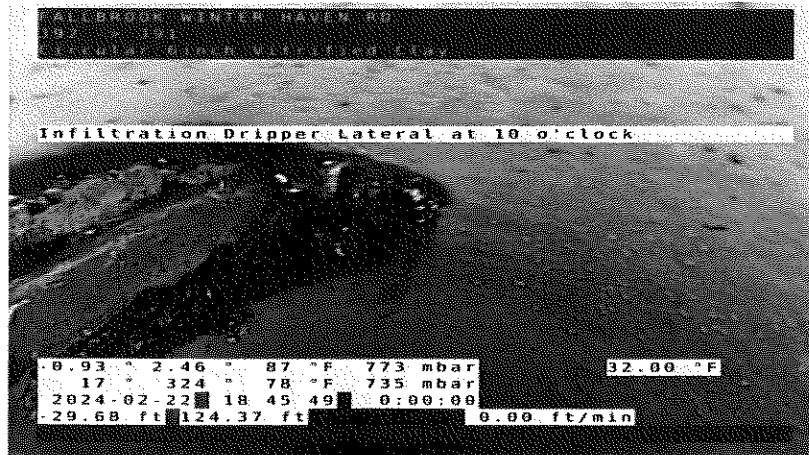


Section Pictures - 2/22/2024 - COL-P2PZ-GSMN-J92-J91

City	Street	Date	Lateral Segment Reference	Section No.
FALLBROOK	WINTER HAVEN RD	2/22/2024	COL-P2PZ-GSMN-J92-J91	2



COL-P2PZ-GSMN-J92-J91_c86fd4f5-5103-4c22-91dd-a5cc58cc42a2_20240222_084857_544.jpg,
00:02:30, 26.36ft
Deposits Attached Grease, 5% of cross sectional area from 4 o'clock to 8 o'clock



COL-P2PZ-GSMN-J92-J91_eb0fd034-32cc-4fb9-9874-926fa544ca9d_20240222_085440_293.jpg,
00:07:23, 124.37ft
Infiltration Dripper Lateral at 10 o'clock



WinCan

REF. Map G

Inspection report

Date: 2/22/2024	Work Order: 25620	Weather:	Surveyed By: Jorge Ibarra	Certificate Number: P0041651-032023	Pipe Segment Ref.: COL-P2PZ-GSMN-J115-J92
Year laid:	Pre-cleaning: Not Known	Direction: Upstream	Pipe Joint Length: 4.0	Total Length: 310.1'	Length Surveyed: 265.6'

City: FALLBROOK	Drainage Area:	Upstream MH: J115
Street: WINTER HAVEN RD	Media Label:	Up Rim to Invert:
Location Code:	Flow Control:	Downstream MH: J92
Location Details: J115-J92	Sheet Number:	Down Rim to Invert:
Pipe shape: Circular	Sewer Use: Sanitary Sewage Pipe	Total gallons used: 0.0
Pipe size: 6"	Sewer Category: SEC	Joints passed: 0
Pipe material: Vitrified Clay	Purpose:	Joints failed: 0
Lining Method:	Owner:	

Additional Info:

1:2341	Distance	Code	Observation	Grade
J92				
	0.0	AMH	Manhole / J92	
	0.0	MWL	Water Level, 2% of the vertical dimension	
	16.9	JOM	Joint Offset Medium	S3
	24.6	JOM	Joint Offset Medium	S3
	118.1	JOM	Joint Offset Medium	S3
	146.1	JOM	Joint Offset Medium	S3
	146.1	IDJ	Infiltration Dripper Joint from 6 o'clock to 9 o'clock, within 8 inch	M3
	215.2	JOM	Joint Offset Medium	S3
	259.2	RFL	Roots Fine Lateral from 4 o'clock to 8 o'clock	M1
	261.2	TF	Tap Factory Made at 10 o'clock, dia/height: 4inch	
	265.6	AMH	Manhole / J115	
J115				

QSR	QMR	QOR	SPR	MPR	OPR	SPRI	MPRI	OPRI
3500	3111	3611	15.0	4.0	19.0	3.0	2.0	2.7