JURUPA COMMUNITY SERVICES DISTRICT
RIVERSIDE, CALIFORNIA

jurupa
COMMUNITY SERVICES DISTRICT
Proudly serving Jurupa Valley and Eastvale

VOLUME I

BIDDING DOCUMENTS, CONTRACT, GENERAL CONDITIONS, BASIC SPECIFICATIONS AND SPECIAL REQUIREMENTS

FOR

ANNUAL WATERLINE REPLACEMENT PROJECT 44TH STREET AREA JCSD P.N. C245118 AND GLENROY CT INTERTIE WATER PLAN JCSD P.N. M221003

January 2025

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* The sections of this Specification are divided by inserts. A more detailed Table of Contents for the Proposal Documents, Contract, General Conditions, Special Requirements, Basic Specifications, Technical Specifications, and other sections are included at the beginning of those portions of the Specification.

NOTICE INVITING BIDS

JURUPA COMMUNITY SERVICES DISTRICT

NOTICE INVITING BIDS

FOR

ANNUAL WATERLINE REPLACEMENT PROJECT

44TH STREET AREA

JCSD P.N. C245118

AND

GLENROY CT INTERTIE WATER PLAN

JCSD P.N. M221003

Prospective bidders are hereby notified that the Jurupa Community Services District, California (District) will receive sealed bid proposals for the Jurupa Community Services District Annual Waterline Replacement Project – 44th Street Area and Glenroy Court Intertie. The projects consist of furnishing, installing, testing and making operational approximately 5,045 L.F. of 8-inch and 4,020 L.F. of 12-inch diameter C-909 PVC waterline, installing approximately 35 L.F. of CML/C, removing approximately 2,430 L.F. of existing 8-inch diameter VCP sewerline and furnishing, installing, testing and making operational approximately 2,430 L.F. of 8-inch diameter SDR-35 PVC sewerline, removing and replacing existing sewer manholes, and rehabilitating existing sewer manholes; make all connections to existing waterlines, all appurtenances, and all associated paving, trenching, and surface restoration; abandonment of existing waterlines, installation of new water service and meter box; import materials; excavation, backfilling, compaction, paving, traffic control and all other work and materials to complete the contract work. The successful Contractor shall furnish all labor, material, transportation, tools, supplies, plant, equipment, and appurtenances, unless specifically excepted, for the satisfactory completion of the entire contract work, in accordance with the Specifications and Drawings.

Such bid proposals will be received until **10:00 a.m. on Tuesday, February 4, 2025**, VIA EMAIL ONLY at which time and place such bids will be publicly opened and read. DO NOT DELIVER BIDS TO DISTRICT OFFICES. Award, if made, will be made to one Bidder. Bids received after this time will be returned unopened.

Questions from prospective bidders affecting interpretation or corrections related to the Plans and Specifications received after 5:00 p.m. on **Tuesday, January 28, 2025** will not be answered.

The Engineer's Estimated Construction Cost is **$6,500,000.** All work under this contract shall be completed and operational within **Three Hundred and Fifty (350) calendar days** from the date District gives written "Notice of Award" to the Contractor.

Each proposal must be accompanied by: (a) cash; (b) a certified or cashier's check made payable to the "Jurupa Community Services District"; (c) equivalent cash or securities pursuant to Section 995.710 of the Code of Civil Procedure, or (d) a bid bond payable to "Jurupa Community Services District" executed by the bidder as principal and surety as obligor in an amount equal to 10% of the maximum amount of the bid. Personal sureties and unregistered surety companies are unacceptable. The surety insurer shall be a California admitted surety insurer, as defined in Code of Civil Procedure Section 995.120. The cash, check, equivalent cash or securities, or bid bond shall be given as a guarantee that the bidder, if an award is made to the bidder in accordance with the terms of said bidder's proposal, 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 the District and the District may award the Contract to the next lowest responsive, responsible bidder, or may call for new bids; the bidder shall also:

a. Execute a contract in the District's standard form together with the Labor Code certification thereon. Said contract shall incorporate by reference the Notice Inviting Bids; the Proposal; Bidder's Plan for Construction; Bidder's Statement of Experience, Financial Condition and References; Bidding Sheet; General Conditions; Special Requirements; Basic Specifications; Technical Specifications; and Drawings;

b. Furnish a performance bond as required thereby with a corporate surety or sureties satisfactory to the District, or equivalent cash or securities for the faithful performance of the said contract. Personal sureties and unregistered surety companies are unacceptable. The surety insurer shall be a California admitted surety insurer, as defined in Code of Civil Procedure Section 995.120. Said performance bond shall be for an amount of not less than 100% of the total bid price;

c. Furnish also a labor and materials payment bond with a corporate surety or sureties satisfactory to the District. Personal sureties and unregistered surety companies are unacceptable. The surety insurer shall be a California admitted surety insurer, as defined in Code of Civil Procedure Section

995.120. Said bond shall be for an amount of not less than 100% of the total bid price;

d. Furnish certificates of insurance and endorsements, evidencing that all insurance coverage required by the Contract has been secured.

All contract construction shall be by an organization which has had successful experience in the construction of facilities of the TYPE & SIZE SPECIFIED, OR COMPARABLE. 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). If the bidder is a specialty contractor, the bidder is alerted to the requirements of Business and Professions Code Section 7059. The District requires the Contractor to self-perform fifty-five percent (55%) of the work bid upon.

The District has obtained from the Director of the Department of Industrial Relations the general prevailing rate of per diem wages and the general rate for holiday and overtime work in the locality in which the work is to be performed for each craft, classification, or type of workman needed to execute the contract. The Contractor shall obtain a copy of the prevailing rates of per diem wages 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 the District's principal office located at the address set forth in the second paragraph of this Notice Inviting Bids. Please note that the prevailing wage for this project shall be based on those wages in effect at the time of bid opening.

Contractor shall make copies of the prevailing rates of per diem wages for each craft, classification or type of worker needed to perform the work available to interested parties upon request, and shall post copies at the Contractor's principal place of business and at the job site. The successful bidder and all subcontractor(s) under the successful bidder(option to delete "successful bidder" and add "Contractor", SL / EK to decide), 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. Contractor shall defend, indemnify and hold the 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 alleged failure to comply with the prevailing wage laws. The Contractor shall forfeit, as a penalty to the District, $200.00 for each calendar day or portion thereof for each workman paid less than the said stipulated prevailing rates for any work done under the contract by the

Contractor or by any subcontractor under the Contractor in violation of the California Labor Code.

This Project is subject to compliance monitoring and enforcement by the Department of Industrial Relations. 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 Bidder's and its subcontractors' current registration with the Department of Industrial Relations. If awarded a Contract, the Bidder and its subcontractors of every tier shall maintain active registration with the Department of Industrial Relations for the duration of the Project. It shall be the Bidder's sole responsibility to evaluate and include the cost of complying with all labor compliance requirements

If the bidder's maximum bid is $1,000,000 or more, each bidder shall submit the certification required by the Iran Contracting Act of 2010 as required by Public Contract Code section 2204.

Contractor may, at the Contractor's sole cost and expense, substitute securities equivalent to any monies withheld by the District to ensure performance under the Contract. Such securities shall be deposited with the District, or with a state or federally charted bank as escrow agent, who shall pay such monies to the Contractor upon satisfactory completion of the Contract. The Contractor shall be the beneficiary of any securities substituted for monies withheld and shall receive any accrued interest thereon. Securities eligible for substitution shall include those listed in Public Contract Code Section 22300. Please refer to applicable portions of Section 45 of the General Conditions and the Escrow Agreement for Security Deposits In Lieu of Performance Retention included with the Contract Documents.

The District shall award the Contract for the work to the lowest responsive, responsible bidder. The District reserves the right to reject any or all bids, to waive any irregularities or informalities in any bids or in the bidding process. No bidder may withdraw their bid for 90 days after bid opening.

THE BIDDERS ARE URGED TO PAY PARTICULAR ATTENTION TO BIDDING DOCUMENTS SECTION A "INSTRUCTION TO BIDDERS", ITEM 2 "COMPLETION OF BID PROPOSAL AND SUPPORTING DOCUMENTS."

Complete electronic (CD) copies of all documents and specifications with which all bid items must comply will be available from Jurupa Community Services District. Digital

copies of the bid documents are only available for download at the following website: **https://www.jcsd.us/business/contracts-bid-opportunities**

It is the responsibility of each prospective bidder to check the website on a daily basis through the close of bids for any applicable addenda or updates and to furnish the Jurupa Community Services District with current prospective bidder contact information for JCSD to update the Plan Holder List on the website. Prospective bidders are encouraged to submit a completed and signed Plan Holder's Information Form to JCSD. Addenda and other updates will be posted to the posting website by JCSD.

The Bidder shall examine carefully the site of the proposed contract work. The submission of a bid proposal shall be conclusive evidence that the Bidder has investigated the project site and is satisfied with the conditions to be encountered.

There will be no specific site tour/inspection by the District for the project.

Please contact the District's Project Manager, Ashish Marwah, at 951-685-7434, ext. 147, or e-mail JCSDbids@JCSD.US for questions pertaining to the project.

Dated: January 10, 2025

/s/ Eddie Rhee
Engineering Manager

BIDDING INSTRUCTIONS

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1. Qualified Bidders

Bidders are advised that in selecting a Contractor, the Owner shall award the Contract for the work to the lowest responsive, responsible bidder. The Owner reserves the right to reject any or all bids or to waive any irregularities or informalities in any bids or in the bidding process. The use of substitute bid forms other than clear and correct photocopies of those provided by the Owner will not be permitted. The Owner requires that each bidder be properly licensed and sign and submit with their proposal the attached statement of their experience, current financial condition, and references. Please note that similar information is required in the attached Bidder's Plan for Construction with respect to any proposed subcontractor. **Prospective bidders are encouraged to submit completed and signed Plan Holder's Information Form. Failure to provide completed and signed Plan Holder's Information Form may result in late / no notification. Addenda and other updates will be issued via facsimile, email, District website or any combination thereof, and only to prospective bidders that provide the required information.**

2. Completion of Bid Proposal and Supporting Documents

Each bidder shall complete each blank of each page of the Bid Proposal and supporting documents including Bidder's Plan for Construction, Bidder's Statement of Financial Conditions and References, and Bidding Sheet. 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. Deviations in the bid form may result in the bid being deemed non-responsive.

The Owner may in its discretion reject any bid to which the bidder has added conditions, limitations, provisions or any interlineations or alterations. The Owner will not consider alternative proposals unless they are called for by these instructions or the supplemental instructions appearing in the bidding documents themselves.

3. Omissions and Discrepancies

Should a bidder find discrepancies in, or omissions from the Special Requirements, Basic Specifications, Technical Specifications, Drawings, or other documents bound herein, or should bidder be in doubt as to their meaning, bidder should immediately notify the Owner by submission of a written request for an interpretation or correction. Such submission, if any, must be sent to the District's Project Manager by emailing JCSDbids@JCSD.US. The Owner may post to the website a written instruction to all bidders in the form of an addendum.

4. Signature and Seal

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 the bid proposal is made by an individual, it shall be signed and their full name and their address shall be given; if it is made by a co-partnership, it shall be signed with the co-partnership name by one of the partners, who shall sign their own name and, in addition, the name and address of each partner shall be given; if it is made by a corporation, the name of the corporation shall be signed by its duly authorized officer, or officers, attested by the corporation seal, and the names and titles of all current officers of the corporation shall be given.

5. Bid Proposal Guaranty

Each bid shall be accompanied by: (a) cash; (b) a certified or cashier's check made payable to the "Jurupa Community Services District"; (c) equivalent cash or authorized securities pursuant to Section 995.710 of the Code of Civil Procedure or (d) a bid bond payable to "Jurupa Community Services 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. Each bid proposal shall be accompanied by a certified or cashier's check, bid bond on the form provided by Owner, or equivalent cash or authorized securities, for an amount of not less than 10 percent of the amount named in the Bidding Sheet. 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 the Owner and the Owner may award the Contract to the next lowest responsive, responsible bidder, or may call for new bids

Said check or bond shall be made payable to the Owner and shall be given as a guarantee that the bidder will enter into the contract described in the Notice Inviting Bids herein if awarded the work. By submitting a proposal, each bidder agrees that its failure to enter the Contract if awarded the work would result in damage to the Owner and that it would be impracticable or extremely difficult to ascertain the actual amount of that damage. If the successful bidder fails to execute the Contract within the time period provided in Instruction No. 12 on the attached page, their bid security shall be forfeited in full to the Owner, except to the extent that Sections 5100 et. seq. of the California Public Contract Code applies.

6. Packaging and Delivery of Bid Proposal and Guaranty

Once the Bid Proposal and Supporting Documents herein have been completed and signed as set forth above, they shall be assembled electronically along with a copy of the Bid Proposal Guaranty and any proposed sketches and brochures required by these instructions, into a PDF file and send via email to the contact listed below.

No consideration shall be given by the Owner to bid proposals received after the date and time set by the Notice Inviting Bids herein for the opening of bids. No oral or telephonic bids will be considered. No forms transmitted via facsimile, or any other electronic means will be considered unless specifically authorized by Owner as stated in the Notice Inviting Bid.

Bid instructions are as follows:

- Potential bidders who wish to submit a bid to JCSD must submit their bid electronically (PDF format – Volume II) to JCSD Bids, email jcsdbids@jcsd.us.

  Email subject shall read "Bid from Contractor's Name JCSD Project No. C245118 and No. M221003.

- Bids shall be received by **February 4, 2025 no later than 10 a.m.;** all bids received after **10 a.m.** will be **rejected.**

- Bidders are encouraged to send their electronic bids utilizing the **DELIVERY and READ Receipt enabled.**

- The delivery receipt will be the bidder's verification that the bid has been sent to JCSD prior to the 10 a.m. deadline; all electronic files must be less than 20MB, as this is JCSD's limit for email submissions.

- After 10 a.m. – all bidders will call the following to hear the bids read out loud:

  1. 1-415-915-0466

  2. Conference ID: 897 999 750 #

     Note: Contractors may protect their bid (PDF file) with password and provide the password in a subsequent email between 10:01 a.m. – 10:05 a.m..

- Immediately following the conference call bid, JCSD will post bid results on JCSD website.

7. Withdrawal of Bid Proposal

The bidder may, without prejudice, withdraw their bid proposal at any time prior to the date and time set by the Notice Inviting Bids herein for the opening of bids; provided, that any request to withdraw must be in writing and duly executed by the bidder or the bidder's duly authorized representative and delivered to the Owner's Secretary at the address set forth in Instruction 6 herein. Any request to withdraw a bid after bid opening shall meet all requirements of Public Contract Code section 5100 et seq. and must be submitted in writing within five (5) working days, excluding Saturdays, Sundays, and State holidays, specifying in detail the mistake.

8. Modification of Bid Proposal

Any bidder who may wish to modify the bid proposal previously submitted may do so only by (a) following the withdrawal procedure set forth in Instruction 7 hereof prior to the date and time set by the Notice Inviting Bids herein for the opening of bids, and (b) submitting a substituted bid proposal which conforms to the requirements set forth in Instructions 1, 2, 4, 5, and 6 hereof. A bid proposal shall be deemed withdrawn once it has been delivered by the Owner to the one requesting withdrawal, either by personal delivery or deposit in the United States mail, addressed to the address originally given by the bidder. After withdrawal the Owner will not recognize modifications of bid proposals attempted by methods other than as set forth in this Instruction 8.

9. Opening and Awarding of Bids

All Bid Proposals shall be publicly opened and read at the time and place set forth in the Notice Inviting Bids herein. Bidders and their authorized representatives are invited to be present. The award, if made, shall be made within ninety (90) days of the opening. The Owner's policy is to award to the lowest responsible, responsive bidder who can comply with the projected delivery and/or completion schedules. However, the Owner

reserves the right to reject any or all bids or to waive any irregularities or informalities in any bids or in the bidding process. Notice of Award shall be made to a successful bidder in writing mailed to the address set forth on the signature page of the Bidding Documents.

In accordance with Labor Code section 1773.3, the District may be required to provide notice of the award to the Department of Industrial Relations on the Form PWC-100. The bidder who is awarded the Contract shall submit to the District a completed Form PWC-100 including identification of the worker classifications for the bidder and all listed subcontractors, within three (3) days of the award. Failure to provide a completed Form PWC-100 prior to execution of the Contract may result in forfeiture of the Bidder's bid guaranty to the District, and the District may award the Contract to the next lowest responsive and responsible bidder, or may call for new bids.

10. Retention of Proposal Guarantees

Upon award to the lowest responsive, responsible bidder, the security of an unsuccessful bidder shall be returned in a reasonable period of time, but in no event shall that security be held by the Owner beyond 60 days from the time the award is made.

11. Bond(s) and Certificates of Insurance Required of Successful Bidder

The successful bidder shall, upon receipt of notice of acceptance of their bid, promptly secure with a responsible corporate surety or sureties, a faithful performance bond or equivalent cash or authorized securities in an amount of not less than 100 percent of the total bid price, conditioned upon a faithful performance by said bidder of all requirements under the Contract.

In addition, the successful bidder shall promptly secure with a reasonable corporate surety or sureties, a labor and material payment bond in an amount of not less than 100% of the total bid price, conditioned upon payment in full of the claims of all persons performing labor upon or furnishing materials to be used in or furnishing appliances or power contributing to the work to be performed under the Contract.

The successful bidder shall also furnish certificates of insurance and endorsements as evidence of coverage in accordance with the General Conditions.

All bonds shall be subject to the approval of the Owner and shall be in the same form as the Contract Performance Bond and Labor and Materials Bond specified by the Owner herein. All Certificates of Insurance shall be subject to the approval of the Owner. Personal sureties and unregistered surety companies are unacceptable. The surety insurer for all bonds shall be California admitted surety insurer, as defined in Code of Civil Procedure Section 995.120.

12. Execution of Contract

The bidder to whom award is made shall execute a written contract with the Owner on the form of Contract provided herein (which shall incorporate by reference the Proposal; Bidder's Plan for Construction; Bidder's Statement of Experience, Financial Condition and Reference; Bidding Sheet; General Conditions; Special Requirements; Basic Specifications; Technical Specifications, and Drawings), together with the Labor Code Certification therein, and furnish good and approved bonds or substitution and Certificates of Insurance as required in the preceding paragraph within ten calendar days from the date of mailing the Notice of Award from the Owner to the bidder, as set forth above, of the acceptance of their proposal.

If the successful bidder fails or refuses to enter into the Contract, as herein provided, or to conform to any of the stipulated requirements in connection therewith, the proposal guaranty shall be forfeited in full to the Owner, except to the extent that Sections 5100 et. seq. of the California Public Contract Code apply. If the successful bidder refuses or fails to execute the Contract, the Owner may award the Contract to the bidder whose proposals is the next lowest responsive, responsible bidder to said Owner; and such bidder shall fulfill every stipulation embraced herein as if he were the party to whom the first award were made.

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. A corporation to which an award is made will be required, before the Contract is finally executed, to furnish evidence of its corporate existence and of the authority of the officer signing the Contract and bond for the corporation to so sign.

13. Special Instructions

Bidders are advised that supplemental instructions applicable to this project are set forth in paragraph "a" of the Bidding Sheet.

14. Mathematical Errors

In the event the Owner determines that there has been a mathematical error on the Bidding Sheet resulting from incorrect multiplication of unit prices times quantities, or incorrect addition of bid prices to determine the total bid, unit prices shall control. and the multiplication and the total bid amount shall be corrected accordingly prior to evaluating the bid. Any request to withdraw a bid after bid opening shall meet all requirements of Public Contract Code section 5100 et seq. and must be submitted in writing within five (5)

working days, excluding Saturdays, Sundays, and State holidays, specifying in detail the mistake.

15. Addenda to Contract Documents

The District will post addenda to the Contract Documents via the posting website. However, neither the District nor the Project Engineer is responsible for verifying the bidder's contact information nor ensuring that the bidder receives all addenda information.

It shall be the bidder's responsibility to be sure that bidder has obtained all applicable project addenda prior to submitting their bid proposal. To this end, each bidder should check the District's posting website https://www.jcsd.us/bids to verify that they have received all addenda issued, if any, at least 72 hours prior to the bid opening. Failure to acknowledge receipt of all addenda may result in bid rejection. The District reserves the right to revise bid documents prior to the bid opening date.

16. Interpretation of Plans and Documents

If any bidder contemplates submission of a bid for the proposed work and is in doubt as to the true meaning of any part of the plans, specifications, or other proposed Contract documents, or finds discrepancies in, or omissions from, the drawings or specifications, bidder may contact the Project Manager, Ashish Marwah, via email at JCSDbids@JCSD.US, to request a written response for an interpretation or correction thereof. The person submitting the request will be responsible for its prompt delivery and confirmation of receipt. Any interpretation or correction of the proposed documents shall be made only by addendum duly issued, and a copy of such addendum will posted. **Interpretation or corrections received within seven (7) days prior to Bid Opening (January 28, 2025 thru February 4, 2025) will not be answered.** The Owner will not be responsible for any other explanation or interpretations, of the proposed documents. 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.

17. Examination of Contract Documents

The District has made copies of the Contract available, as indicated above. bidders shall be solely responsible for examining the work site and the Contract, 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.

18. Inspection of Site; Pre-Bid Conference and Site Walk

Each prospective bidder is responsible for fully acquainting itself with the conditions of the work site (which may include more than one site), as well as those relating to the construction and labor of the work, to fully understand the facilities, difficulties and restrictions which may impact the cost or effort required to complete the work. 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.

19. Basis of Award; Balanced Bids

If the District proceeds to award the Contract, the award shall be to the lowest responsive, responsible bidder submitting a responsive bid. The District may reject any bid which, in its opinion, when compared to other bids received or to the District's internal estimates, does not accurately reflect the cost to perform the work. The 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.

20. 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 the District. No person, firm, corporation, or other entity may submit a subproposal to a bidder, or quote prices of materials to a bidder, when also submitting a prime bid for the same work.

21. Filing of Bid Protests

Submitted bids will be timely made available for review upon request of any bidder. Bidders may file a "protest" of a Bid with the District's Project Engineer. The protest must:

- Be filed in writing within five (5) business days after the bid opening date;
- Clearly identify the specific irregularity or accusation;
- Clearly identify the specific District staff determination or recommendation being protested;

- Specify, in detail, the grounds of the protest and the facts supporting the protest;

- Include all relevant, supporting documentation with the protest at time of filing;

- If the protest does not comply with each of these requirements, it may be rejected without further review; and

- If the protest is timely and complies with all of the above requirements, the District's Project Engineer, or other designated District staff member, shall review the basis of the protest and all relevant information. The District will provide a written response to the protestor.

22. Retention and Substitution of Security

The Contract calls for monthly progress payments based upon the percentage of the work completed. Unless otherwise specified in the Notice Inviting Bids, the District will retain 5% of each progress payment as provided by the Contract. At the request and expense of the successful bidder, the District will substitute securities for the amount retained in accordance with Public Contract Code Section 22300.

23. Prevailing Wage

The 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 District's office as stated in the Notice Inviting Bid 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). Bidder must also be registered with the California Department of Industrial Relations to qualify for an award to perform this contract.

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 subcontract 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 work shall be returned to the District. The Contractor shall be responsible for the payment of wages to workers of a debarred subcontractor used on the work.

25. Iran Contract 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.

26. Request for Substitutions

The successful bidder shall comply with the substitution request provisions set forth in the Contract. Any deadlines for substitution requests which occur prior to the bid opening date are set forth in the Special Requirements.

27. 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.

PROPOSAL DOCUMENTS

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BIDDER'S PROPOSAL WITH SUPPORTING DOCUMENTS

ANNUAL WATERLINE REPLACEMENT PROJECT
44TH STREET AREA
JCSD PROJECT NO. C245118
AND GLENROY CT INTERTIE WATER PLAN
JCSD PROJECT NO. M221003

TO THE PRESIDENT OF THE BOARD OF DIRECTORS, JURUPA COMMUNITY SERVICES DISTRICT ("THE OWNER")

1. PROPOSAL

The undersigned proposes to furnish all labor, materials, (except those materials to be furnished by Owner) equipment and methods necessary to properly construct and complete for the Owner the Annual Waterline Replacement Project – 44th Street Area and Glenroy Court Intertie as set forth in the Proposal Sheet, and in accordance with Bidder's Plan for Construction accompanying this proposal and incorporated herein by reference. The undersigned also declares that, as bidder, we have carefully examined the location of the proposed work and have read and examined the Contract (including the Special Requirements, Basic Specifications, Technical Specifications, and Drawings and other documents incorporated therein by reference).

The undersigned hereby declares, as bidder, that the only persons or parties interested in this proposal as principals are those named herein, that this bid is made without any connection with any other person or persons making a bid for the same purposes; except for any other division of the undersigned which may submit an independent bid; that the bid is in all respects fair and without collusion or fraud; that they have read the Notice Inviting Bids and the Bidding Instructions and agrees to all the stipulations contained therein; that he has examined the form of Contract, (including the Special Requirements, Basic Specifications, Technical Specifications, and Drawings and other documents incorporated therein by reference); that in exchange for consideration of their bid proposal by the Owner he proposes, in the event their proposal as submitted on the attached and incorporated Proposal Documents be accepted by the Owner, to contract in the said form to furnish and provide the items mentioned in this proposal and in the said form of Contract and in the Special Requirements, Basic Specifications,

Technical Specifications, and Drawings, and to furnish and provide the same within the time stipulated therein; and they will accept as full payment therefor the prices named in said Proposal Sheet.

The Bidder further agrees that they shall execute such Contract within ten days from the date of mailing to Bidder of written notice of the Owner's acceptance of this proposal and within same time shall furnish the required faithful performance bond or securities as permitted by Code of Civil Procedure Section 995.710, the labor and material payment bond, and certificates of insurance and endorsements, and that upon failure to do so within said time, then the proposal guarantee accompanying this proposal shall become the property of the Owner as liquidated damages for such failure or refusal and shall be deposited as monies belonging to the Owner; provided, that if said Bidder shall execute the Contract and furnish the required bonds and certificates of insurance and endorsements within the time aforesaid, their proposal guarantee shall be returned to them upon request within ten days thereafter or otherwise destroyed if so requested.

In submitting a bid to a public purchasing body, the bidder offers and agrees that if the bid is accepted, it will assign to the purchasing body 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 of Part 2 of Division 7 of the Business and Professions Code), arising from purchases of goods, materials, or services by the bidder for sale to the purchasing body pursuant to the bid. Such assignments shall be made and become effective at the time the purchasing body tenders final payment to the bidder.

2. BIDDER'S PLAN FOR CONSTRUCTION

Replies to these inquiries must be full and explicit.

A. Each bidder is required to inspect this proposed work. When, by whom, and in what manner was this proposed work inspected on behalf of the Bidder:

_____

_____

_____

B. Explain your plan or layout for performing the proposed work, including description of any proposed construction plan and detail construction program

_____

_____

_____

_____

_____

_____

_____

_____

_____

C. List the name and address of each subcontractor who will perform work in or about the work or improvement, or who will specifically fabricate and install a portion of the work according to detailed drawings contained in the plans and specifications, in excess of one-half of one percent of your total bid, and a statement of the portion of the work which will be done by each subcontractor. Only one subcontractor may be listed for each portion of the work. Each subcontractor must be registered with the Department of Industrial Relations to perform public work. Failure to include a subcontractor's registration number may result in the bid being non-responsive.

Subcontractor (a):

Name: _____

Address: _____

Portion of Work: _____

License No: _____

DIR Registration Number: _____

Subcontractor (b):

Name: _____

Address: _____

Portion of Work: _____

License: _____

DIR Registration Number: _____

Subcontractor (c):

Name: _____

Address: _____

Portion of Work: _____

License: _____

DIR Registration Number: _____

Subcontractor (d):

Name: _____

Address: _____

Portion of Work: _____

License: _____

DIR Registration Number: _____

D. For each subcontractor listed under paragraph C herein, provide the following information concerning years and examples of experience of each subcontractor's present organization in similar work:

NAME OF SUBCONTRACTOR	YRS OF EXPERIENCE OF SUBCONTRACTOR PRESENT ORGANIZATION	DATE OF COMPLETION OF SIMILAR JOBS (AT LEAST 2 COMPLETED) WITHIN PAST 3 YRS	NAMES AND ADDRESSES OF OWNERS OF LISTED SIMILAR JOBS
a._____ _____	_____Yrs.	Job #1 _____ Job #2 _____	_____ _____ _____ _____
b._____ _____	_____Yrs.	Job #1 _____ Job #2 _____	_____ _____ _____ _____
c._____ _____	_____Yrs.	Job #1 _____ Job #2 _____	_____ _____ _____ _____
d._____ _____	_____Yrs.	Job #1 _____ Job #2 _____	_____ _____ _____ _____

3. BIDDER'S STATEMENT OF EXPERIENCE, FINANCIAL CONDITION AND REFERENCES

How many years of experience in construction work has your organization had? ____

The following outline is a record of the undersigned Bidder's experience in construction of the three (3) most recent projects of a type similar in magnitude and character to that contemplated under this Contract. Include the location of each project as well as the name, address, and phone number of the owner, and name of individual to contact.

1. Owner' Name: _____
   Contact Person: _____
   Address of Owner: _____
   Phone: _____
   Project Description: _____

   Amount of Contract: _____ Completion Date: _____

2. Owner' Name: _____
   Contact Person: _____
   Address of Owner: _____
   Phone: _____
   Project Description: _____

   Amount of Contract: _____ Completion Date: _____

3. Owner' Name: _____
   Contact Person: _____
   Address of Owner: _____
   Phone: _____
   Project Description: _____

   Amount of Contract: _____ Completion Date: _____

As a part of this supporting document, submit a signed financial statement, financial data, or other information and references sufficiently comprehensive to permit an appraisal of your financial condition. The Bidder may submit this supporting document in a sealed

envelope labeled “CONFIDENTIAL” or may submit this supporting document as a password protected file.

4. BIDDING SHEET
a. Supplemental Instructions

1. Bidders are advised that:
   a. The Bidders shall submit a price for all bid item numbers under Bid Schedule I, Bid Schedule II, and Bid Schedule III.
   b. Award, if made, will be for Bid Schedule I, Bid Schedule II, and Bid Schedule III and will be made to one bidder only.
   c. All work under this Contract shall be completed in accordance with the Contract Completion Schedule(s) stated in the Special Requirements; AND THAT THE GENERAL CONDITIONS HEREIN CONTAINS A SECTION TITLED "LIQUIDATED DAMAGES".
   d. All contract construction shall be by an organization which has had successful demonstrable experience in the construction of facilities OF THE TYPE SPECIFIED, OR COMPARABLE.
   e. The Owner reserves the right to vary the amount of work under the Contract and may add or deduct from the various bid numbers at the unit prices shown on the Proposal Sheet, and as a result of this prerogative, there will be no claim for damages or profits, real or anticipated.
   f. Bid items must include a proportional amount of profit, overhead, etc., within the bid price for each bid item number, since the schedule of bid item numbers under which award is to be made will be determined by Owner after bids have been received.
   g. The Bidder shall submit their proposal on the Proposal Documents contained herein.

2. To complete this Proposal Sheet, use the blanks provided to fill in the bid prices at which you propose to furnish the scheduled construction, including all labor, materials, (other than materials supplied by the Owner), equipment, work, and methods necessary to complete the work in accordance with the Contract Completion Schedule located in the Special Requirements. Fill in the figures for the unit prices, extensions and sum of extensions (Total Bid) for all Bid Schedules and/or Bid Items shown on the Proposal Sheet. Figures and words must be inserted for the "Total Bid". If any discrepancy exists, the Owner may recalculate the bid price on the basis of the unit price and bidder agrees to be bound by such recalculation.

b. Bid Item Schedule

The undersigned hereby proposes to furnish and install the following items of construction[1] for the Owner, all in strict accordance with the attached and/or incorporated Special Requirements, Basic Specifications, Technical Specifications, and Drawings, including all labor, materials, equipment, work, method, etc., necessary to complete the work in accordance with the stated completion schedule(s); for the following bid prices:

BID SCHEDULE I

ANNUAL WATERLINE REPLACEMENT PROJECT – 44th STREET AREA
JCSD PROJECT NO.: C245118
WATER PIPELINE AND APPURTENANCES

Item No.	Description	Qty.[1]	Unit	Unit Bid Price*	Bid Extension*
101	Mobilization, Demobilization, Insurance, Bonds and Preconstruction Video[2]	---	LS	---	$_____
102	Pothole existing utilities at all crossings, and adjacent to proposed alignment, confirm connection points and provide pothole report prior to construction	525	EA	$_____	$_____
103	12” dia. C-909 PVC watermain w/ tracer wire, ductile iron fittings and thrust restraints	4,020	LF	$_____	$_____
104	8” dia. C-909 PVC watermain w/ tracer wire, ductile iron fittings and thrust restraints	5,045	LF	$_____	$_____
105	12” dia. CML/C watermain w/ fittings, fabrication, and flanges	35	LF	$_____	$_____

[1]Quantities (except for “Lump Sum” item numbers) are estimated and are for the purpose of comparing bids only. Payment will be based upon actual quantities furnished, installed or constructed in accordance with the Contract Documents.
*The above prices include any amount payable by the Owner for taxes by reason of this contract.
[2]Payment shall not exceed 5% of total for Bid Schedule. Initial payment of 50% for mobilization, then payment of 25% upon halfway through the project and the final 25% payment during demobilization.

Item No.	Description	Qty.[1]	Unit	Unit Bid Price*	Bid Extension*
106	12" dia. R.S. Gate Valve per JCSD Std. Dwg. No. B-1	18	EA	$_____	$_____
107	10” dia. R.S. Gate Valve per JCSD Std. Dwg. No. B-1	1	EA	$_____	$_____
108	8” dia. R.S. Gate Valve per JCSD Std. Dwg. No. B-1	26	EA	$_____	$_____
109	6” dia. R.S. Gate Valve per JCSD Std. Dwg. No. B-1	1	EA	$_____	$_____
110	6" Fire Hydrant Assembly per JCSD Std. Dwg. No. G-2/2A (including Gate Valve, Break-Off Check Valve, Guard Posts, and Blue Reflective Pavement Markers)	28	EA	$_____	$_____
111	4” dia. Blow-Off Assembly per JCSD Std. Dwg. No. F-1A**	9	EA	$_____	$_____
112	1” dia. Air Valve Assembly per JCSD Std. Dwg. No. E-1 (including guard posts**)	15	EA	$_____	$_____
113	2" dia. Air Valve Assembly per JCSD Std. Dwg. No. E-1A (including guard posts**)	9	EA	$_____	$_____
114	Connection Detail 5A including piping, fittings, thrust restraints, traffic control and dewatering	1	LS	---	$_____
115	Connection Detail 5B-ZV including piping, fittings, thrust restraints, traffic control and dewatering	1	LS	---	$_____

[1]Quantities (except for “Lump Sum” item numbers) are estimated and are for the purpose of comparing bids only. Payment will be based upon actual quantities furnished, installed or constructed in accordance with the Contract Documents.

*The above prices include any amount payable by the Owner for taxes by reason of this contract.

**Including guard posts as needed

Item No.	Description	Qty.[1]	Unit	Unit Bid Price*	Bid Extension*
116	Connection Detail 5C-ZV including piping, fittings, thrust restraints, traffic control and dewatering	1	LS	---	$_____
117	Connection Detail 6A-ZV including piping, fittings, thrust restraints, traffic control and dewatering.	1	LS	---	$_____
118	Connection Detail 6B-ZV including piping, fittings, thrust restraints, traffic control and dewatering.	1	LS	---	$_____
119	Connection Detail 8A including piping, fittings, thrust restraints, traffic control and dewatering.	1	LS	---	$_____
120	Connection Detail 9A including piping, fittings, thrust restraints, traffic control and dewatering.	1	LS	---	$_____
121	Connection Detail 9B including piping, fittings, thrust restraints, traffic control and dewatering.	1	LS	---	$_____
122	Connection Detail 10A including piping, fittings, thrust restraints, traffic control and dewatering.	1	LS	---	$_____
123	Connection Detail 10B including piping, fittings, thrust restraints, traffic control and dewatering.	1	LS	---	$_____

[1]Quantities (except for "Lump Sum" item numbers) are estimated and are for the purpose of comparing bids only. Payment will be based upon actual quantities furnished, installed or constructed in accordance with the Contract Documents.

*The above prices include any amount payable by the Owner for taxes by reason of this contract.

Item No.	Description	Qty.[1]	Unit	Unit Bid Price*	Bid Extension*
124	Connection Detail 12A including piping, fittings, thrust restraints, traffic control and dewatering.	1	LS	---	$_____
125	Connection Detail 13A including piping, fittings, thrust restraints, traffic control and dewatering.	1	LS	---	$_____
126	Connection Detail 14A including piping, fittings, thrust restraints, traffic control and dewatering.	1	LS	---	$_____
127	Connection Detail 14B including piping, fittings, thrust restraints, traffic control and dewatering.	1	LS	---	$_____
128	Connection Detail 15-ZV including piping, fittings, thrust restraints, traffic control and dewatering.	1	LS	---	$_____
129	Connection Detail 16A including piping, fittings, thrust restraints, traffic control and dewatering.	1	LS	---	$_____
130	Connection Detail 16B including piping, fittings, thrust restraints, traffic control and dewatering.	1	LS	---	$_____
131	Furnish and install 8-inch siphon, including 4-45 degree fittings as required to clear existing utility.	5	EA	$_____	$_____

[1]Quantities (except for "Lump Sum" item numbers) are estimated and are for the purpose of comparing bids only. Payment will be based upon actual quantities furnished, installed or constructed in accordance with the Contract Documents.

*The above prices include any amount payable by the Owner for taxes by reason of this contract.

Item No.	Description	Qty.[1]	Unit	Unit Bid Price*	Bid Extension*
132	Furnish and install 12-inch siphon, including 4-45 degree fittings as required to clear existing utility.	5	EA	$_____	$_____
133	Owner directed installation of 8-inch/12-inch diameter pipeline at flowline depth between 1.1-feet and 2.0 feet deeper (additive change)/shallower (deductive change) than shown at bid time. Variation between 0.1-feet to 1.0 foot is no charge to the District.	1,000	LF	$_____	$_____
134	Owner directed installation of 8-inch/12-inch diameter pipeline at flowline depth between 2.1-feet and 3.0 feet deeper (additive change)/shallower (deductive change) than shown at bid time.	1,000	LF	$_____	$_____
135	Sand bedding for mainline trench per specifications and modified JCSD Std. Dwg. No. A-1 including import sand, export and disposal of native materials.	9,100	LF	$_____	$_____
136	Backfill, compact, restore mainline trench zone	9,100	LF	$_____	$_____
137	Trenching, excavation, sheeting, shoring and bracing for protection of life and limb per OSHA Standards	1	LS	---	$_____

[1]Quantities (except for "Lump Sum" item numbers) are estimated and are for the purpose of comparing bids only. Payment will be based upon actual quantities furnished, installed or constructed in accordance with the Contract Documents.

*The above prices include any amount payable by the Owner for taxes by reason of this contract.

Item No.	Description	Qty.[1]	Unit	Unit Bid Price*	Bid Extension*
138	Pavement removal and disposal (mainline trench) per City of Jurupa Valley Encroachment Permit and per Specifications	9,100	LF	$_____	$_____
139	Pavement replacement (mainline trench) per City of Jurupa Valley Encroachment Permit and per Specifications	9,100	LF	$_____	$_____
140	Grinding and 0.125' thick asphalt concrete capping of cross streets as shown on plans per City of Jurupa Valley Encroachment Permit and per Specifications	181,250	SF	$_____	$_____
141	Grinding and 0.125' thick asphalt concrete capping of entire width of Agate Street and Galena Street as shown on plans per City of Jurupa Valley Encroachment Permit and per Specifications	125,830	SF	$_____	$_____
142	Removal of existing asphalt surface of Tammy Lane up to 3" including removal of 4" of sub-grade to prepare for asphalt rehabilitation	12,360	SF	$_____	$_____
143	Construction and compaction of 3" AC Pavement over 4" of Class II base along Tammy Lane, match existing grades.	12,360	SF	$_____	$_____

[1]Quantities (except for "Lump Sum" item numbers) are estimated and are for the purpose of comparing bids only. Payment will be based upon actual quantities furnished, installed or constructed in accordance with the Contract Documents.

*The above prices include any amount payable by the Owner for taxes by reason of this contract.

Item No.	Description	Qty.[1]	Unit	Unit Bid Price*	Bid Extension*
144	Replace traffic striping and pavement markings per City of Jurupa Valley Encroachment Permit and Temporary Striping	1	LS	$_____	$_____
145	Remove and Legally dispose of asbestos cement pipe as required in accordance with Special Requirement 28 on SR-25.	500	LF	---	$_____
146	Hard Rock Excavation, removal, and disposal if encountered	200	CY	---	$_____
147	Remove existing meter box. Furnish and install new meter and meter box in accordance with construction note 4 of the plans. Location of meter box can vary up to 5 feet on either side of the existing meter box location; however, new location must be within public right of way, contractor to extend existing lateral on home side to newly proposed meter location.	120	EA	$_____	$_____

[1]Quantities (except for "Lump Sum" item numbers) are estimated and are for the purpose of comparing bids only. Payment will be based upon actual quantities furnished, installed or constructed in accordance with the Contract Documents.

*The above prices include any amount payable by the Owner for taxes by reason of this contract.

Item No.	Description	Qty.[1]	Unit	Unit Bid Price*	Bid Extension*
148	Remove existing meter box. Furnish and install new meter and meter box at Sta. 12+87.39 in accordance with construction note 5 of the plans. Location of meter box can vary up to 5 feet on either side of the existing meter box location; however, new location must be within public right of way, contractor to extend existing lateral on home side to newly proposed meter location.	1	EA	$_____	$_____
149	Remove existing meter box. Furnish and install new meter and meter box at Sta. 15+88.40 in accordance with construction note 9 of the plans. Location of meter box can vary up to 5 feet on either side of the existing meter box location; however, new location must be within public right of way, contractor to extend existing lateral on home side to newly proposed meter location.	1	EA	$_____	$_____
150	Remove existing meter box. Furnish and install new meter and meter box at Sta. 18+39.65 in accordance with construction note 12 of the plans. Location of meter box can vary up to 5 feet on either side of the existing meter box location; however, new location must be within public right of way. Reconnect ex. onsite lateral to new meter box location.	1	EA	$_____	$_____

[1]Quantities (except for "Lump Sum" item numbers) are estimated and are for the purpose of comparing bids only. Payment will be based upon actual quantities furnished, installed or constructed in accordance with the Contract Documents.

*The above prices include any amount payable by the Owner for taxes by reason of this contract.

Item No.	Description	Qty.[1]	Unit	Unit Bid Price*	Bid Extension*
151	Relocate existing meter box and water service to front of house. Furnish and install new meter and meter box in accordance with construction note 30 of the plans. Connect newly relocated service back to existing customer onsite piping.	4	EA	$_____	$_____
152	Remove ex. Meter box. Furnish and install new meter and meter box in accordance with construction note 36 of the plans Re-connect to customer onsite piping. Saw cut of existing concrete and repair of concrete where existing meter box is required.	2	EA	$_____	$_____
153	Furnish and install materials and fittings to transfer ex. 8" fire loop service to proposed waterline.	2	EA	$_____	$_____
154	Remove AC, backfill, compaction, restore AC for appurtenances and services (non-mainline trench)	1	LS	---	$_____
155	Unknown existing sewer lateral crossing over proposed watermain per modified JCSD Std. Dwg. No. A-10 (one full stick of SDR 35 pipe)	10	EA	$_____	$_____

[1]Quantities (except for "Lump Sum" item numbers) are estimated and are for the purpose of comparing bids only. Payment will be based upon actual quantities furnished, installed or constructed in accordance with the Contract Documents.

*The above prices include any amount payable by the Owner for taxes by reason of this contract.

Item No.	Description	Qty.[1]	Unit	Unit Bid Price*	Bid Extension*
156	Removal and replacement of existing cross gutters, drains, curbs, driveways, sidewalks, mailboxes, dikes, and any other street improvements in kind as needed during construction	1	LS	---	$_____
157	Remove and dispose of existing fire hydrants, air valves, valves, valve cans, water meters, and blow-offs, cut and plug and cap outlets of existing water mains, backfill and compaction per specifications and JCSD standards.	1	LS	---	$_____
158	Construction water, and associated piping, fittings, thrust restraints, back-flow assemblies, meter deposits, equipment, valves, etc.	1	LS	---	$_____
159	Pre-construction survey of existing topography and construction staking	1	LS	---	$_____
160	Furnish, install, and maintain two (2) project signs	1	LS	---	$_____
161	Prepare engineer signed Traffic Control plans for waterline construction and all appurtenances, services, outlets, connections, etc. and submit and obtain approval from City of Jurupa Valley	1	LS	---	$_____

[1]Quantities (except for "Lump Sum" item numbers) are estimated and are for the purpose of comparing bids only. Payment will be based upon actual quantities furnished, installed or constructed in accordance with the Contract Documents.

*The above prices include any amount payable by the Owner for taxes by reason of this contract.

Item No.	Description	Qty.[1]	Unit	Unit Bid Price*	Bid Extension*
162	Traffic Control and Safety per approved Traffic Control Plans as required by City of Jurupa Valley Encroachment Permit, including traffic control for inspection activities	1	LS	---	$_____
163	Monitor and maintenance of traffic control devices	1	LS	---	$_____
164	Apply for, obtain, pay for and comply with Jurupa Valley encroachment permit (including all rider permits and extensions), provide and implement BMP's per City's requirements	1	LS	---	$_____
165	Flush and pressure testing including temporary blow-offs, all thrust restraints and protection per AWWA and JCSD requirements.	1	LS	---	$_____
166	Chlorination and disinfection of pipelines	1	LS	---	$_____
167	Maintain updated As-Builts and provide final Record Drawings	1	LS	---	$_____
168	Abandon existing water pipeline in place per specification including dewatering and properly bulkhead all ends, backfill compaction and AC restoration	1	LS	---	$_____
169	Protect and/or replace existing survey monuments	1	LS	---	$_____

[1]Quantities (except for "Lump Sum" item numbers) are estimated and are for the purpose of comparing bids only. Payment will be based upon actual quantities furnished, installed or constructed in accordance with the Contract Documents.

*The above prices include any amount payable by the Owner for taxes by reason of this contract.

Item No.	Description	Qty.(1)	Unit	Unit Bid Price*	Bid Extension*
170	Repair ex. traffic roundabout in kind including all striping, markers, and signage	1	LS	---	$_____
171	Protect existing fire hydrant in place, tie existing fire hydrant lateral to proposed waterline	2	EA	$_____	$_____
172	Unknown/unmarked utility undercrossings and protection including idle costs, excavation, support, backfill, slurry and delays associated cost per Special Requirements.	20	EA	$_____	$_____
173	All other work in the Contract Documents not outlined in Bid Items 101 to 172 to make system operational	1	LS	---	$_____

Total Bid Schedule I…….$_____*
(Sum of Extension Nos. 101 thru 173) (Figures)

"TOTAL BID" Schedule I: _____
_____
_____Dollars*
(Words)

(1)Quantities (except for “Lump Sum” item numbers) are estimated and are for the purpose of comparing bids only. Payment will be based upon actual quantities furnished, installed or constructed in accordance with the Contract Documents.
*The above prices include any amount payable by the Owner for taxes by reason of this contract.

BID SCHEDULE II

ANNUAL WATERLINE REPLACEMENT PROJECT – 44th STREET AREA
JCSD PROJECT NO.: C245118
SEWER PIPELINE AND MANHOLE REPLACEMENT

Item No.	Description	Qty.[1]	Unit	Unit Bid Price*	Bid Extension*
200	Remove and legally dispose of existing 6-inch dia. VCP sewer line	400	LF	$_____	$_____
201	Remove and legally dispose of existing 8-inch dia. VCP sewer line	2,030	LF	$_____	$_____
202	Furnish and install 8-inch dia. PVC SDR 35 per S-2 Class "I" Bedding	2,430	LF	$_____	$_____
203	Remove and dispose of existing 48-inch dia. sewer manhole	1	EA	$_____	$_____
204	Remove and dispose of existing square sewer manhole	1	EA	$_____	$_____
205	Remove and dispose of existing sewer cleanout	2	EA	$_____	$_____
206	Furnish and install 48-inch dia. MH per JCSD Std. Dwg. S-7.	7	EA	$_____	$_____
207	Rehabilitate existing 48-inch dia. MH including manhole cover and frame per JCSD Std. Dwg. S-7 and per Section 02738 of the Technical Specifications.	6	EA	$_____	$_____

[1]Quantities (except for "Lump Sum" item numbers) are estimated and are for the purpose of comparing bids only. Payment will be based upon actual quantities furnished, installed or constructed in accordance with the Contract Documents.

*The above prices include any amount payable by the Owner for taxes by reason of this contract.

Item No.	Description	Qty.[1]	Unit	Unit Bid Price*	Bid Extension*
208	Reconnect sewer laterals per S-5 and Specifications	25	EA	$_____	$_____
209	Prepare and implement OERP and Sewer Bypass Plan	1	LS	---	$_____
210	Sewer Inspection Video prior to Construction including locating all sewer laterals	1	LS	---	$_____
211	Sewer Inspection Video after construction	1	LS	---	$_____
212	Backfill, compact, restore mainline trench zone	2,430	LF	$_____	$_____
213	Pavement removal, disposal and replacement (mainline trench) per City of Jurupa Valley Encroachment Permit and per Specifications	2,430	LF	$_____	$_____
214	Remove AC, backfill, compaction, restore AC for appurtenances and services (non-mainline trench)	1	LS	---	$_____
215	Air testing new pipe and vacuum test manholes	1	LS	---	$_____
216	Provide Record Drawings in accordance with the Specifications	1	LS	---	$_____
217	Unknown/unmarked utility undercrossings	20	EA	$_____	$_____

[1]Quantities (except for "Lump Sum" item numbers) are estimated and are for the purpose of comparing bids only. Payment will be based upon actual quantities furnished, installed or constructed in accordance with the Contract Documents.

*The above prices include any amount payable by the Owner for taxes by reason of this contract.

Item No.	Description	Qty.[1]	Unit	Unit Bid Price*	Bid Extension*
218	All other work in the Contract Documents not outlined in Bid Items 200 to 217 to make system operational	1	LS	---	$_____

Total Bid Schedule II……$_____*
(Sum of Extension Nos. 200 thru 218) (Figures)

"TOTAL BID" Schedule II: _____
_____
_____Dollars*
(Words)

[1]Quantities (except for “Lump Sum” item numbers) are estimated and are for the purpose of comparing bids only. Payment will be based upon actual quantities furnished, installed or constructed in accordance with the Contract Documents.
*The above prices include any amount payable by the Owner for taxes by reason of this contract.

BID SCHEDULE III

GLENROY COURT AT BELLEGRAVE AVENUE WATERLINE INTERTIE
JCSD PROJECT NO.: M221003
WATER PIPELINE INSTALLATION

Item No.	Description	Qty.[1]	Unit	Unit Bid Price*	Bid Extension*
300	Mobilization and demobilization, bonding, insurance bonds, submittals, administration, project closeout, trenching and excavation, sheeting, shoring, bracing, protection of life and limb per OSHA standards	1	LS	---	$_____
301	Pothole existing utilities at all crossings, and adjacent to proposed alignment, confirm connection points and provide pothole report prior to construction	20	EA	$_____	$_____
302	8-inch diameter intertie pipeline including all pipe, fittings, flanges, tees, elbows, etc.	1	LS	---	$_____
303	Connection to existing 8-inch diameter waterline on Glenroy Court, including pipe cutting, butt strap, etc.	1	LS	---	$_____
304	Connection to existing 12-inch diameter waterline on Bellegrave Avenue, including saddle outlet, fittings, 8-inch diameter gate valve, perform hot-tap connection, valve box and cap, etc.	1	LS	---	$_____

[1]Quantities (except for "Lump Sum" item numbers) are estimated and are for the purpose of comparing bids only. Payment will be based upon actual quantities furnished, installed or constructed in accordance with the Contract Documents.

*The above prices include any amount payable by the Owner for taxes by reason of this contract.

Item No.	Description	Qty.[1]	Unit	Unit Bid Price*	Bid Extension*
305	Disconnections, removal, disposal of existing piping including flushing and dewatering	1	LS	---	$_____
306	All concrete thrust blocks and shear rings including all concrete work	1	LS	---	$_____
307	Pre-construction survey of existing topography and construction staking	1	LS	---	$_____
308	Pipeline video inspection	1	LS	---	$_____
309	Develop signed traffic control plans and implement traffic control and monitor and maintenance of traffic control and devices, submit traffic control plans to City of Jurupa Valley and obtain approval, provide traffic control for District and City representative	1	LS	---	$_____
310	Apply for, obtain, pay for, and comply with Jurupa Valley encroachment permit (including all rider permits and extensions) and provide for BMP's per City's requirements	1	LS	---	$_____
311	Temporary and final striping refurbishment of striping disturbed by Contractor's activities	1	LS	---	$_____
312	Provide and coordinate access to private properties, residences, businesses, etc.	1	LS	---	$_____

[1]Quantities (except for "Lump Sum" item numbers) are estimated and are for the purpose of comparing bids only. Payment will be based upon actual quantities furnished, installed or constructed in accordance with the Contract Documents.

*The above prices include any amount payable by the Owner for taxes by reason of this contract.

Item No.	Description	Qty.[1]	Unit	Unit Bid Price*	Bid Extension*
313	Paving, removal, disposal and replacement including Class 2 Base, AC Base Paving; trench repair and import backfill and compaction etc., per City of Jurupa Valley Standard No. 703 series and requirements, removal shall be made by saw cutting, assume existing 12-inch thick paving; temporary paving per City of Jurupa Valley requirements; removal and disposal of all excess spoils and materials	150	SF	---	$_____
314	Grind and asphalt concrete cap per City of Jurupa Valley Standard No. 703 series and requirements	1	LS	---	$_____
315	Restore signs, concrete curbs, gutters, sidewalks, landscaping, hard-scaping, irrigation systems, concrete pads, and all existing improvements	1	LS	---	$_____
316	Support and protection of all existing underground and above ground utilities, appurtenances, facilities, structures, slurry backfill as required	1	LS	---	$_____
317	Record drawings	1	LS	---	$_____
318	Construction water and appurtenant equipment and materials	1	LS	---	$_____

[1]Quantities (except for "Lump Sum" item numbers) are estimated and are for the purpose of comparing bids only. Payment will be based upon actual quantities furnished, installed or constructed in accordance with the Contract Documents.

*The above prices include any amount payable by the Owner for taxes by reason of this contract.

Item No.	Description	Qty.(1)	Unit	Unit Bid Price*	Bid Extension*
319	Work as specified and shown on the plans, in the documents, contract not specifically listed in any other bid items herein, including dewatering, flushing, pressure testing, disinfection of piping, etc.	1	LS	---	$_____

Total Bid Schedule III…….$_____*
(Sum of Extension Nos. 300 thru 319) (Figures)

"TOTAL BID" Schedule III: _____
_____
_____Dollars*
(Words)

BID SUMMARY SHEET

(shall be filled in by Bidder)

BID SCHEDULE NO.	TOTAL ESTIMATE
I	$_____*
II	$_____*
III	$_____*
TOTAL BID (Sum of Bid Schedules I, II, and III)	$_____*

Total Bid Schedule I, II, and III: _____
_____
_____* (words)

(1)Quantities (except for "Lump Sum" item numbers) are estimated and are for the purpose of comparing bids only. Payment will be based upon actual quantities furnished, installed or constructed in accordance with the Contract Documents.

*The above prices include any amount payable by the Owner for taxes by reason of this contract.

5. BIDDER'S STATEMENT

1. Names and addresses of all members of co-partnership or names and titles of all officers of the corporation.

_____
_____
_____
_____
_____
_____
_____

2. The bidder declares that the surety or sureties named in the space provided below has agreed to furnish bonds in the aggregate amounts set forth in the Instruction to Bidders, in the event the Contract is awarded on the basis of this proposal.

   Name(s) and address(es) of surety or sureties agreeing to furnish bond.

_____
_____
_____
_____
_____
_____

Corporation organized under the laws of the State of:

_____

Name of Bidder:

_____

California Contractor's License No. _____

_____

_____

_____

Bidder's Address

License Expiration Date:

_____

License Class _____

_____

Bidder's Phone Number

_____

Bidder's Fax Number

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 with the Department of Industrial Relations to perform public works.

DIR Registration Number: _____

I declare under penalty of perjury under the laws of the State of California that the foregoing representations are true and correct.

By: _____

(Bidder's Signature)

_____

(Typed or Printed Name)

_____

Title

6. 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].

_____
(Signature)

_____
(Typed Name)

SUBSCRIBED BEFORE ME on this ____day of _____, 20_____.

_____
NOTARY PUBLIC

My Commission Expires: _____

7. BID BOND

The makers of this bond are, _____ _____, as Principal, and _____, as Surety and are held and firmly bound unto the Jurupa Community Services District, hereinafter called the 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 ____, for Annual Waterline Replacement Project – 44th Street Area and Glenroy Court Intertie.

If the Principal does not withdraw its bid within the time specified in the Contract; and if the Principal is awarded the Contract and provides all documents to the District as required by the Contract (including the Special Requirements, Basic Specifications, Technical Specifications, and Drawings and other documents incorporated therein by reference); 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 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 the District and judgment is recovered, the Surety shall pay all litigation expenses incurred by the 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.

SURETY:	BIDDER;
_____	_____
By: _____	By: _____
Title: _____	Title: _____
Attest: (If Corporation)	Attest: (If Corporation)
_____	_____
Title: _____	Title: _____
(SEAL)	(SEAL)

STATE OF CALIFORNIA

COUNTY OF _____

On _____, 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 signatures(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.

(SEAL)

_____

SIGNATURE OF NOTARY

8. 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.

Signed:_____

Titled:_____

Firm:_____

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.

CONTRACT

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OF CONTRACT

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JURUPA COMMUNITY SERVICES DISTRICT

CONTRACT

ANNUAL WATERLINE REPLACEMENT PROJECT
44TH STREET AREA
JCSD PROJECT NO. C245118
AND GLENROY CT INTERTIE WATER PLAN
JCSD PROJECT NO. M221003

THIS CONTRACT is made and entered into this _____ day of _____ _____ in the year Two Thousand _____, by and between the Jurupa Community Services District hereinafter designated as the "Owner", and _____ _____ hereinafter designated as the "Contractor".

A. RECITALS

1. The Contractor, in response to a Notice Inviting Bids issued by the Owner, has submitted a bid proposal for Annual Waterline Replacement Project – 44th Street Area and Glenroy Court Intertie.

2. The Owner has duly opened and considered the said bid proposal, and has duly awarded said bid to the Contractor, in accordance with said Notice Inviting Bids and has given written notice of said award to the Contractor on_____ _____, 20____.

3. The Contractor has obtained and delivers concurrently herewith all appropriate certificates of insurance and endorsements, a performance bond or equivalent substitute, and a labor and material payment bond with corporate surety or sureties satisfactory to the Owner, each for not less than 100% of the total bid price.

4. The Contractor shall perform all work within the time stipulated in 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 herein.

B. AGREEMENTS

1. Incorporation of Documents

This Contract includes, and there are hereby incorporated by reference the following documents which are attached and bound and/or incorporated herewith, together with any addenda thereto which may hereafter be executed by both Parties, Notice Inviting Bids, The Proposal; Bidder's Plan for Construction; Bidder's Statement of Experience, Financial Condition, and References; Bidding Sheet; Contractor's Certification in accordance with Labor Code 1861; General Conditions; Special Requirements; Basic Specifications; and Drawings. Said documents shall by this reference, be incorporated with like effect as if their provisions were each separately and expressly set forth here.

2. Contractor's Basic Obligation

The Contractor promises and agrees at the Contractor's own cost to furnish to the Owner all materials (except those materials to be furnished by Owner), labor, tools, and equipment necessary to complete Annual Waterline Replacement Project – 44th Street Area and Glenroy Court Intertie as awarded by the Owner, for a total of $_____, including taxes, as specified in the Bidding Sheet; and in addition, Additive Bid Item(s) NONE, Deductive Bid Item(s) NONE, and Additive/Deductive Bid Item(s) NONE; at the time and place and in the quantity specified in the Bidding Sheet and/or the Special Requirements hereto attached and incorporated, all subject to and in accordance with the terms and conditions contained herein and in the General Conditions and in strict compliance with and in conformity to the Special Requirements, Basic Specifications, and Drawings hereto attached and/or incorporated. The following shall be at the risk of the Contractor: All loss and damages which may arise out of the nature of the work aforesaid, or from the action of the elements, or from any unforeseen difficulties which may arise or be encountered in the prosecution of the work until its acceptance by the Owner, together with all risks of any description in connection with the work and any and all expenses incurred by or in consequence of any suspension or discontinuance of the work, except such as in the specifications are expressly stipulated to be borne by the Owner.

3. The Owner's Basic Obligation

The Owner hereby promises and agrees with the Contractor to engage and does hereby engage said Contractor as an independent contractor to furnish the materials and/or to perform the work according to the terms and conditions herein contained and referred to for the sum aforesaid and hereby contracts to pay the same at the time, in the manner, and upon the conditions set forth herein, in the

General Conditions, Special Requirements, Basic Specifications, and the Drawings.

4. Time for Completion

The work shall be commenced on the date stated in the Owner's Notice to Proceed. The Contractor shall complete all work required by the Contract within **Three Hundred and Fifty (350)** calendar days from the commencement date stated in the Notice of Award. By its signature hereunder, Contractor agrees the time for completion set forth above is adequate and reasonable to complete the work.

5. Liquidated Damages

In accordance with Government Code section 53069.85, it is agreed that the Contractor will pay the Owner the sum of **Two Thousand Dollars** ($2,000) for each and every calendar day of delay beyond the time prescribed in the Contract for finishing the work, as Liquidated Damages and not as a penalty or forfeiture. In the event this is not paid, the Contractor agrees the Owner may deduct that amount from any money due or that may become due the Contractor under the Contract. This section does not include recovery of other damages specified in the Contract.

6. Successors Bound

The parties hereto do for themselves, their heirs, executors, administrators, successors, and assigns agree to the full performance of all of the provisions herein contained. Contractor may not, either voluntarily or by action of law, assign any obligation assumed by Contractor hereunder without the prior written consent of the Owner.

[SIGNATURES ON THE FOLLOWING PAGE]

IN WITNESS WHEREOF; The parties hereto have caused this Contract to be executed the day and year first above written.

ATTEST:

_____

Jurupa Community Services District,

By _____
Chris Berch, P.E., General Manager

_____
Contractor
(Signature of Contractor must be notarized)

Approved as to form and execution:

_____
Counsel for
Jurupa Community Services District

By _____

_____
Title

_____
Secretary

Dated: _____, 20____

Corporate Seal (if a corporation)

CERTIFICATION OF CONTRACTOR
IN ACCORDANCE WITH LABOR CODE
SECTION 1861

I am aware of the provisions of Section 3700 of the Labor Code which require every employer to be insured against liability for Workmen's 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.

_____
Contractor's Authorized Representative

CONTRACT **PERFORMANCE BOND**

KNOW ALL PERSONS BY THESE PRESENTS:

THAT WHEREAS, _____ (hereinafter referred to as "District") has awarded to _____, (hereinafter referred to as the "Contractor") _____ an agreement for Annual Waterline Replacement Project – 44th Street Area and Glenroy Court Intertie (hereinafter referred to as the "Work").

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

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

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 the 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, their 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 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 the District, its officers and agents, as stipulated in said Contract, then this obligation shall become null and void; otherwise it shall be and remain in full force and effect.

As a condition precedent to the satisfactory completion of the Contract, unless otherwise provided for in the Contract, the guarantee 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 the District from loss or damage resulting from or caused by defective materials or faulty workmanship. The obligations of Surety hereunder shall continue so long as any obligation of Contractor remains. Nothing herein shall limit the 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.

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

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

(1) Take over and complete the work in accordance with all terms and conditions in the Contract; or

(2) Obtain a bid or bids for completing the work in accordance with all terms and conditions in the Contract and upon determination by Surety of the lowest responsive and responsible bidder, arrange for a Contract between such bidder, the Surety and the District, and make available as work progresses sufficient funds to pay the cost of completion of the work, 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 the District under the Contract and any modification thereto, less any amount previously paid by the District to the Contractor and any other set offs pursuant to the Contract.

(3) Permit the District to complete the work in any manner consistent with California law and make available as work progresses sufficient funds to pay the cost of completion of the work, 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 the District under the Contract and any modification thereto, less any amount previously paid by the District to the Contractor and any other set offs pursuant to the Contract.

Surety expressly agrees that the 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 work nor shall Surety accept a bid from Contractor for completion of the work if the District, when declaring the Contractor in default, notifies Surety of the District's objection to Contractor's further participation in the completion of the work.

The Surety, for value received, hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the Contract or to the Work 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 or to the Work and the provisions of Section 2819 and 2845 of the California Civil Code.

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

_____
CONTRACTOR/PRINCIPAL

_____
Name

By: _____

SURETY:
By: _____
Attorney-In-Fact

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) _____

CERTIFICATE AS TO CORPORATE PRINCIPAL

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_____ before me, _____
(insert name and title of the officer)

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 _____**(Seal)**

I, _____, certify that I am the _____ Secretary of the corporation named as principal to the within bond; that _____ who signed the said bond on behalf of the principal was then _____ of said corporation; that I know his/her/their signature, and his/her/their signature thereto is genuine; and that said bond was duly signed, sealed and attested for and in behalf of said corporation by authority of its governing board.

_____
(Corporate Seal)

NOTE: A copy of the Power-of-Attorney to local representatives of the bonding company must be attached hereto.

PAYMENT BOND (LABOR AND MATERIALS)

KNOW ALL MEN BY THESE PRESENTS

THAT WHEREAS, Jurupa Community Services District (hereinafter referred to as "District") has awarded to _____ _____, (hereinafter referred to as the "Principal") _____ a contract for the work described as follows: Annual Waterline Replacement Project – 44th Street Area and Glenroy Court Intertie as set forth in the Contract for the Work dated _____, (hereinafter referred to as "Contract"), the terms and conditions of which are expressly incorporated herein by reference; 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 the 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, their 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 their 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 the 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, 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 their claim and that Surety does hereby waive notice of any such change, extension of time, addition, alteration or modification herein mentioned and the provisions of Section 2819 and 2845 of the California Civil Code.

IN WITNESS WHEREOF, two (2) identical counterparts of this instrument, each of which shall for all purposes be deemed unoriginal thereof, have been duly executed by the Principal and Surety above named, on the _____ day of _____ 20_____ the name and corporate seal of each corporate party being hereto affixed and these presents duly signed by its undersigned representative pursuant to authority of its governing body.

(Corporate Seal of Principal if corporation,)

_____
Principal (Property Name of Contractor)

By: _____
Signature of Contractor

Seal of Surety

_____
Surety

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_____ before me, _____
(insert name and title of the officer)

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 _____**(Seal)**

By _____
Attorney in Fact

NOTE: A copy of the power of attorney to local representatives of the bonding company must be attached hereto.

CERTIFICATE AS TO CORPORATE PRINCIPAL

I, _____, certify that I am the _____ Secretary of the corporation named as principal to the within bond; that _____ who signed the said bond on behalf of the principal was then _____ of said corporation; that I know his/her/their signature, and his/her/their signature thereto is genuine; and that said bond was duly signed, sealed and attested for and in behalf of said corporation by authority of its governing board.

_____
(Corporate Seal)

CERTIFICATE OF INSURANCE	ISSUE DATE (MM/DD/YY)
PRODUCER	THIS CERTIFICATE IS USSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW.
	COMPANIES AFFORDING COVERAGE
	Company Letter A
	Company Letter B
INSURED	Company Letter C
	Company Letter D
	Company Letter E

COVERAGES

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED, NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

CO LT R	TYPE OF INSURANCE	POLICY NO.	POLICY EFFECTIVE DATE (MM/DD/YY)	POLICY EXPIRATION DATE (MM/DD/YY)	LIMITS	
	GENERAL LIABILITY				GENERAL AGGREGATE	$
	☐ COMMERCIAL GENERAL LIABILITY				PRODUCTS-COMP/OP AGG.	$
	☐ CLAIMS MADE ☐ OCCURANCE				PERSONAL & ADV. INJURY	$
	☐ OWNER'S & CONTRACTOR'S PROT.				EACH OCCURRENCE	$
	☐ _____				FIRE DAMAGE (Any one fire)	$
	☐ _____				MED. EXPENSE (Any one person)	$
	AUTOMOBILE LIABILITY				COMBINED SINGLE LIMIT	$
	☐ ANY AUTO					
	☐ ALL OWNED AUTOS				BODILY INJURY (Per Person)	$
	☐ SCHEDULED AUTOS					
	☐ HIRED AUTOS				BODILY INJURY Per Accident	$
	☐ NON-OWNED AUTOS					
	☐ GARAGE LIABILITY				PROPERTY DAMATE	
	☐ _____					
	EXCESS LIABILITY				EACH OCCURRENCE	$
	☐ UMBRELLA FORM				AGGREGATE	$
	☐ OTHER THAN UMBRELLA FORM					
	WORKER'S COMPENSATION				STATUTORY LIMITS	
	AND				EACH ACCIDENT	$
	EMPLOYERS' LIABILITY				DISEASE -- POLICY LIMIT	$
					DISEASE -- EACH EMPLOYEE	$

THE FOLLOWING PROVISIONS APPLY:

1. None of the above-described policies will be canceled until after 30 days' written notice has been given to the Owner at the address indicated below.
2. The Owner, the members of its governing body, its officers, employees, agents and volunteers are added as insured on all liability insurance policies listed above.
3. It is agreed that any insurance or self-insurance maintained by the Owner will apply in excess of and not contribute with the insurance described above.
4. The Owner is named as a loss payee on the property insurance described above, if any.
5. All rights of subrogation under the property insurance policy listed above have been waived against the Owner
6. The worker's compensation insurer named above, if any, agrees to waive all rights of subrogation against the Owner for injuries to employees of the insured resulting from work for the Owner or use of the Owner's premises or facilities.

CERTIFICATE HOLDER ("OWNER")	CANCELLATION SHOULD ANY OF THE ABOVE-DESCRIBED POLICIES BE CANCELED BEFORE THE EXPIRATION DATE THEREOF, THE ISSUING COMPANY WILL MAIL THIRTY (30) DAYS WRITTEN NOTICE TO THE CERTIFICATE HOLDER NMAED TO THE LEFT, BUT FAILURE TO MAIL SUCH NOTICE SHALL IMPOSE NO OBLIGATION OR LIABILITY OF ANY KIND UPON THE COMPANY, ITS AGENTS OR REPRESENTATIVES AUTHORIZED REPRESENTATIVE

COMMERCIAL GENERAL LIABILITY ENDORSEMENT

ADDITIONAL INSURED – OWNERS, LESSEES OR CONTRACTORS

Insurer:	*This Endorsement Changes The Policy Please Read it Carefully*
Policy Number:	
Endorsement Number:	

POLICY TYPE: This endorsement modifies insurance provided under the following:

Commercial General Liability Coverage

SCHEDULE:

_____

Name of Public Entity ("Additional Insured")

If no entry appears above, the information required to complete this endorsement will be shown in the Declarations as applicable to this endorsement.

WHO IS AN INSURED is amended to include as an Additional Insured the person or organization shown in the Schedule, but only with respect to liability arising out of "your work" for that Additional Insured by or for you.

Modifications to Policy:

1. The Additional Insured shown in the Schedule above includes the members of its governing body, its officers, employees, agents and volunteers.

2. This insurance shall be primary as respects the Additional Insured shown in the Schedule above, or if excess, shall stand in an unbroken chain of coverage excess of the Named Insured's scheduled underlying primary coverage. In either event, any other insurance maintained by the Additional Insured shown in the Schedule above shall be in excess of this insurance and shall not be called upon to contribute with it.

3. This insurance shall afford coverage at least as broad as the latest version of Insurance Services Office Commercial General Liability coverage (occurrence form CG 0001).

4. The insurance afforded by this policy shall not be canceled except after thirty days prior written notice by certified mail return receipt requested has been given to the Additional Insured.

AUTHORIZED REPRESENTATIVE:

☐ Broker/Agent ☐ Underwriter ☐ _____

I, _____,
(print/type name) warrant that I have authority to bind the above-mentioned insurance company and by my signature hereon do so bind this company to this endorsement.

_____
Signature of Authorized Representative

_____
Address

_____ _____
Phone Number Date Signed

AUTOMOBILE LIABILITY SPECIAL ENDORSEMENT

For _____ (The Owner) SUBMIT IN DUPLICATE

	ENDORSEMENT NO.	ISSUE DATE (MM/DD/YY)
PRODUCER	POLICY INFORMATION: Insurance Company: Policy No.: Policy Period: (from) (to) LOSS ADJUSTMENT EXPENSE ☐ Included in Limits ☐ In Addition to Limits	
	☐ Deductible ☐ Self-Insured Retention (check which) of $_____	
NAME INSURED	APPLICABILITY. This insurance pertains to the operation and/or tenancy of the named insured under all written agreements and permits in force with the Additional Insured unless checked here ☐ in which case only the following specific agreements and permits with the City are covered: ADDITIONAL INSURED AGREEMENTS/PERMITS	
TYPE OF INSURANCE	OTHER PROVISIONS	
☐ Commercial Auto Policy ☐ Business Auto Policy ☐ Other _____		
LIMIT OF LIABILITY	CLAIMS: Underwriter's representative for claims pursuant to this insurance.	
$_____ per accident, for bodily injury and property damage.	Name: _____ Address: _____ Telephone: (____) _____	

In consideration of the premium charged and notwithstanding any inconsistent statement in the policy to which this endorsement is attached or any endorsement now or hereafter attached thereto, it is agreed as follows:

1. ADDITIONAL INSURED. The Owner, the members of its governing body, its officers, employees, agents and volunteers are included as insureds with regard to damages and defense of claims arising from: the ownership operation, maintenance, use, loading or unloading of any auto owned, leased, hired or borrowed by the Named Insured or for which the Name Insured is responsible.

2. CONTRIBUTION NOT REQUIRED. As respects work performed by the Named Insured for or on behalf of the Additional Insured, the insurance afforded by this policy shall: (a) be primary insurance as respects the Additional Insured; or (b) stand in an unbroken chain of coverage excess of the Named Insured's primary coverage. Any insurance or self-insurance maintained by the Additional Insured shall be excess of the Named Insured's insurance and not contribute with it.

3. CANCELLATION NOTICE. With respect to the interests of the Additional Insured, this insurance shall not be canceled, except after thirty (30) days prior written notice, by receipted delivery, has been given to the Additional Insured.

4. SCOPE OF COVERAGE. This policy affords coverage at least as broad as:
   (1) If primary, Insurance Services Office form number CA0001, Code 1 ("any auto"); or
   (2) If excess, affords coverage which is at least as broad as the primary insurance forms referenced in the preceding section (1).

Except as stated above, nothing herein shall be held to waive, alter or extend any of the limits, conditions, agreements or exclusions of the policy to which this endorsement is attached.

ENDORSEMENT HOLDER	
OWNER	AUTHORIZED REPRESENTATIVE ☐ Broker/Agent ☐ Underwriter ☐ _____ I, _____, (print/type name) warrant that I have authority to bind the above mentioned insurance company and by my signature hereon do so bind this company to this endorsement. Signature _____ (original signature required) Telephone: (_____) _____ Date Signed: _____

WORKERS' COMPENSATION AND EMPLOYER'S LIABILITY SPECIAL ENDORSEMENT

<table>
<tr><td colspan="2">WORKERS' COMPENSATION AND EMPLOYER'S LIABILITY
SPECIAL ENDORSEMENT

SUBMIT IN DUPLICATE</td><td colspan="2">SUBMIT IN DUPLICATE</td></tr>
<tr><td colspan="2" rowspan="2">For _____ (The Owner)</td><td>ENDORSEMENT NO.</td><td>ISSUE DATE (MM/DD/YY)</td></tr>
<tr><td colspan="2"></td></tr>
<tr><td colspan="2">PRODUCER</td><td colspan="2">POLICY INFORMATION:
Insurance Company:
Policy No.:
Policy Period: (from) (to)</td></tr>
<tr><td colspan="2">NAMED INSURED</td><td colspan="2">OTHER PROVISIONS</td></tr>
<tr><td colspan="2">CLAIMS: Underwriter's representative for claims pursuant to this insurance.

Name: _____

Address: _____

Telephone: _____</td><td colspan="2">EMPLOYERS LIABILITY LIMITS

$ _____ (Each Accident)

$ _____ (Disease – Policy Limit)

$ _____ (Disease – Each Employee)</td></tr>
<tr><td colspan="4">In consideration of the premium charged and notwithstanding any inconsistent statement in the policy to which this endorsement is attached or any endorsement now or hereafter attached thereto, it is agreed as follows:

1. CANCELLATION NOTICE. This insurance shall not be canceled, except after thirty (30) days prior written notice, by receipted delivery, has been given to the Owner.

2. WAIVER OF SUBROGATION. This insurance company agrees to waive all rights of subrogation against the Owner, the members of its governing body, its officers, employees and volunteers for losses paid under the terms of this policy which arise from the work performed by the Named Insured for the Owner.

Except as stated above, nothing herein shall be held to waive, alter or extend any of the limits conditions, agreements or exclusions of the policy to which this endorsement is attached.</td></tr>
<tr><td colspan="2">ENDORSEMENT HOLDER</td><td colspan="2"></td></tr>
<tr><td colspan="2">OWNER</td><td colspan="2">AUTHORIZED REPRESENTATIVE □ □ □
_____
_____
_____
_____
_____</td></tr>
</table>

ESCROW AGREEMENT FOR SECURITY DEPOSITS IN LIEU OF RETENTION

This Escrow Agreement is made and entered into by and between _____
whose address is _____
hereinafter called "Owner," _____
whose address is _____
hereinafter called "Contractor" and _____
whose address is _____
hereinafter called "Escrow Agent."

For the consideration hereinafter set forth, the Owner, Contractor, and Escrow Agent agree as follows:

(1) Pursuant to Section 22300 of the Public Contract Code of the State of California, Contractor has the option to deposit securities with Escrow Agent as a substitute for retention earnings required to be withheld by Owner pursuant to the Construction Contract entered into between the Owner and Contractor for Annual Waterline Replacement Project – 44th Street Area and Glenroy Court Intertie in the amount of _____ ($ _____) dated _____ (hereinafter referred to as the "Contract"). Alternatively, on written request of the Contractor, the Owner shall make payments of the retention earnings directly to the escrow agent. When Contractor deposits the securities as a substitute for Contract earnings, the Escrow Agent shall notify the Owner within 10 days of the deposit. The market value of the securities at the time of the substitution shall be at least equal to the cash amount then required to be withheld as retention under the terms of the Contract between the Owner and Contractor. Securities shall be held in the name of _____ _____, and shall designate the Contractor as the beneficial Owner.

(2) The Owner shall make progress payments to the Contractor for such funds which otherwise would be withheld from progress payments pursuant to the Contract provisions, provided that the Escrow Agent holds securities in the form and amount specified above.

(3) When the Owner makes payment of retention earned directly to the escrow agent, the escrow agent shall hold them for the benefit of the Contractor until such time as the escrow created under this contract is terminated. The Contractor may direct the investment of the payments into securities. All terms and conditions of this agreement and the rights and responsibilities of the parties shall be equally applicable and binding when the Owner pays the escrow agent directly.

(4) Contractor shall be responsible for paying all fees for the expenses incurred by Escrow Agent in administering the Escrow Account and all expenses of the Owner. These expenses and payment terms shall be determined by the Owner, Contractor, and Escrow Agent.

(5) The interest earned on the securities or the money market accounts held in escrow and all interest earned on that interest shall be for the sole account of Contractor and shall be subject to withdrawal by Contractor at any time and from time to time without notice to the Owner.

(6) Contractor shall have the right to withdraw all or any part of the principal in the Escrow Account only by written notice to Escrow Agent accompanied by written authorization from the Owner to the Escrow Agent that Owner consents to the withdrawal of the amount sought to be withdrawn by Contractor.

(7) The Owner shall have a right to draw upon the securities in the event of default by the Contractor. Upon seven days' written notice to the Escrow Agent from the Owner of the default, the Escrow Agent shall immediately convert the securities to cash and shall distribute the cash as instructed by the Owner.

(8) Upon receipt of written notification from the Owner certifying that the Contract is final and complete, and that the Contractor has complied with all requirements and procedures applicable to the Contract, Escrow Agent shall release to Contractor all securities and interest on deposit less escrow fees and charges of the Escrow Account. The escrow shall be closed immediately upon disbursement of all moneys and securities on deposit and payments of fees and charges.

(9) Escrow Agent shall rely on the written notifications from the Owner and the Contractor pursuant to Sections (5) to (8), inclusive, of this agreement and the Owner and Contractor shall hold Escrow Agent harmless from Escrow Agent's release and disbursement of the securities and interest as set forth above.

(10) The names of the persons who are authorized to give written notice or to receive written notice on behalf of the Owner and on behalf of Contractor in connection with the foregoing, and exemplars of their respective signatures are as follows:

On behalf of Owner:	On behalf of Contractor:
_____	_____
Title	Title
_____	_____
Name	Name
_____	_____
Signature	Signature
_____	_____
Address	Address

At the time the Escrow Account is opened, the Owner and Contractor shall deliver to the Escrow Agent a fully executed counterpart of this Agreement.

IN WITNESS WHEREOF, the parties have executed this Agreement by their property officers on the date first set forth above.

Owner:

_____
Title

_____
Name

_____
Signature

Contractor:

_____
Title

_____
Name

_____
Signature

Escrow Agent:

_____
Title

_____
Name

_____
Signature

_____
Address

GENERAL CONDITIONS

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“GENERAL CONDITIONS”

1. Definitions

Wherever words defined here, or pronouns used in their stead, occur in any of the contract documents, they shall have the following meanings:

a. The word "Owner" or "District" shall mean the Jurupa Community Services District. The term "Agent" when used with reference to the District, shall include the District's officers, agents, consultants, and employees.

b. The term "General Manager of the Jurupa Community Services District shall mean the person designated by the Board of Directors of the Jurupa Community Services District to have charge, supervision, and administration of the Jurupa Community Services District and shall be hereinafter called the "Manager".

The Manager may, at their option, designate a person or persons to represent them to have charge, supervision, administration, inspecting, and reporting on the work as it progresses. This person shall be considered the “Owner’s Representative”.

c. The word "Contractor" shall mean the successful bidder who is entering into this contract with the Jurupa Community Services District, Riverside County, California, for the furnishing of the material, equipment, and/or services specified in this contract, and the legal representatives of said party, or the agent appointed to act for said party in the execution of the contract. Said party is referred to throughout the contract documents as if of the singular number and the masculine gender. The Contractor shall hold a valid Contractor's license in accordance with the provisions of Division 3, Chapter 9 of the Business and Professions Code of the State of California, and all amendments thereto.

d. "Project Engineer" shall mean the Registered Professional Engineer designated by the Owner to give the work general engineering supervision. The term "Project Engineer" shall mean the independently contracting professional consultant retained by the Owner on an ongoing basis to perform engineering services on behalf of the Owner and to advise the Owner's Board of Directors and staff on engineering matters. Under this contract the Project Engineer is the Agent of the Owner and the General Manager for all purposes, and shall initiate such action, or carry out such instructions, or both, as is required to assure full compliance by the Contractor with these contract documents. The Project Engineer has full authority and responsibility, consistent with the Manager's instructions, for contract compliance, and shall make all technical engineering decisions hereunder.

e. "Owner Property" shall mean any work site upon which the Contractor shall be required to perform under the contract including private property, property owned in-fee by the Owner of upon which it holds an appropriate lease, right of way, license, or encroachment permit.

f. **"Liquidated Damages" as defined under Section 20 of this General Conditions shall be $2,000 per day.**

g. "County" whenever used shall mean Riverside County, California.

2. Authority of the Manager

a. Power of Decision. The Manager shall decide every question regarding the interpretation of these contract documents or the true meaning or import of any provisions contained therein. A dispute which arises from the Manager's final decision shall be submitted to independent arbitration, if mutually agreeable to the parties; otherwise by litigation in a court of competent jurisdiction.

b. No Power to Waive Contract. It is expressly agreed that neither the Manager nor any of their assistants or agents, shall have any power to waive the obligation of the contract for the performance of work and/or furnishing by the Contractor of the equipment and/or material conforming to the Special Requirements, Basic Specifications, Plans, Technical Specifications, and Standard Drawings.

c. Access to Contractor's Plant. The Manager, their assistants, inspectors, and agents shall at all times have immediate access to all parts of the Contractor's plant(s) where the production of any equipment and/or material for delivery under this agreement is in progress and shall be afforded there, without charge to the Owner, full facilities for determining that all said equipment and/or material is being produced so as to comply strictly with the Special Requirements, Basic Specifications, Plans, Technical Specifications, and Standard Drawings.

d. Access to Site of Work. The Manager, their assistants, inspectors, and agents shall at all times have immediate access to the site of the work and to all parts of the Contractor's plant used in conjunction with work being performed hereunder on Owner property and shall be afforded there, without charge to the Owner, full facilities for determining that all said work is being performed so as to comply strictly with the Special Requirements, Basic Specifications, Plans, Technical Specifications, and Standard Drawings.

3. Legal Address of Contractor

The address given at the end of the Contractor's proposal herein, is designated as the place to which all notices, letters, and other communications to the Contractor shall be mailed or delivered. The mailing to or delivering at the above named place of any

notice, letter, or other communication to the Contractor shall be deemed sufficient service thereof upon the Contractor. The date of service shall be the date of such mailing or delivery. Such address may be changed at any time by a written notice signed by the Contractor and hand delivered to the Manager. Nothing herein contained shall be deemed to preclude or render inoperative the service of any notice, letter, or other communication upon the Contractor personally.

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

4. Contractor Responsibility

a. Cooperation with Manager. The Contractor shall comply with all orders of the Manager in regard to maintaining an adequate progress, but neither the making of such demands nor the failure of the Manager to make such demands shall relieve the Contractor of their obligation to secure the quality of equipment and/or material and/or performance of work and the rate of delivery of said equipment and/or material and/or completion of work as stipulated in the contract, and the Contractor alone shall be responsible for the safety, efficiency, and adequacy of their plant, equipment, appliances, and methods, and for any damage which may result from their failure or their improper construction, maintenance, or operation.

b. Examination of Site and Documents. Before commencing any portion of the Work, Contractor shall again carefully examine the Special Requirements, Basic Specifications, Plans, Technical Specifications, and Standard Drawings, has visited and examined the delivery route(s) and the installation site for equipment and/or materials which the Contractor has agreed to supply herein, and/or the work site upon which the Contractor has agreed to perform herein and is familiar with local conditions which may affect the Contractor's manufacture and delivery of the said equipment and/or materials, and/or performance of said work, and that except as provided herein the Contractor will make no claims for additional compensation over and above the quotations set forth in the Bidding Documents because of difficulties, real or anticipated. Contractor shall immediately notify the Owner's Representative 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. 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.

c. Contractor Furnish Information. Before proceeding with the erection of temporary structures, including sheeting, bracing, upon the property of the Owner,

the Contractor shall furnish the Manager with information and drawings of all such structures as may be required by the Manager. Drawings and prints in such detail as may be required of articles, machinery, or fabricated materials entering into permanent construction which are by the Special Requirements, Basic Specifications, Plans, Technical Specifications, and Standard Drawings, required to be furnished by the Contractor and of which detailed drawings are not furnished by the Owner, shall be submitted by the Contractor for approval and shall become the property of the Owner; such approval shall not, however, operate to waive or modify any provision or requirement contained in the Special Requirements, Basic Specifications, Plans, Technical Specifications, and Standard Drawings.

d. Specifications and Drawings. The Contractor shall keep at their place(s) of work hereunder a copy of the Special Requirements, Basic Specifications, Plans, Technical Specifications, and Standard Drawings and shall at all times give the Manager access thereto. The Contractor shall check all dimensions and quantities on the drawings or schedules herein contained or given to them by the Manager and shall notify the Manager of all errors therein which may be discovered by examining and checking the drawings. The Contractor shall not take advantage of any error or omission in the Plans, Special Requirements, Basic Specifications, or in the Standard Drawings or schedules, as full instructions will be furnished by the Manager should such error omission be discovered, and the Contractor shall carry out such instructions as if originally specified. In the event of conflicts between the Specifications and Drawings, the requirements of the Specifications shall take precedence over those of the Drawings.

e. Risk of Loss. Until by the formal acceptance by the Owner of the performance of the Contractor hereunder, either by furnishing equipment and/or materials or by performance of work, the Contractor shall have the charge and care thereof and shall bear the risk of injury or damage to any part thereof by the action of the elements and from any other cause, whether arising from the execution or from the non-execution of the work. The Contractor shall rebuild, repair, restore and replace, and make good all injuries or damages to any portion of that which they are to improve, provide or complete thereunder occasioned by any of the above causes before completion and acceptance and shall bear the expense thereof, except for such injuries or damages as are occasioned by acts of the Federal Government or the public enemy, and only to the extent of 5% of the contract amount where such injuries or damages are proximately caused by an act of God. In case of suspension of work from any cause whatsoever, the Contractor shall be responsible for all equipment and/or materials then upon Owner property and shall properly store them, if necessary, and shall erect temporary structures where necessary in so doing. Nothing in this contract shall be considered as vesting in the Contractor any right of property in materials used after they have been attached or affixed to the work or the soil upon Owner real property, but all such materials shall upon being so attached or so affixed, become the property of the Owner.

f. Copyrights and Patents. The Contractor shall and does hereby hold and save the Owner, its officers, agents, and employees harmless from liability of any nature and kind, including costs and expenses, for or on account of any copyrighted or uncopyrighted composition, secret process, patented or unpatented invention, article or appliance, manufactured, furnished, or used by the Contractor in the performance of this contract, including their use by the Owner unless otherwise specifically stipulated in this contract.

g. Contractor's Personal Attention and Supervision. The Contractor shall give their personal attention constantly to the faithful prosecution of the work, and shall be present, either in person or be represented by a duly authorized and competent representative, on the site of the work, continually during progress of any work hereunder upon Owner property, to receive directions or instruction from the Manager. Whenever the Contractor is not present on any part of the said work where it may be desired to give directions, orders may be given by the Manager and shall be received and obeyed by the superintendent or foreman who may have charge of the particular part of the work in reference to which orders are given.

h. Materials and Workmanship. All materials furnished by the Contractor shall be new and of the best quality for their particular use. Work shall be performed by skilled workmen fully qualified for their trade and shall be subject to the approval of the Manager.

The Contractor shall submit to the Manager samples, specimens, or test pieces of such materials to be furnished or used in the work as the Manager may require. All materials must be of the specified quality and equal to approved sample, if samples have been submitted. All work shall be done and completed in a thorough, workmanlike manner, notwithstanding any omission from the Special Requirements, Basic Specifications, Plans, or the Standard Drawings.

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.

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 Work to the District free from any claims, liens, or charges.

Materials shall be stored on the Work site in such manner so as not to interfere with any operations of the District or any independent contractor.

i. Testing. The testing of any materials or of any portions of the job under construction shall be at the option of the Owner's field representative. The Contractor shall furnish, without charge, any materials requested for testing in accordance with Section 4 of the Greenbook, Standard Specifications for Public Works Construction (latest edition). The Contractor shall also provide access to any area of the job for testing. The charges for normal testing will be paid by the Owner. Normal testing shall be deemed to be the testing required by the Standard Specifications and/or the Inspector. Extra testing required, due to test failures, will be at the Contractor's expense, either as a billing or as a deduction from contract payment. The Contractor shall notify the Owner's field representative of the readiness of any phase of construction to be tested and shall not proceed with any subsequent phase of work until the results of the test are known and approved. Testing shall be performed by a private laboratory, selected by the Owner.

j. Laws and Regulations. The Contractor shall keep themself fully informed of all laws, ordinances and regulations in any manner affecting those engaged or employed on the contract work, or the materials used in the contract work, or in any way affecting the conduct of the contract work, and of all orders and decrees of bodies or tribunals having any jurisdiction or authority over the same. If any discrepancy or inconsistency should be discovered in this contract, or in the Special Requirements, Basic Specifications, Plans, or Standard Drawings herein referred to, in relation to any such law, ordinance, regulation, order, or decree, the Contractor shall forthwith report the same in writing to the Manager. The Contractor shall at all times themself observe and comply with and shall cause all their agents and employees to observe and comply with all such applicable laws, ordinances, regulations, orders, and decrees in effect or which may become effective before completion of this contract; and shall protect and indemnify the Owner and its officers and agents against any claim or liability arising from or based on the violation of any such law, ordinance, regulations, order, or decree, whether by the Contractor, by the Contractor’s employee or by a subcontractor. Except as otherwise explicitly provided elsewhere in the Special Requirements, Basic Specifications, Plans, or Standard Drawings, all permits and/or licenses necessary to the prosecution of the contract work shall be secured by the Contractor at their own expense, and they shall pay all taxes properly assessed against their equipment or property used or required in connection with the work.

k. Removing Obstructions and Maintenance of Existing Improvements. When the work hereunder involves performance upon Owner property, and when the proper completion of the said work requires their temporary or permanent removal, the Contractor shall, at their own expense, remove, and without unreasonable delay temporarily or permanently replace or relocate in a workmanlike manner and to the satisfaction of the Owner and of any other person or agency having jurisdiction, all water pipes, gas pipes, drainage lines, irrigation lines, sewer lines, pipelines, conduits, culverts, roads, driveways, fences, bridges, railroad tracks, wires, poles, towers, retaining walls, buildings, curbs, gutters, concrete walks, trees, shrubs, lawns, and all other improvements of whatsoever character not

required by law to be removed by the owner thereof; and all such improvements temporarily removed shall be maintained until permanently replaced, all at the Contractor's expense.

Where the work is to be constructed in or adjacent to areas which have been improved by lawns, trees, shrubs, or gardens, the Contractor shall remove such trees or plants as may be necessary for the prosecution of the work and give them proper care and attention until the work has been satisfactorily completed, after which the Contractor shall replace them in as nearly the original condition and location as is reasonably possible. Where it is necessary to deposit the excavated materials on lawns during the process of construction, the Contractor shall first lay burlap or canvas on the lawn to prevent contact between the excavated material and the lawn.

Unless otherwise indicated in the Special Requirements, Basic Specifications, Technical Specifications, Plans, and Standard Drawings, or unless otherwise cared for by the owner of a public utility or franchise, all water, gas, oil, or irrigation lines, lighting, power, or telephone conduits or wires, or sewer lines, structures, or house connections in place, and all other surface or subsurface structures or lines shall be maintained by the Contractor and shall not be disturbed, disconnected, or damaged by the Contractor during the progress of the work; provided, that should the Contractor in the performance of the work disturb, disconnect, or damage any of the above, all expenses, of whatever nature, arising from such disturbance, or in the replacement or repair thereof, shall be borne by the Contractor. However, in accordance with Section 4215 of the California Government Code, the Contractor shall be compensated for the cost of locating and repairing damage to main or trunkline utility facilities located on the jobsite, not due to the failure of the Contractor to exercise reasonable care; for costs of removing or relocating such utility facilities not indicated in the Contract Documents with reasonable accuracy; and for the operating costs for equipment on the project necessarily idled during such work.

At least two working days prior to commencing any excavation pursuant to this Contract, the Contractor shall contact Underground Service Alert or other appropriate regional notification center if the excavation will be conducted in an area which is known, or reasonably should be known, to contain subsurface installations.

l. Clean Up. 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, windowsills 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.

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, the District may do so and the cost of such clean up shall be charged back to the Contractor.

5. Contractor's Liability

Contractor shall defend (with counsel of District's choosing), indemnify and hold the 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, and including without limitation the payment of all consequential damages and other related costs and expenses. Contractor shall defend, at Contractor's own cost, expense, and risk, with counsel of District's 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.

6. Safety

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 the 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 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 Owner's Representative, 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 Owner's Representative or the District. Any compensation claimed by Contractor on account of emergency work shall be determined by and agreed upon by the 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 Work site over a route designated by the applicable local jurisdiction.

4) Provide any and all dust control required and follow the applicable air quality regulations as appropriate. If the Contractor does not comply, the 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 Owner's Representative. Contractor shall not unreasonably encumber the Work 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 the 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 the 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 Work 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.

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 therefor.

e. 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. The District shall be entitled to inspect and copy any such documentation, video, or photographs.

7. Trespass

The Contractor shall be responsible for all damage or injury which may be caused on any property by trespass of the Contractor, their agents, employees, or subcontractors in the course of performance of work hereunder, whether the said trespass was committed with or without the consent or knowledge of the Contractor.

8. Insurance

a. *General*: Promptly, upon execution of the contract and prior to commencement of any work, Contractor shall furnish the Owner certificates of insurance covering all policies providing the insurance required hereunder. Said certificates shall be signed on behalf of the insurer by an authorized representative thereof and the signature of the insurer's authorized representative shall be notarized.

Contractor agrees, upon written request, to furnish Owner with copies of all required policies, certified by an authorized representative of the insurer. All insurance issued under the provisions of this section shall be issued in a form and by insurance organizations approved by the Owner, prior to commencement of performance hereunder.

b. *Time for Compliance*: The Contractor shall not commence work under this Contract until the Contractor has provided evidence satisfactory to the Owner that the Contractor has secured all insurance required under this section. In addition, Contractor shall not allow any subcontractor to commence work on any subcontract until the Contractor has provided evidence satisfactory to the Owner that the subcontractor has secured all insurance required under this section.

c. *Minimum Requirements*: Contractor shall, at their expense, procure and maintain for the duration of the Contract, insurance against claims for injuries to persons or damages to property which may arise from or in connection with the performance of the work hereunder by the Contractor, the Contractor's agents, representatives, employees, or subcontractors. Contractor shall also require all of their subcontractors to procure and maintain the same insurance for the duration of the Contract. Such insurance shall meet at least the following minimum levels of coverage:

Minimum Scope of Insurance: Coverage shall be at least as broad as the latest version of the following:

(1) *General Liability*: Insurance Services Office Commercial General Liability coverage (occurrence form CG 0001).

(2) *Automobile Liability*: Insurance Services Office Business Auto Coverage form number CA 0001, code 1 (any auto).

(3) *Workers' Compensation and Employers' Liability*: Workers' Compensation insurance as required by the State of California and Employer's Liability Insurance.

(4) *Builders'/All Risk*: Builders'/All Risk insurance covering for all risks of loss (including earthquakes and floods if requested by the Owner).

Minimum Limits of Insurance: Contractor shall maintain limits no less than:

(1) *General Liability*: $2,000,000 per occurrence for bodily injury, personal injury, and property damage. If Commercial General Liability Insurance or other form with a general aggregate limit is used, either the general aggregate limit shall apply separately to this project/location or the general aggregate limit shall be twice the required occurrence limit.

(2) *Automobile Liability*: $1,000,000 per accident for bodily injury and property damage.

(3) *Workers' Compensation and Employer's Liability*: Workers' compensation limits as required by the Labor Code of the State of

California. Employers Liability limits of $1,000,000 per accident for bodily injury or disease.

(4) *Builders'/All Risk*: Completed value of the project.

d. *Insurance Endorsements*: The insurance policies shall contain the following provisions, or Contractor shall provide endorsements on forms supplied or approved by the Owner to add the following provisions to the insurance policies:

(1) *General Liability*: (1) The Owner, its directors, officers, employees, agents, and volunteers, if any shall be covered as additional insureds with respect to the work or operations performed by or on behalf of the Contractor, including materials, parts or equipment furnished in connection with such work; and (2) the insurance coverage shall be primary insurance as respects the Owner, its directors, officers, employees, agents, and volunteers, or if excess, shall stand in an unbroken chain of coverage excess of the Contractor's scheduled underlying coverage. Any insurance or self-insurance maintained by the Owner, its directors, officers, employees, agents, and volunteers shall be excess of the Contractor's insurance and shall not be called upon to contribute with it.

(2) *Automobile Liability*: (1) The Owner, its directors, officers, employees, agents, and volunteers, if any shall be covered as additional insureds with respect to the ownership, operation, maintenance, use, loading or unloading of any auto owned, leased, hired or borrowed by the Contractor or for which the Contractor is responsible; and (2) the insurance coverage shall be primary insurance as respects the Owner, its directors, officers, employees, agents, and volunteers or if excess, shall stand in an unbroken chain of coverage excess of the Contractor's scheduled underlying coverage. Any insurance or self-insurance maintained by the Owner, its directors, officers, employees, agents, and volunteers shall be excess of the Contractor's insurance and shall not be called upon to contribute with it.

(3) *Workers' Compensation and Employers Liability Coverage*: The insurer shall agree to waive all rights of subrogation against the Owner, its directors, officers, employees, agents, and volunteers for losses paid under the terms of the insurance policy which arise from work performed by the Contractor.

(4) *All Coverages*: Each insurance policy required by this contract shall be endorsed to state that: (1) coverage shall not be canceled except after thirty (30) days prior written notice by certified mail, return receipt requested, has been given to the Owner; 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 Owner, its directors, officials, officers, employees, agents, and volunteers, if any.

e. *Builder's/All Risk Policy Requirements*: The builders'/all risk insurance shall provide that the Owner be named as loss payee. In addition, the insurer shall waive all rights of subrogation against the Owner. The making of progress payments to the Contractor shall not be construed as creating and insurable interest by or for the Owner, or as relieving the Contractor or its subcontractors of any responsibility for loss from any direct physical loss, damage or destruction covered by the builders'/all-risk policy occurring prior to final acceptance of the work by the Owner.

f. *Separation of Insureds; No Special Limitations*: All insurance required by this Section shall contain standard separation of insureds provisions. In addition, such insurance shall not contain any special limitations on the scope of protection afforded to the Owner, its directors, officers, employees, agents, and volunteers and named consultants, if any.

g. *Deductibles and Self-Insurance Retentions*: Any deductibles or self-insured retentions must be declared to and approved by the Owner. Contractor shall guarantee that, at the option of the Owner, either: (1) the insurer shall reduce or eliminate such deductibles or self-insurer retentions as respects the Owner, its directors, officers, employees, agents, and volunteers; or (2) the Contractor shall procure a bond guaranteeing payment of losses and related investigation costs, claims, and administrative and defense expenses.

h. *Acceptability of Insurers*: Insurance is to be placed with insurers with a current A.M. Best's rating no less than A:VIII, licensed to do business in California, and satisfactory to the Owner.

i. *Verification of Coverage*: Contractor shall furnish Owner and named associates, if any, with original certificates of insurance and endorsements effecting coverage required by this contract. The certificates and endorsements for each insurance policy shall be signed by a person authorized by that insurer to bind coverage on its behalf and shall be on forms supplied or approved by the Owner. All certificates and endorsements must be received and approved by the Owner before work commences. The Owner reserves the right to require complete, certified copies of all required insurance policies, at any time.

j. *Subcontractors*: All subcontractors shall meet the requirements of this Section before commencing work. In addition, Contractor shall include all subcontractors as insureds under its policies or shall furnish separate certificates and endorsements for each subcontractor. All coverages for subcontractors shall be subject to all of the requirements stated herein.

9. Agents of Owner not Personally Liable

No agent of the Owner shall be personally responsible for any liability arising under this contract, and no claim shall be made or filed, and neither the Owner nor any of its agents shall be liable for or held to pay any money, except as specifically provided in this contract.

10. Subcontracts

a. The provisions of the Subletting and Subcontracting Fair Practices Act found in the California Government Code are incorporated herein and made a part hereof by this reference. Each bidder shall set forth in their proposal the name and location of the place of business of each subcontractor who will perform work or labor or render service to the general contractor in or about the construction of the work, or who will specifically fabricate and install a portion of the work or improvement according to detailed drawings contained in the plans and specifications, such work being in an amount in excess of one-half of one percent (1/2 of 1%) of the general contractor's total bid.

b. It is the Owner's intent that the work shall be performed and constructed by a Contractor who is staffed and equipped to construct the major portion of the work with their own directly employed personnel and with the minimum feasible subcontracting. Subcontracting may be permitted by the Owner to such extent as is shown to be necessary or advantageous to the Contractor without injury to the intent and interests of the Owner. In general, it is the Owner's intent that subcontracting shall be limited to not more than forty-five percent (45%) of the value of the work. Any bid proposing subcontracting in excess of this limit is subject to rejection at the discretion of the Owner.

c. A copy of each subcontract, if in writing, or if not in writing, then a written statement signed by the Contractor, giving the name of the subcontractor, and the terms and conditions of such subcontract, shall be filed with the Manager before the subcontractor begins work. Each subcontract shall contain a reference to the agreement between the Owner and the Contractor, and the terms of that agreement and all parts thereof shall be made a part of such subcontract insofar as applicable to the work covered thereby. Each subcontract shall provide for its annulment by the Contractor at the order of the Manager, if, in the Manager's opinion, the subcontractor fails to comply with the requirements of the principal contract insofar as the same may be applicable to the Contractor’s work. Nothing herein contained shall create any contractual relation between any subcontractor and the Owner or relieve the Contractor of any liability or obligation hereunder.

d. The Contractor is hereby alerted to provisions of Section 7107 of the Public Contract Code, requiring the Contractor to pay to each of their subcontractors from whom retention has been withheld, each subcontractor's share of the retention

received, within 7 days from the time that all or any portion of such retention proceeds are received by Contractor from the Owner.

11. Assignment Forbidden

The Contractor shall not assign, transfer, convey or otherwise dispose of this contract, or of the Contractor's right, title or interest in or to the same or any part thereof, without the previous consent in writing of the Manager; and the Contractor shall not assign by power of attorney, or otherwise, any of the moneys to become due and payable under the contract, unless by and with the like consent signified in like manner. If the Contractor shall, without such previous written consent, assign, transfer, convey, or otherwise dispose of the contract, or of the Contractor's right, title or interest therein, or of any of the moneys to become due under the contract to any other person, company, or other corporation, the contract may, at the option of the Owner, be terminated and revoked, and the Owner shall thereupon be relieved and discharged from any and all liability and obligation growing out of the same to the Contractor, and to the Contractor's assignee or transferee. No right under the contract, nor any right to any money to become due hereunder, shall be asserted against the Owner in law or equity by reason of any so-called assignment of the contract, or any part thereof, or by reason of the assignment of any moneys to become due hereunder, unless authorized as aforesaid by the written consent of the Manager.

12. Lines, Grades, and Measurements

Unless otherwise provided in the Special Requirements, any and all lines and grades will be furnished by the Owner. The Contractor shall provide such materials and give such assistance as may be required. The Contractor shall preserve all benchmarks, monuments, survey marks, and stakes upon Owner property, and in case of their removal or destruction by the Contractor, the Contractor's employees, or the Contractor's subcontractors, the Contractor shall be liable for the cost of their replacement. The Contractor shall keep the Manager informed, a reasonable time in advance, of the times and places at which the Contractor intends to do work, in order that lines and grades may be furnished, that inspection may be provided and that necessary measurements for record and payment may be made with the minimum of inconvenience to the Manager or delay to the Contractor. Whenever the Manager finds it necessary to carry on the Manager's operations outside of regular working hours or at other times when the work of the Contractor is not in progress, the Contractor shall furnish all necessary service and assistance. No payment shall be made to the Contractor for any of the work or delay occasioned by giving lines and grades, or making other necessary measurements, or by inspection.

13. Domestic Materials and Machinery (See Note)

In the performance of this contract, there shall be used only such unmanufactured articles, materials and supplies as have been mined or produced in the United States, and only such manufactured articles, materials and supplies as have been mined,

produced, or manufactured, as the case may be, in the United States, substantially all from materials produced in the United States in accordance with Section 4300 through 4305 of the Government Code of California, except to the extent, if any, that such provision may be superseded by any law or treaty of the United States. (Note: This provision is included within the General Conditions as required by the provisions of Sections 4300-4305 of the Government Code. However, the Owner will not enforce this provision by reason of Bethlehem Steel Corp. v. Board of Commissioners (1969) 276 C.A. 2d 221, which held Sections 4300-4305 to be unconstitutional.)

14. No Discrimination

The Contractor shall not discriminate in the employment of persons upon the contract work because of their race, religious creed, color, national origin, ancestry, physical handicap, medical condition, marital status, or sex except as provided in Section 1420 of the California Labor Code. The Contractor shall require a clause to this effect to be included in every subcontract to perform work under this contract.

15. Eight-Hour Law

Except as otherwise provided the California Labor Code, eight hours of labor shall constitute a legal day's work, and the time of service of any workman employed on the work shall be limited and restricted to eight hours during any one calendar day, and forty hours in any one calendar week, except when payment of overtime is made. The Contractor shall be subject to Civil liabilities and penalties for each workman employed in the execution of this contract by the Contractor, or by any subcontractor under the Contractor, for each calendar day during which such workman is not paid for overtime in violation of the provisions of said Labor Code.

16. Prevailing Rates of Wages

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 Work 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 the District. Contractor shall make copies of the prevailing rates of per diem wages for each craft, classification or type of worker needed to perform the Work available to interested parties upon request and shall post copies at the Contractor’s principal place of business and at the Work site. Contractor shall defend, indemnify, and hold the 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.

The Contractor and each subcontractor shall forfeit as a penalty to the 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 the Contractor, or by any subcontract under the Contractor, 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. Contractor shall post, at appropriate conspicuous points on the Work site, a schedule showing all determined general prevailing wage rates and all authorized deductions, if any, from unpaid wages actually earned.

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 on a weekly basis and in the format prescribed by the Department of Industrial Relations, which may include electronic submission. Contractor shall comply with all requirements and regulations from the Department of Relations relating to labor compliance monitoring and enforcement.

This Project is subject to compliance monitoring and enforcement by the Department of Industrial Relations. The Contractor shall have an affirmative obligation to verify that all subcontractors are currently and validly registered with the Department of Industrial Relations and shall not permit a subcontractor of any tier to perform work on the project without first verifying the subcontractor's registration. The Contractor 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 valid registration for the duration of the project.

17. Mandatory Certification of Contractor and Employment of Apprentices

This contract shall not prevent the employment of properly indentured apprentices in accordance with the California Labor Code, and no employer or labor union shall refuse to accept otherwise qualified employees as indentured apprentices on the work performed hereunder solely on the ground of race, creed, national origin, ancestry, color, or sex. Every qualified apprentice shall be paid the standard wage paid to apprentices under the regulations of the craft or trade in which apprentice is employed and shall be employed only in the craft or trade to which apprentice is indentured.

If California Labor Code Section 1777.5 applies to the Contract Work, the Contractor, and any subcontractor hereunder who employ workmen in any apprenticeable craft or trade shall apply to the joint apprenticeship committee administering applicable standards for a certificate approving the Contractor and any subcontractor for the employment and training of apprentices. Upon issuance of this certificate the Contractor and any subcontractor shall employ the number of apprentices provided for therein, as

well as contribute to the fund to administer the apprenticeship program in each craft or trade in the area of the work hereunder.

The parties hereto expressly understand that the responsibility for compliance with this Section No. 17 and with Sections 1777.5, 1777.6 and 1777.7 of the California Labor Code in regard to all apprenticeable occupations lies with the Contractor.

18. Payment of Wages

The issuance as payment for wages of any evidence of indebtedness is prohibited unless the same is negotiable and payable on demand without discount. Wages must be paid at least semi-monthly on regular pay days established in advance and shall include all amounts for labor or services performed by employees of every description, as required under the California Labor Code.

19. Overtime - No Extra Compensation

Overtime work shall not entitle the Contractor to any compensation for any contract item in addition to that stipulated in the contract for the kind of work performed, even though such overtime or legal holiday work may be required under emergency conditions and may be ordered by the Manager. In case of extra work ordered by the Manager under the provisions hereof, no additional payment will be made to the Contractor because of the payment by the Contractor of overtime or legal holiday rates for such work, unless the use of overtime or legal holiday rates in connection with such extra work is specifically ordered by the Manager and then only to such extent as extra payment is regularly being made by the Contractor to the Contractor's men for overtime or legal holiday work of a similar nature in the same locality.

20. 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 the District's Notice to Proceed and shall be completed by Contractor in the time specified in the Contract Documents. The District is under no obligation to consider early completion of the Work; and the Contract completion date shall not be amended by the District's receipt or acceptance of the Contractor's proposed earlier completion date. Furthermore, Contractor shall not, under any circumstances, receive additional compensation from the 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 the District will suffer damage. In accordance with Government Code Section 53069.85, it is impractical and infeasible to determine the amount of actual damage that the District would suffer due to late completion, and therefore it is agreed that Contractor shall pay to the 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.

b. Inclement Weather. Contractor shall abide the Owner's Representative'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 Work 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 the District in writing of causes of delay. The District shall ascertain the facts and extent of delay and will grant an extension of time for completing the Work when, in its judgment, the facts justify such an extension. Time extensions to the Work 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 Work beyond the Contract completion date.

d. No Damages for Reasonable Delay. The District's liability to Contractor for delays for which the District is responsible shall be limited to only an extension of time unless such delays were unreasonable under the circumstances. In no case shall the 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 the 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.

21. Changes And Extra Work

a. Change Order Work.

1) The 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 deletion 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 the 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 the District.

6) Price quotations from the Contractor shall be accompanied by sufficiently detailed supporting documentation to permit verification by the District.

7) If the Contractor fails to submit the cost proposal within the seven (7) Day period (or as requested), the 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 the District's estimate of cost. If the change is issued based on the 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 the 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 Owner's Representative 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, on-site and home office overhead) 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.

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) For added or deducted Work by subcontractors, the Contractor shall furnish to the 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.

10) For added or deducted work furnished by a vendor or supplier, the Contractor shall furnish to the District a detailed estimate or quotation of the cost to the Contractor, signed by such vendor or supplier.

11) Any change in the Work involving both additions and deductions 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.

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

13) If the District disagrees with the proposal submitted by Contractor, it will notify the Contractor and the District will provide its opinion of the appropriate price and/or time extension. If the Contractor agrees with the District, a change order will be issued by the District. If no

agreement can be reached, the 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 the District within fifteen (15) Days of the issuance of the unilateral change order, disputing the terms of the unilateral change order.

14) 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.

15) Any alterations, extensions of time, extra work or any other changes may be made without securing consent of the Contractor's surety or sureties.

22. Inspection

All materials and equipment furnished and all work performed shall be subject to rigid inspection by Owner. Work performed in the absence of inspection may be required to be removed and replaced under the proper inspection, with the entire cost of removal and replacement borne by the Contractor, even if such work is not defective. Work covered up without authority of the Manager shall, upon order of the Manager, be uncovered to the extent required to permit inspection, repair, or replacement, and thereafter shall be recovered, all at the Contractor's sole cost. Whenever the Contractor arranges to work outside regular or specified work periods or to vary the work period during any particular day, the Contractor shall give the Manager 24 hours notice so that inspection may be provided. Such work shall be performed without extra compensation, and Contractor shall pay for inspection services provided on Saturdays, Sundays, and holidays in accordance with established Owner rates. Contractor shall bear all costs and fees incurred as a result of inspection services furnished by utilities or others.

23. Examination of Work

The Contractor shall furnish the Manager every reasonable facility for ascertaining whether the work is in accordance with the requirements and intention of the Special Requirements, Basic Specifications, Plans, and Standard Drawings, even to the extent of uncovering or taking down portions of finished work which have been previously approved or authorized to be covered. Should such previously approved work thus exposed or examined prove satisfactory, the uncovering or taking down and the replacing of the covering or the making good of the parts removed shall be included in the contract estimates and will be paid for at the contract prices for the kind of work done or as extra work, as determined by the Manager; but should the work exposed or examined prove unsatisfactory, the uncovering, taking down, replacing, and making good shall be at the expense of the Contractor, and Contractor shall be charged with the cost to the Owner of

any materials furnished by the Owner for the unsatisfactory work and its replacement in excess of the requirements for satisfactory original construction.

24. Defective Materials

a. The inspection of the work to be performed under the contract shall not relieve the Contractor of any of their obligations to fulfill their contract, as herein prescribed, and all defective materials or workmanship shall be made good notwithstanding the fact that such materials or workmanship may have been previously inspected by the Manager and accepted or estimated for payment. If the material or workmanship shall be found defective at any time before the final acceptance of the entire contract performance, the Contractor shall forthwith make good such defect, without compensation, in a manner satisfactory to the Manager. The Manager shall be the sole judge of determining whether any defective material or workmanship is the result of the materials and methods of the Contractor or whether the defects have been caused by other contractors of the Owner having the responsibility of supplying the material.

b. If the Contractor shall fail or neglect to make ordered repairs of defective material or workmanship or to remove condemned material from the work within ten (10) days after the service by the Manager of an order to do such repair work or remove such materials, the Manager, acting on behalf of the Owner, may make the ordered repairs or remove the condemned materials and deduct the cost thereof from any moneys due the Contractor.

25. Unpaid Claims

Pursuant to Section 9356 of the California Civil Code, upon or before completion of work agreed to be performed or at any time prior to the expiration of the period within which claims may be filed for record, certain persons claiming to have performed labor or furnished material, supplies, or services toward the performance of this contract may file with the Owner a verified statement of such claim, stating in general terms the kind of labor and materials and the name of the person to or for whom the same was done or furnished or both, together with a statement that the same has not been paid. If so, or if any person brings any action against the Owner or against any officer thereof to enforce such claim, the Owner shall withhold from the money under its control so much of said money due or to become due the Contractor under this Contract as shall be sufficient to satisfy and discharge the amount claimed and potential costs of suit, but in no event less than one and one-fourth (1-1/4) times the amount claimed. However, if the Owner in its discretion permits the Contractor to file such additional bond as is authorized by Section 9364 of the Civil Code in a penal sum equal to one and one-fourth (1-1/4) times the amount of the claim, the Owner shall not thereafter withhold said money on account of the claim.

26. Partial Estimates and Payments

Each month the Contractor shall submit to the Manager a written request for payment, together with such supporting data as the Manager may request, covering the amount of work then completed. Further, supporting data shall include an updated project schedule, proof that as-built drawings are being maintained, certified payrolls, and other information the Manager determines is pertinent to satisfying the Owner that the Contractor is meeting the requirements of the contract documents. Failure to provide said supporting data shall be grounds for the Owner to reject or delay the subject Partial Payment Estimate until said supporting information is provided to the satisfaction of the Owner. Such request and supporting data shall be submitted at least five (5) days prior to the regular meeting of the Board of Directors of the Owner to permit approval during such month. Upon receipt of such request and supporting data, the Manager shall establish estimates of the amount of work satisfactorily performed by the Contractor and shall determine the value thereof. Upon approval by the Manager, payment will be made within ten (10) days after the date of said regular meeting, in the amount of ninety-five percent (95%) of the estimated value of such work. Review and payment of such requests by the Owner under this section are also subject to provisions of Section 20104.50 of the California Public Contract Code, summarized below:

Upon failure to make any undisputed progress payment within thirty (30) days after receipt of an undisputed and properly submitted request for payment from Contractor, as set out below, the Owner shall pay interest to Contractor equivalent to the legal rate set forth in subdivision (a) of Section 685.010 of the California Code of Civil procedure.

Each request for payment shall be reviewed by the Manager as soon as practicable after receipt for the purpose of determining that the payment request is a proper payment request. Any request for payment determined by the Manager not to be proper and suitable for payment shall be returned to Contractor as soon as practicable, but not later than seven (7) days after receipt. A request returned pursuant to this paragraph shall be accompanied by a document setting forth in writing the reason why the payment request is not proper.

The number of days available to the Owner to make a payment without incurring interest pursuant to Section 20104.50 of the California Public Contract Code shall be reduced by the number of days by which the Owner exceeds the seven days return requirement set forth herein. For purposes of Section 20104.50 of the California Public Contract Code, a "progress payment" includes all payments properly due to the Contractor, except that portion of the final payment designated by this Contract as retention earnings.

27. Final Estimate and Payment

Contractor shall be entitled to final payment of unpaid and undisputed amounts due on the Contract within 60 days after completion of the Work, as hereinafter provided. Prior to that date, Owner will prepare a final estimate of the Work done by Contractor and compute therefrom the total value of the Work done by Contractor, from which Owner will

deduct: (a) all previous partial payments made to Contractor under this Contract, (b) any amounts to be deducted from the Contract pursuant to the terms of the Contract, (c) 150% of all unpaid Contract amounts then in dispute, and (d) 125% of all stop notices then on file with Owner. The net amount shall be paid to Contractor upon Contractor's transmittal to Owner of the properly executed release, upon the form provided by Owner, releasing Owner from all claims or liability relating to undisputed Contract amounts for work performed in relation to said amounts. Amounts withheld from final payment pending resolution of disputes, or to satisfy third-party claims or stop notices, will be subsequently released to Contractor according to the terms of such settlements as may be subsequently reached between the parties thereto.

It shall be understood and agreed by Contractor that all partial payments are estimates only and may be revised, adjusted, and corrected at the time of computing final payment. For purposes of final payment on the Contract, the term "completion" shall mean any of the following:

a. Occupation, beneficial use, and enjoyment of the Work, performed pursuant to the Contract, excluding any operation only for testing, start-up, or commissioning, by Owner or its agent, accompanied by cessation of labor on the Contract.

b. Acceptance of the Work by Owner.

c. Cessation of labor on the Contract for a continuous period of 100 days or more, due to factors beyond Contractor's control.

d. After commencement of the Work on the Contract, cessation of labor for a continuous period of 30 days or more if Owner has filed for record a Notice of Cessation or a Notice of Completion.

28. Sales and Use Taxes

The Contract price includes all taxes, and the Contractor shall pay all taxes of any nature due and payable by the Owner or by the Contractor to the State of California and its political subdivisions or to any charter city, and all taxes of every nature due and payable by the Owner or by the Contractor to the United States of America or any of its agencies in connection with any or all of the work or equipment provided for in the Contract. This shall include, but not be limited to, sales taxes and use taxes.

29. Payment Only in Accordance with Contract

The Contractor shall not demand or be entitled to receive payment for the work to be performed and/or equipment and/or materials furnished, or any portion thereof, except in the manner set forth in the Contract; nor unless each and every one of the promises, agreements, stipulations, terms, and conditions herein contained to be performed, kept,

observed, and fulfilled on the part of the Contractor shall have been performed, kept, observed, and fulfilled, and the Manager shall have accepted the work.

30. Moneys to be Retained

The Owner may keep any moneys which would otherwise be payable at any time hereunder and apply the same, or so much as may be necessary therefor, to the payment of any expenses, losses, or damages as determined by the Manager, incurred by the Owner for which the Contractor is liable under the Contract. The Owner shall also withhold all forfeited funds pursuant to Labor Code Section 1727.

Pursuant to Section 20104.6 of the California Public Contracts Code, the Owner shall be entitled to withhold from final payment any unpaid contract amount which is the subject of a claim by the Contractor to be resolved pursuant to Section 44 of the General Conditions, pending final resolution of the claim.

31. Contractor's Claims

No claim shall be made or be filed and neither the Owner nor any employee of the Owner nor any of its agents shall be liable or held to pay any money, except as specifically provided in the contract.

32. Recovery of Damages

The making of an estimate and payment in accordance therewith shall not preclude the Owner from demanding and recovering from the Contractor such damages as it may sustain by reason of the Contractor’s failure to comply with the Special Requirements, Basic Specifications, Plans, and/or Standard Drawings.

33. Acceptance of the Work Not a Waiver

Neither the acceptance by the Owner or its Manager or any of its employees, nor any order, measurements, or certificate by the Engineer, nor any payment of money by the Owner or any of its officers, nor any payment for or acceptance of the whole or any part of the work by the Manager or the Owner, nor any extension of time, nor any possession taken by the Owner or its employees shall operate as a waiver of any portion of this contract or of any power herein provided; nor shall any waiver of any breach of this contract be held to be a waiver of any other or subsequent breach.

34. Maintenance and Guaranty

a. The Contractor hereby guarantees that all materials and workmanship furnished by the Contractor under the contract will meet fully all requirements thereof as to quality of workmanship and of materials furnished by the Contractor. The Contractor hereby agrees to replace all materials and pay for all installation costs, made necessary by defects in materials or workmanship supplied by the

Contractor, that become evident within one year after the date of final payment and pay for all work necessary to remove, restore, and replace the materials to full serviceability and to full compliance with the requirements of the Special Requirements, Basic Specifications, Plans, and/or Standard Drawings, including the test requirements set forth herein for any part of the materials furnished hereunder which, during said one-year period, are found to be deficient with respect to any provision of the Special Requirements, Basic Specifications, Technical Specifications, Plans, and Standard Drawings. The Contractor also agrees and does hereby hold the Owner harmless from claims of any kind which may arise from damage due to said defects. The Contractor shall replace all defective materials promptly upon receipt of written orders for same from the Manager. If the Contractor fails to replace all defective materials promptly, the Owner may secure the service of others to do this work, and the Contractor and the Contractor's surety shall be liable to the Owner for the cost, including removal and replacement thereof.

b. The guarantees, indemnifications and agreements set forth in Subsection a. hereof are secured by the Contract Performance Bond provided by the Contractor herein, and for this purpose said bond shall remain in force for a period of one year after the date of the final payment.

35. Suspension of Contract

a. If the equipment and/or material to be furnished or the work to be performed by the Contractor under the contract shall be abandoned by the Contractor, or if the Contractor shall make a general assignment for the benefit of the Contractor's creditors or be adjudicated a bankrupt, or if a Receiver of the Contractor's property or business be appointed by a court of competent jurisdiction, or if the Contractor's contract shall be assigned by the Contractor otherwise than hereinbefore specified, or if, at any time, the Manager shall be of the opinion that the performance of the contract is unnecessarily or unreasonably delayed, or that the Contractor is willfully violating any of the conditions or covenants of the contract, or of the Specifications, or is executing the same in bad faith or not in accordance with the terms thereof, or if the terms of the contract be not fully completed within the time named in the contract for its completion or within the time to which the completion of the contract may have been extended, as hereinbefore provided, the Manager acting on behalf of the Owner may, by written notice, instruct the Contractor to suspend the operation of all or any part of the contract, and the Contractor shall do so and shall resume the same only upon written instruction by the Manager.

b. Upon such suspension of the contract, the Owner may procure the equipment and/or the materials, and/or performance of the work necessary to fulfill the contract requirements in such manner as it may deem proper. In so doing, the Owner may take possession of and use any and all materials, plant, tools, equipment, supplies, and property of every kind which may be provided by the Contractor upon the Owner property for the purposes of the Contractor's work.

The Owner may procure other equipment and/or materials and provide labor for the completion of the same, or contract therefore and charge the expense of completion by either method to the Contractor. These charges shall be deducted from such moneys as may be due or may at any time hereafter become due the Contractor under and by virtue of this contract or any part thereof. In case such expense shall exceed the amount which would have been due the Contractor under the contract if the same has been completed by the Contractor, the Contractor shall pay the amount of such excess to the Owner and in case such expense shall be less than the amount which would have been payable under this contract if the same had been completed by the Contractor, the Contractor shall have no claim to the difference, except to such extent as may be necessary, in the opinion of the Manager, to reimburse the Contractor or the Contractor's sureties for any expense properly incurred for plant, camp, equipment, materials, supplies, and labor devoted to the prosecution of the work of which the Owner shall have received the benefits and which shall not have been otherwise paid for by the Owner. In computing such expense so far as it shall relate to plant and equipment taken over by the Owner, the salvage value of such plant and equipment at completion of the work shall be deducted from the depreciated value thereof at the time taken over by the Owner, and the difference shall be considered as an expense. Evidence of such expense, satisfactory to the Manager, shall be required, and all necessary estimates and appraisements shall be made by the Contractor ***or*** the Manager. When any particular part of the work is being carried on by the Owner, by contract or otherwise, under the provisions of this section, the Contractor shall continue the remainder of the work in conformity with the terms of the Contractor's contract and in such manner as in nowise to hinder or interfere with the persons or workers employed, as above provided, by the Owner, by contract or otherwise, to do any part of the work or to complete the same under the provisions of this section.

c. In the determination of the question whether there has been such noncompliance with the contract as to warrant its suspension or the procurement of the materials elsewhere by the Owner as herein provided, the decision of the Manager shall be final. Suspension of the contract or any portion thereof shall operate only to terminate the right of the Contractor to proceed with the furnishing of the equipment and/or material, or performing the work covered by the contract or the suspended portions thereof. All other stipulations of the contract shall be and remain in full force and effect after such suspension and until the contract shall have been completed and final payment or final adjustments of accounts made.

36. Additional Surety

If, during the continuance of the contract, any of the sureties upon the performance bond in the opinion of the Manager, are or become insufficient, the Manager may require additional sufficient sureties, which the Contractor shall furnish to the satisfaction of the Manager within fifteen (15) days after notice, and in default thereof, the contract may be suspended with the same force and effect as provided in Section 37.

37. Termination of Contract

37.1 Owner May Terminate for Cause.

37.1.1 Owner may, without prejudice to any other right or remedy, serve written notice upon Contractor of its intention to terminate this Contract in whole or in part 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 Contract Time; (ii) fails to complete the Work within the required time; (iii) files a bankruptcy petition or is adjudged a bankruptcy; (iv) makes a general assignment for the benefit of its creditors; (v) has a receiver appointed; (vi) refuses or fails to supply enough properly skilled workers or proper materials to complete the Work; (vii) fails to make prompt payment to subcontractors or for material or labor; (viii) disregards Applicable Laws, other requirements or instructions of Owner; or (ix) violates any of the provisions of the Contract Documents.

37.1.2 The Notice of Default and Intent to Terminate shall state the reasons for termination. Unless within five (5) Days after the service of such notice, Contractor resolves the circumstances giving rise to the Notice of Default to Owner's satisfaction or makes arrangements acceptable to Owner for the required corrective action, Owner may terminate this Contract. In such case, Contractor shall not be entitled to receive any further payment until the Work has been finished. Owner may take over and complete the Work by any method it may deem appropriate, including enforcement of the Project Performance Bond. Contractor and its surety shall be liable to Owner for any excess costs or other damages incurred by Owner to complete the Work. If Owner takes over the Work, Owner 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 Site.

37.2 Owner May Terminate for Convenience.

37.2.1 In addition to its right to terminate this Contract for default, District may terminate the Contract, in whole or in part, at any time upon seven (7) Days written notice to Contractor. The Notice of Termination shall specify that the termination is for the convenience of Owner, the extent of termination, and the effective date of such termination ("Effective Date of Termination").

37.2.2 After receipt of Notice of Termination, and except as directed by Owner, 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:

37.2.2.1 Stop Work as specified in the Notice.

37.2.2.2 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.

37.2.2.3 Leave the Site and any other property upon which the Contractor was working in a safe and sanitary manner such that it does not pose any threat to the public health or safety.

37.2.2.4 Terminate all subcontracts and purchase orders to the extent that they relate to the portions of the Work terminated.

37.2.2.5 Place no further subcontracts or orders, except as necessary to complete the remaining portion of the Work.

37.2.2.6 Submit to Owner, within fifteen (15) Days from 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 Notice of Termination. Any documentation substantiating costs incurred by the Contractor solely as a result of Owner'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 Owner 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 Owner's Termination for Convenience."

37.2.2.7 Owner’s total liability to Contractor by reason of the termination shall be limited to the total (without duplication of any items) of:

37.2.2.7.1 The reasonable cost to the Contractor for all Work performed prior to the Effective Date of Termination, including the Work done to secure the Project for termination. Reasonable cost may not exceed the applicable percentage completion values derived from the progress schedule and the Cost Breakdown. Deductions shall be made for cost of materials to be retained by the Contractor, cost of Work defectively performed, amounts realized by sale of materials, and for other appropriate credits or offsets against cost of Work as allowed by the Contract Documents.

37.2.2.7.2 When, in Owner’s opinion, the cost of any item of Work is excessively high due to costs incurred to remedy or replace defective or rejected

Work, reasonable cost to be allowed will be the estimated reasonable cost of performing the Work in compliance with requirements of the Contract Documents and excessive actual cost shall be disallowed.

37.2.2.7.3 Any Work required by the Termination for Convenience that is not included in Contract Documents will be negotiated pursuant to the Contract Change Order provisions.

37.2.2.7.4 Reasonable costs to the Contractor of handling material returned to vendors, delivered to District, or otherwise disposed of as directed by District.

37.2.2.7.5 A reasonable allowance for the Contractor's internal administrative costs in preparing termination claim.

37.2.2.7.6 Reasonable demobilization costs, and reasonable payments made to Subcontractors or suppliers on account of termination.

37.2.2.8 In no event shall Owner be liable for unreasonable costs incurred by the Contractor or subcontractors after receipt of a Notice of Termination. Such non-recoverable costs include, but are not limited to, the cost of or anticipated profits on Work not performed as of the date of termination, post-termination employee salaries, unreasonable post-termination administrative expenses, post-termination overhead or unabsorbed overhead, surety costs of any type, costs of preparing and submitting the Owner's termination claim, attorney fees of any type, and all other costs relating to prosecution of a claim or lawsuit.

37.2.2.9 Owner shall have no obligation to pay the Contractor under this Article unless and until the Contractor provides Owner with updated and acceptable as-built drawings and Record Documents for Work completed prior to termination as required by the Contract Documents.

37.2.2.10 In arriving at the amount due the Contractor under this clause there shall be deducted in whole, or in the appropriate part(s) if the termination is partial:

37.2.2.10.1 All unliquidated advances or other payments on account previously made to the Contractor, including without limitation all payments which are applicable to the terminated portion of the Contract Documents,

37.2.2.10.2 Any claim Owner may have against the Contractor in connection with the Work or any amounts that may be withheld in accordance with the Contract Documents, and

37.2.2.10.3 The agreed price for, or proceeds of sale of, any materials, supplies, or other things kept by the Contractor and not otherwise recovered by or credited to Owner.

37.2.3 These provisions are in addition to and not in limitation of any other rights or remedies available to Owner.

37.2.4 Contractor shall not be paid on account of loss of anticipated profits or revenue or other economic loss or consequential damages arising out of or resulting from such termination.

37.3 Notwithstanding any other provision of this Article, when immediate action is necessary to protect life and safety or to reduce significant exposure or liability, Owner may immediately order Contractor to cease Work until such safety or liability issues are addressed to the satisfaction of Owner or the Contract is terminated.

37.4 If Owner 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.

38. Right to Occupy Completed Portions of Work

The Owner may wish to occupy or place in service portions of the completed work before final completion of the contract work and shall be at liberty to do so, but such occupancy or placing in service of any completed portion of the work shall not void the contract nor relieve the Contractor of their responsibility of protection and care of all work until final completion and acceptance of the entire work, provided, however, that expense directly attributable to operation and placing in service the portions of the work shall not be chargeable to the Contractor.

39. Cooperation with Other Contractors and Governmental Agencies

The Contractor shall be responsible for ascertaining the nature and extent of any simultaneous, collateral, and essential work by others. The Owner, its workers and Contractors, and others, shall have the right to operate within or adjacent to the worksite to perform such work.

Where the pipeline and structures are constructed within the right-of-way under the jurisdiction of other governmental agencies having jurisdiction over the right-of-way, contractor shall comply with all requirements of said agencies having jurisdiction over the right-of-way.

Where the same subject matter is covered by the specifications of two or more agencies, the specifications more restrictive on the Contractor shall govern in all cases.

The Owner, the Contractor, and each of such workers, Contractors, and others, shall coordinate their operations and cooperate to minimize interference.

The Contractor shall absorb in its bid all costs involved as a result of coordinating its work with others. The Contractor will not be entitled to additional compensation from the Owner for damages resulting from such simultaneous, collateral, and essential work. If necessary to avoid or minimize such damage, or delay, the Contractor shall deploy its workforce to other parts of the work.

Should the Contractor be delayed by the Owner, and such delay could not reasonably have been foreseen and prevented by the Contractor, the Engineer will determine the extent of the delay, the effect of the delay on the project as a whole, and any commensurate extension of time.

40. Clayton Act or Cartwright Act

In entering into a public works contract or a subcontract to supply goods, services, or materials pursuant to a public works contract, the Contractor or Subcontractor offers and agrees to assign to the awarding body all rights, title, and interest in and to all causes of action it may have under Section 422f the Clayton Act (15 U.S.C. Section 15) or under the Cartwright Act (Chapter 2 of Part 2 of Division 7 of the Business and Professions Code), arising from purchases of goods, services, or materials pursuant to the public works contract or the subcontract. This assignment shall be made and become effective at the time the awarding body tenders final payment to the Contractor, without further acknowledgment by the parties.

41. Contract Funds

At the Contractor’s own request and expense, the Contractor may substitute equivalent security for money that is withheld to ensure performance in the following manner, and in accordance with Section 22300 of the California Public Contract Code. For purposes of Section 22300 of the Public Contract Code, the term "satisfactory completion of the contract" means the time the Owner has issued written final acceptance of the Work and filed a Notice of Completion as required by law and provisions of the Contract Documents.

a. At the request and expense of the Contractor, securities equivalent to the amount withheld shall be deposited with the Owner, or with a state or federally chartered bank in California as the escrow agent who shall pay such monies to the Contractor upon satisfactory completion of the contract.

b. Alternatively, the Contractor may request, at the expense of the Contractor, that the Owner make payment of retention earned directly to the Escrow Agent. The Contractor may, at their expense, direct the investment of the payments into securities and receive the interest earned on those investments upon the same terms provided for in Section 22300 of the Public Contract Code. The Escrow Agent shall pay to Contractor all securities, interest, and payments received by the Escrow Agent from the Owner pursuant to such Section, upon satisfactory completion of the Contract. The Contractor shall pay to each subcontractor, not later than twenty days following receipt of the payment, the respective amount of interest earned, net of costs attributed to retention withheld from each subcontractor, on the amount of retention withheld to ensure the performance of the Contractor.

c. Securities eligible for investments shall include those listed in Section 16430 of the California Government Code, bank or savings and loan Certificates of Deposit, interest-bearing demand deposit accounts, standby letters of credit, or any other security mutually agreed to by the Contractor and the Owner. The Contractor shall be the beneficial owner of any securities substituted for monies withheld and shall receive any interest thereon.

d. Pursuant to conditions of Section 22300 of the Public Contract Code, any escrow agreement entered into pursuant to these conditions shall be executed pursuant to the form included in these Contract Documents.

42. Precedence

In event of conflict between various provisions of the plans and specifications, the provisions more restrictive of the Contractor shall apply. In event of conflict that cannot be resolved by restrictiveness, the document highest in precedence shall control. The precedence shall be:

a. Federal and State requirements (where applicable)
b. Permits from agencies having jurisdiction
c. Contract
d. Addenda, most recent first
e. Plans (Drawings)
f. Special Requirements
g. Technical Specifications
h. General Conditions
i. Proposal/Bidding Documents
j. Standard Drawings
k. Referenced Standard/Basic Specifications

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

a. Figures govern over scaled dimensions
b. Detail drawings govern over general drawings

c. Addenda/Change Order drawings govern over Drawings
d. Drawings govern over standard drawings

43. Excavations: Discovery of Hazardous Conditions

a. Pursuant to Section 7104 of the California Public Contract Code, should services performed under this Contract include the digging of trenches or other excavation extending deeper than four feet below the surface, the Contractor shall, while performing such excavation, promptly, and before the following conditions are disturbed, notify the Owner, in writing of any:

(1) material that the Contractor believes may be material that is hazardous waste, as defined in Section 25117 of the California Health & Safety Code, that is required to be removed to a Class I, Class II, or Class III disposal site in accordance with the provisions of existing law;

(2) subsurface or latent physical conditions at the site differing from those indicated; or

(3) unknown physical conditions at the site of any unusual nature, differing materially from those ordinarily encountered and generally recognized as inherent in work of the character provided for in this Contract.

b. Upon such notification, the Owner shall promptly investigate such conditions. If the Owner finds that the reported conditions do materially so differ, or do involve hazardous waste, and cause a decrease or increase in the Contractor's cost of, or the time required for, performance of any part of the work, the Owner shall issue a Change Order or similar contract modification pursuant to the procedures described in this Contract.

c. In the event a dispute arises between the Owner 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 this Contract, but shall proceed with all work to be performed under this Contract. The Contractor shall retain any and all rights provided either by contract or by law which pertains to the resolution of disputes and protests between the contracting parties.

44. Resolution of Claims

Claims governed by this Section may not be filed unless and until the Contractor completes all procedures for giving notice of delay or change and for the requesting of a time extension or change order, including but not necessarily limited to the change order procedures contained herein, and Contractor’s request for a change has been denied in whole or in part. Claims governed by this Section must be filed no later than the date of

final payment. The claim shall be submitted in writing to the District and shall include on its first page the following in 16 point capital font: “THIS IS A CLAIM.” Furthermore, the claim shall include the documents necessary to substantiate the claim. Nothing in this Section is intended to extend the time limit or supersede notice requirements otherwise provided by the contract for the filing of claims, including all requirements pertaining to compensation or payment for extra Work, disputed Work, and/or changed conditions. Failure to follow such contractual requirements shall bar any claims or subsequent lawsuits for compensation or payment thereon.

Supporting Documentation. The Contractor shall submit all claims in the following format:

1. Summary of claim merit and price, reference Contract Document provisions 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. Time impact analysis in Critical Path Method format

Any separate demand by the Contract in an amount of $375,000 or less for payment of money or damages arising from work done by or on behalf of the Contractor pursuant to this contract, payment of which is not otherwise expressly required by this Contract, or any separate demand by the Contractor the amount of which is disputed by the Owner, shall be resolved pursuant to Sections 20104 et seq. of the California Public Contract Code, as may be amended. These sections are summarized as follows:

a. For any claim, as defined in Section 20104 of the California Public Contract Code, by the Contractor of an amount less than $50,000, the Owner will respond in writing within forty-five days of receipt of the claim, or may request in writing, within thirty days of receipt of the claim, any additional documentation supporting the claim or related to any defenses the Owner may have against such claim. The Owner's written response to the claim, as further documented, shall be submitted to the Contractor within fifteen days after receipt of the further documentation or within a period of time no greater than that taken by the Contractor in producing the additional documentation, whichever is greater.

b. For claims, as defined in Section 20104 of the California Public Contract Code, by the Contractor for an amount above $50,000 and up to $375,000, the Owner shall respond in writing to all written claims within sixty days of receipt of the claim, or may request in writing within thirty days of receipt of the claim any additional documentation supporting the claim or related defenses which the owner

may have against such claim. The Owner's written response to the claim as further documented shall be submitted to the Contractor within thirty days after receipt of the further documentation or within a period of time no greater than that taken by the Contractor in producing the additional documentation, whichever is greater.

c. If the Contractor disputes the Owner's written response, or the Owner fails to respond within the time prescribed, the Contractor may notify the Owner, in writing, either within fifteen days of receipt of the Owner's response or within fifteen days of the Owner's failure to respond within the statutorily prescribed time and demand an informal conference to meet and confer for settlement of the issues in dispute. Upon demand, the Owner shall schedule a meeting and confer conference within thirty days for settlement of the dispute.

d. If the meet and confer process does not produce an agreement, the Contractor may file a claim pursuant to Government Code Sections 900, et seq. The period of time within which to file such a claim shall be as defined in Section 20104.2 (e).

e. The procedures for any civil action brought by the Parties to resolve such claims shall be those set forth in Section 20104.4 of the California Public Contract Code, a summary of which is set forth below:

(1) Within sixty days, but no earlier than thirty days, following the filing of responsive pleading, unless waived by mutual stipulation of both parties, the court shall submit the matter to a non-binding mediation. The mediation process shall commence within thirty days of the submittal, and shall be concluded within fifteen days from the commencement of the mediation process, except as may be otherwise required by Section 20104.4 of the Public Contract Code.

(2) If the matter remains in dispute after mediation, the case shall be submitted to judicial arbitration. Such proceedings shall be conducted, and arbitrator appointed, pursuant to provisions of Section 20104.4 of the Public Contract Code.

(3) Any party appealing an arbitration award who does not obtain a more favorable judgment shall, in addition to the payment of costs and fees, also pay the attorneys' fees on appeal of the other party.

f. In any suit filed pursuant to these provisions, the Owner shall pay interest at the legal rate on any arbitration award or judgment in favor of the Contractor. The interest shall begin to accrue on the date the suit is filed in a court of law.

45. Contractor Eligibility to Perform on Public Works Projects

Pursuant to Public Contract Code Section 6109, contractors or subcontractors who are ineligible to perform work on a public works project pursuant to Section 1777.1 or Section 1777.7 of the California Labor Code shall not be allowed to perform any portion of the work contemplated herein. Any subcontract between the contractor and a debarred subcontractor shall be void as a matter of law, and the debarred subcontractor shall not receive any payment for performing such work. Any public money that has been paid to the debarred subcontractor on the project shall be returned to the Owner. 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.

46. Release

Contractor shall be required to execute the "RELEASE" form provided as follows prior to receiving final payment for the contract work. Prior to the District making final construction contract payment to the Contractor, the Contractor shall supply the District with fully executed Contractor, Subcontractor and Material Suppliers “Unconditional Lien” releases.

CONDITIONAL WAIVER AND RELEASE ON FINAL PAYMENT

NOTICE: THIS DOCUMENT WAIVES THE CLAIMANT'S LIEN, STOP PAYMENT NOTICE, AND PAYMENT BOND RIGHTS EFFECTIVE ON RECEIPT OF PAYMENT. A PERSON SHOULD NOT RELY ON THIS DOCUMENT UNLESS SATISFIED THAT THE CLAIMANT HAS RECEIVED PAYMENT.

Identifying Information

Name of Claimant:
_____

Name of Customer:
_____

Job Location:
_____

Owner:
_____

Conditional Waiver and Release

This document waives and releases lien, stop payment notice, and payment bond rights the claimant has for labor and service provided, and equipment and material delivered, to the customer on this job. Rights based upon labor or service provided, or equipment or material delivered, pursuant to a written change order that has been fully executed by the parties prior to the date that this document is signed by the claimant, are waived and released by this document, unless listed as an Exception below. This document is effective only on the claimant's receipt of payment from the financial institution on which the following check is drawn:

Maker of Check:
_____

Amount of Check: $
_____

Check Payable to:
_____

Exceptions

This document does not affect any of the following:
Disputed claims for extras in the amount of: $_____

Signature

Claimant's Signature:
_____

Claimant's Title:
_____

Date of Signature:
_____

UNCONDITIONAL WAIVER AND RELEASE ON FINAL PAYMENT

NOTICE TO CLAIMANT: THIS DOCUMENT WAIVES AND RELEASES LIEN, STOP PAYMENT NOTICE, AND PAYMENT BOND RIGHTS UNCONDITIONALLY AND STATES THAT YOU HAVE BEEN PAID FOR GIVING UP THOSE RIGHTS. THIS DOCUMENT IS ENFORCEABLE AGAINST YOU IF YOU SIGN IT, EVEN IF YOU HAVE NOT BEEN PAID. IF YOU HAVE NOT BEEN PAID, USE A CONDITIONAL WAIVER AND RELEASE FORM.

Identifying Information

Name of Claimant:
_____
Name of Customer:
_____
Job Location:
_____
Owner:
_____

Unconditional Waiver and Release

This document waives and releases lien, stop payment notice, and payment bond rights the claimant has for all labor and service provided, and equipment and material delivered, to the customer on this job. Rights based upon labor or service provided, or equipment or material delivered, pursuant to a written change order that has been fully executed by the parties prior to the date that this document is signed by the claimant, are w9+aived and released by this document, unless listed as an Exception below. The claimant has been paid in full.

Exceptions

This document does not affect any of the following:
Disputed claims for extras in the amount of:
$_____

Signature

Claimant's Signature:
_____
Claimant's Title:
_____
Date of Signature:
_____

SPECIAL REQUIREMENTS

TABLE OF CONTENTS
OF SPECIAL REQUIREMENTS

SPECIAL REQUIREMENTS

FOR

ANNUAL WATERLINE REPLACEMENT PROJECT –
44th STREET AREA
JCSD PROJECT NO.: C245118
AND
GLENROY CT INTERTIE WATER PLAN
JCSD P.N. M221003

1. THE REQUIREMENT

The Contractor shall construct the specified pipeline facilities ang gravity sewers with appurtenances, for the Jurupa Community Services District, Riverside, California; furnishing all labor, materials (except those materials to be furnished by District), equipment, and methods, necessary to complete said construction, in order to provide the Owner with complete, correctly operating water pipeline facilities and gravity sewers with appurtenances, all in accordance with Special Requirements, Basic Specifications, and Drawings, and as set forth in the Bid Item Schedule herein.

The Contractor shall be responsible for the initial operation of the facilities with appurtenances, and he shall check all material installed by him, making repairs and/or adjustments necessary in order to provide the Owner with a correctly functioning facility with appurtenances. All mainline water pipe shall be cement mortar lined/cement mortar coated welded steel pipe.

Full compensation for compliance with all provisions outlined within these specifications and shown on the Contract Drawings shall be considered as included in the applicable bid prices for various items, and no other compensation shall be made therefore.

2. LOCATION OF CONTRACT WORK SITE

The Contract work site is in the City of Jurupa Valley of Riverside County, California (refer to the Location Map attached in the back of these Specifications).

3. CONTRACT DRAWINGS

The contract work to be executed under these Special Requirements and Basic Specifications, its location, nature, size and extent, and the form and detail of its various features are shown on the following Drawings, which are hereby made a part of these Special Requirements and Basic Specifications.

ANNUAL WATERLINE REPLACEMENT PROJECT –

44th STREET AREA

JCSD PROJECT NO.: C245118

Sheet No.	Sub-Title
1	Title Sheet
2	Notes and Legend
3	Agate St and 44th St Road Sections
4	Galena St and Cross St Road Sections
5	Agate Street Plan and Profile Sta. 10+00.00 to Sta. 20+00.00
6	Agate Street Plan and Profile Sta. 20+00.00 to Sta. 29+00.00
7	Agate Street Plan and Profile Sta. 29+00.00 to Sta. 37+05.36
8	44th Street Plan and Profile Sta. 10+00.00 to Sta. 19+00.00
9	44th Street and Tammy Ln Plan and Profile
10	45th Street Plan and Profile Sta. 10+00.00 to Sta. 19+00.00
11	45th Street Plan and Profile Sta. 19+00.00 to Sta. 24+37.41
12	Clearview Place Plan and Profile Sta. 10+00.00 to Sta. 18+94.42
13	Tourmaline Court Plan and Profile Sta. 10+00.00 to Sta. 19+30.91
14	Galena Street Plan and Profile Sta. 10+00.00 to Sta. 19+00.00
15	Galena Street Plan and Profile Sta. 19+00.00 to Sta. 23+13.88
16	Pedley Road Service Transfer
17	Zone Valve Connection Details
18	44th Street Sewer Replacement
19	Tammy Lane Sewer Replacement
20	Agate Street Sewer Replacement
21	Galena Street Sewer Replacement

GLENROY CT INTERTIE WATER PLAN

JCSD PROJECT NO.: M221003 (PRESENTED IN APPENDIX H)

Sheet No.	Sub-Title
1	Title Sheet, Vicinity Map, and General Notes
2	Plan, Profile, and General Detail

Together With:

8 1/2" x 11" Standard Drawings; attached in the back of these Specifications.

Standard No.	Title
A-1	Typical Trench Detail (Modified)
A-3	Standard Valve and Sewer Manhole Marker Installation
A-4	Standard Guard Post Installation
A-11	Waterline Crossing Over Storm Drain/Sewers
B-1	Gate Valve Installation
C-1	Thrust Block for D.I.P. Pipelines, Class 200 P.S.I. Max.
C-3	Typical Butt Strap Connection CML/CMC Pipe
D-1	3/4" Meter, 1” Water Service Detail
D-2	1-1/2" Meter, 2” Water Service Detail
D-3	2" Meter, 2” Water Service Detail
E-1	Air Valve Installation 1” Diameter
E-1A	Air Valve Installation 2” Diameter
F-1A	4” Diameter Blow-Off Installation (PVC Pipe)
F-4	4” Diameter End of Line Blow-Off Installation
G-2/G-2A	Typical 6" Fire Hydrant Installation – PVC, DI Pipe
H-1	Fire Service/Double Detector Check Valve Installation
S-2	General Bedding Details Flexible Gravity Pipe
S-5	Typical Sewer Lateral
S-6A	Deep Lateral Flexible Gravity Pipe
S-7	Precast Concrete Manhole
S-16	Sewer Protection Details
S-17	Remodeling Details for Sewer Laterals
S-23	Manhole Cover – Locking Device
S-24	Temporary Manhole Plug

The Contractor's submittal Drawings and information under section titled "Data to be Submitted by the Contractor", as approved by the Engineer, are hereby made a part of the Contract Drawings.

4. STANDARDS MANUAL

The Jurupa Community Services District "Standards Manual", Latest Edition (including all Addendums), is hereby incorporated into these Specifications, and in case of conflict the highest and most stringent requirement shall govern. Copies of the "Standards Manual" are available at the District office for review and/or purchase by prospective bidders.

Contractor shall furnish and install all facilities in accordance with the latest revision of the Jurupa Community Services District's (District) Standard Specifications and Standard Drawings for Water Facilities are available from the District. The Contractor shall be in possession of District's Specifications and Standard Drawings on the job site at all times. Any construction and/or materials not covered in District Standards shall be approved by the District prior to construction.

5. CONTRACT COMPLETION SCHEDULE

All work under this contract shall be completed and operational (including all paving and final cleanup within **Three Hundred and Fifty (350) calendar days** following the date District provides written "Notice of Award" of Contract to the Contractor.

The contract completion schedule is firm and will not change. Completion time in calendar days includes Saturdays, Sundays, and holidays.

Unless otherwise ordered in writing by Manager, Contractor is hereby authorized to arrange for pipe delivery and preparation of shop fabrication submittals for fittings immediately upon award of contract; and to proceed with the work immediately upon execution of contract and receipt of the Notice to Proceed.

IF CONTRACTOR DOES NOT CONFORM TO THE ABOVE LISTED CONTRACT, OPERATIONAL AND COMPLETION SCHEDULES, THEN THE OWNER WILL ENFORCE THE AGREEMENT IN THE GENERAL CONDITIONS TITLED "LIQUIDATED DAMAGES".

6. RIGHTS-OF-WAY

A. GENERAL

Construction under these Special Requirements, Basic Specifications, and Drawings is located upon the land and/or near existing interference facilities under the jurisdiction of the following organizations:

1. Jurupa Community Services District
2. City of Jurupa Valley
3. Southern California Gas Company Distribution
4. Southern California Gas Company Transmission
5. Santa Ana Watershed Project Authority
6. Southern California Edison Company
7. Spectrum
8. Riverside County Flood Control
9. County of Riverside
10. AT&T Distribution
11. Crown Castle
12. Verizon - Frontier

B. JURUPA COMMUNITY SERVICES DISTRICT EXISTING INTERFERENCE AND EASEMENTS

The District's existing water and sewer facilities are shown on the contract drawings, in accordance with the recorded locations per the District's atlas sheets.

It shall be the Contractor's responsibility to conduct all his operations within the public right-of-way as shown on the Drawings. Additional easements that may be required by the Contractor to complete the work as hereby proposed shall be obtained by the Contractor at his own expense.

C. OTHER UTILITIES AND ORGANIZATIONS

The existing underground facilities are shown on the contract drawings in accordance with recorded locations per the particular utility's atlas sheets. Refer to section titled "Permits and Fees" for additional information.

7. PERMITS AND FEES

A. GENERAL

Contractor shall secure at his own expense all permits (including riders) and/or licenses necessary to the prosecution of the contract work, except for any permits and/or licenses stated herein to have been secured and paid for by the District. The Contractor shall also be liable for any expense, of any kind, associated with any permit or license, including those obtained by the District, in excess of payments made prior to contract award.

Contractor shall comply with the applicable requirements of all permits and/or licenses that have been secured by the District, all at no additional cost to the District.

B. RULES AND REGULATIONS OF UTILITIES AND OTHER ORGANIZATIONS

The Contractor shall determine and comply with all the applicable rules and regulations of the utilities and organizations listed in Paragraph "A" of section titled "Rights-of-Way" of these Special Requirements. The Contractor shall contact all of the listed utilities and/or organizations prior to the start of construction so they may mark the exact location of their facilities or utilities that may be in conflict with this project.

The cost of any work necessitated for the convenience of the Contractor during construction is reimbursable to that particular utility or organization, and the Contractor shall pay such charges to said utility or organization at no additional cost to the District.

C. CITY OF JURUPA VALLEY

Contractor shall contact City of Jurupa Valley to determine applicable permit requirements including but not limited to, traffic

control, pavement removal and restoration, working area, staging area and working hours prior to bid the project, apply for, obtain, and pay for the Encroachment Permit, all Rider Permits and Extensions. Contractor shall include all such expenses in the bid proposal and no additional compensation will be made for such expenses and no time will be awarded in the event the encroachment permit is delayed.

The Contractor shall determine and comply with all City rules and regulations applicable to the contract work, including complying with the City's Best Management Practices (BMP) requirements for storm water control and protecting, at no additional cost to the District.

The Encroachment Permit from the City of Jurupa Valley is applicable to various City roads affected by the contract work. Refer to Appendix B.

The Contractor shall obtain a business license from City of Jurupa Valley, if required by the City. The Contractor shall pay the associated fee at his own expense.

Replacement paving in all paved roads, grinding and capping, traffic control, restriping, special trench backfill, special class 2 aggregate base requirements, etc. shall be in accordance with the City of Jurupa Valley Standards and City of Jurupa Valley permit requirements. The Contractor shall notify the City of Jurupa Valley Permit Section at (951) 332-6464 at least two (2) working days prior to starting construction. If the proposed pipeline crosses a paved street at an angle other than 90 degrees, the limits of pavement grind and overlay shall be at right angles to the street centerline and shall encompass the entire trench paving. Contractor shall replace or repair any damaged or altered existing improvement within public right-of-way as direct by the City Engineer.

D. CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD, SANTA ANA REGION PERMIT

Contractor shall channel (using sandbags or other means) flushing flow. Contractor shall protect all property from flooding and other damage during flushing operations. Contractor shall post "flooding ahead" signs in streets as required and as directed. Because of demand on existing water system, Cities may require Contractor to flush the pipeline over several days, in the evenings, weekends, or holidays.

Contractor shall not allow any discharges from the construction site which may have an adverse effect on receiving waters of the United States.

Contractor shall, at his expense, obtain a discharge permit from the California Regional Water Quality Control Board, Santa Ana Region (Regional Board) for discharge of water from trench dewatering, line flushing, and testing operations. A copy of said discharge permit shall be provided to the Owner. Contractor shall comply with conditions therein and perform the monitoring required. If the Regional Board determines that a discharge permit is not required for said work, then the Contractor shall comply with any and all applicable criteria and conditions established by the Regional Board, including compliance with the requirements of the General Water Discharge Requirements for Discharges to Surface Waters which pose an insignificant De Minimus threat to water quality (Order No. 98-67).

Order No. 98-67 includes submittal of a Notice of Intent and a waste discharge report to the Regional Board. In addition, Template Monitoring and Reporting Program No. 98-67, appended to Order No. 98-67, includes the following monitoring and reporting requirements:

(a) Estimate and report daily discharge flow, collect samples of each discharge and have them analyzed for the 8 parameters listed on Pages 2 and 3 of the Template

Monitoring and Reporting Program No. 98-67. All samples shall be representative of the waste discharge under conditions of peak load.

All sample collection, sample preservation, and analyses shall be performed in accordance with the latest edition of "Guidelines Establishing Test Procedures for Analysis of Pollutants" promulgated by the U. S. Environmental Protection Agency (40 CFR 136). All samples analyses shall be performed by an analytical laboratory certified by the California Department of Health Services to perform such analyses.

(b) Report any discharge which is in violation of the discharge specifications (Order No. 98-67) to the Regional Board, Santa Ana Region within 24 hours.

(c) Notify the Regional Board 5 days before commencing any discharge.

(d) Prepare monthly monitoring reports for submittal to the Regional Board. The reports shall include:

1) Results from all analyses for the previous month.

2) Daily flow data.

3) A report detailing Contractor's compliance or noncompliance with Order No. 98-67 and the discharge authorization letter.

8. PRIORITY CONNECTIONS

Contractor shall begin construction activities at the intersection of 50th Street and Rutile Street and complete the work within Rutile Street and 56th Street before moving on to the remainder of the Project. The District reserves the right to require that certain connections to existing water lines be completed as first priority work to avoid shut-down of District facilities during periods of high water demands. Information regarding any required priority connections will be made available to the Contractor at the pre-construction conference.

9. DATA TO BE SUBMITTED BY CONTRACTOR

Contractor shall submit to the Engineer for approval detailed shop drawings and schedule. No pipe and other facilities shall be manufactured until the drawings have been approved. Owner may require electronic color copy (PDF) and/or five (5) copies of submittals. The Owner will review and return the initial submittals within ten (10) working days. Resubmittals will be reviewed and returned within five (5) working days following receipt.

The Engineer's approval of the Contractor's submittal data shall not relieve the Contractor from having the entire responsibility for the correctness of details and dimensions. The Contractor shall assume all responsibility and risk for misfits due to any errors in the Contractor's submittal data. The Contractor is hereby notified that any proposed deviation for the contract document shall be clearly indicated on each submittal; and if not so, submittal may be subject to rejection.

Contractor shall prepare a potholing report documenting field data including, but not limited to date, street name, stationing, utility, size, depth and conflict. Contractor shall submit the pothole report within fifteen (15) calendar days from "Notice of Award". Contractor shall either identify the conflicting utility or confirm there is no conflict per his pothole data. The format for the pothole report shall be per Appendix E.

Upon completion of utility potholing, and the pothole report is accepted by the Owner, Contractor shall submit shop drawings for all special pipe fittings, pipe lay sheets for all piping within seven (7) calendar days from the acceptance of potholing report. The owner will review and return submittals within seven (7) working days and Contractor shall resubmit revised shop drawings within seven (7) working days upon receiving the review comments from the Owner. Contractor shall be aware that the resubmittal shall be substantially completed and all comments have to be addressed. Any delay due to incomplete shop drawing submittal/re-submittal or late submittal/re-submittal will be on Contractor and no additional time will be granted.

In addition to the above, the Contractor shall submit to the District for approval, manufacturer's data sheets, brochures, etc. for appurtenant materials,

shoring and bracing design, etc. A list of the minimum required submittals is as follows:

Schedule

- Schedule and Plan
- Submittals
- Review and approval period
- Material delivery
  - Installation
  - Testing and Bypass Procedure
  - Final site work and cleanup
- Schedule/Phasing of Construction

Pipeline Material

- PVC Pipe
- Pipe Layout Drawings
- Fold and Form Pipe Materials

Appurtenant Submittals

- Gate Valves
- Fire Hydrant
- Air Valve
- Blow-Offs
- Warning Marking Tape
- Concrete Mix Designs
- AC Paving Mix Design
- Aggregate Base Gradation
- SE30 – Sand Gradation
- Manholes
- Manhole Frame and Cover

Miscellaneous

- Schedule of Values
- Construction Schedule (see Section entitled “Contractor’s Schedule of Work” for details)
- Potholing Report
- BMP as Required by the City of Jurupa Valley
- Pipeline Testing and Disinfection Procedures
- Copies of Permits and Riders Required to be Obtained by Contractor
- Air Testing Procedure
- Fold and Formed Pipe Installer qualifications

- Fold and Formed pipe equipment and detailed procedure, including video and testing and related specific data.
- Method to protect existing utilities in proximity.
- Dewatering equipment and detailed procedures
- Sheeting and Shoring Details (for record only)
- Construction Phasing Plan
- Testing Plan (Sewer)
- Detailed Sewer Bypass Plans and OERP

Contractor shall submit the Pipeline Testing, Filling, Flushing and Disinfection Procedures within one week from Notice to Proceed for District review and approval. Contractor shall allow time for District's review in his schedule and no additional time will be awarded, no exception. These procedures shall be submitted prior to commencement of work and no additional time will be awarded to the contract due to failure to submit these procedures on a timely manner.

The Engineer's approval of the Contractor's submittal data shall not relieve the Contractor from having the entire responsibility for the correctness of details and dimensions. The Contractor shall assume all responsibility and risk for misfits due to any errors in the Contractor's submittal data.

10. MATERIAL FURNISHED BY CONTRACTOR

The Contractor shall furnish all materials (except those materials which may be furnished by Owner stated in Section 11 herein) necessary to complete the contract work, all in strict accordance with the Special Requirements, Basic Specifications, and Drawings.

In addition, the Contractor shall furnish all labor, skills and services required for the installation of all materials (including those materials which may be furnished by Owner stated in Section 11 herein) to provide the Owner with a complete project, in accordance with the Special Requirements, Basic Specifications and Drawings.

11. MATERIAL FURNISHED BY OWNER

The Owner will furnish water meters for the new water meter installations (to be installed by Contractor). Refer to Section 20 ("Meter and Service Connections") herein for additional information.

12. CONTRACTOR'S SCHEDULE OF WORK

Within ten (10) calendar days from the "Notice of Award", the Contractor shall submit practicable schedules which shall show the order in which the Contractor proposes to carry on the work, the dates at which the Contractor will start the work, and the estimated dates of completion of the each part. The District reserves the right to approve or alter the Schedule proposed by the Contractor, prior to the start of work.

The Contractor's schedule shall reflect progress of project as work is being completed. The schedule shall generally provide the following main items and milestones along with corresponding details:

- Pre-Construction Video (above ground)
- Pre-Construction Sewer Video (sewer pipelines)
- Potholing
- Pre-construction survey sewer manhole rim elevations
- Traffic Control Plans submittal and approval process with City of Jurupa Valley
- Submittals review and approval period
- Materials delivery
- Schedule of construction
  - Potholing and verify existing facilities
  - Project Phasing (Work at the intersection of 51st Street and Felspar St. shall be completed first, followed by work in Felspar St.)
  - Permits needed for construction
  - Installation
  - Testing, flushing, disinfection
  - Connections
  - Final walk through, site work, cleanup
  - Punch Lists

Contractor shall submit updated project schedules to District as follows:

- Once per month after Contractor receives written "Notice of Award" of contract
- Any time a change in the schedule and/or change in work has occurred

- Submitted with progress pay requests (status/completion items as shown on the schedules shall be consistent with the progress pay requests)

The District reserves the right to approve or alter the Schedule proposed by the Contractor, prior to the start of work. Additionally, the District may establish priorities for completion of certain parts of the work which may be necessary to provide certain services or which the District may deem advisable in the interest of public safety and convenience.

The construction schedules submitted shall be consistent in all respects with the time requirements of the contract.

13. MANHOLE CONSTRUCTION

All sewer manholes are to be constructed in accordance with JCSD Standard Detail Drawings S-7, unless specifically stated on the construction drawings. All couplings shall be ARC as approved by the JCSD. In existing non-paved areas, the contractor shall install a 6-foot by 6-foot square concrete pad around manholes at existing ground surface elevation and sewer markers. The pad shall be minimum of 6-inch thick. Manhole rim elevation shall be 3-inches above the existing grade unless stated otherwise on the construction drawings. Contractor shall install a water-tight manhole lid with an approved locking mechanism per Construction Drawings. In the paved streets Contractor shall construct a concrete collar around manholes. The collar shall include Sika Fibermesh and be 1 foot in width (5' OD, 2' ID), as well as extend to the full depth of the grade rings. Where called out on the project plans, the cost for furnishing and installing a pad, collar, watertight or locking lid shall be included in the unit price per manhole, and no additional compensation will be made, therefore.

14. BEDDING REQUIREMENTS

All bedding shall be of the type indicated on the plans and shall be in accordance with JCSD Standard Detail Drawings S-2, and the Basic Sewer Pipeline Construction Specifications (Sections entitled “Pipe Bedding” and “Trench Backfill and Compaction Requirements”). The cost for furnishing and

installing the bedding (and pipe zone) material shall be included in the unit price per linear foot of sewer pipe, and no additional compensation will be made, therefore.

15. BYPASSING OF EXISTING SEWER SYSTEM/PHASING PLAN

Portions of the proposed sewer replacement will require sewer flows to be temporarily bypassed at certain locations. Within 20 Calendar Days after the Notice to Proceed, the Contractor shall generate, and submit to the JCSD, a "Phasing / Sewer Bypass Plan" that details the general order of construction, complete with details of where, when, and how the Contractor plans to make connections to the existing sewer mains, manholes, an sewer laterals; the detailed operation of the equipment, including cleaning and flushing; and all equipment to be used. For additional requirements, refer to Appendix G for the District's Sewage Bypass and Pumping Plan (SBPP) with Overflow Emergency Response Plan (OERP). Proposed sewer bypass shall only be utilized temporarily during normal working hours, and the existing sewer shall be put back into service each day. The temporary bypass will be allowed to operate overnight only with specific approval by the JCSD. Requests for overnight bypass shall be detailed in the submitted "Phasing / Sewer Bypass Plan."

The Contractor shall construct, operate, maintain and remove, without damage to existing structures, all temporary sewage handling facilities. The Contractor shall supply the pumps, conduits, power, labor and other equipment to divert the flow of sewage around the areas where work is to be performed. The bypass system shall be of sufficient capacity to handle existing flow and, if required by the Contract Documents, additional flow during a rainstorm. The Contractor shall have on-site a 100% backup of the by-pass systems and capable of pumping 150% of the existing flow. The design, installation and operation of the temporary pumping system shall be the Contractor's responsibility through the duration of the project.

Peak Wet Weather Flows are estimated as follows:

- Manhole (Manhole #1743) at the intersection of 44th St and Pedley Rd: 0.0040 mgd
- Manhole (Manhole #1748) near the intersection of 44th St and Pedley Rd: 0.0079 mgd
- Manhole (Manhole #6566) at the intersection of Tammy Ln and Pedley Rd: 0.0026 mgd
- Manhole (Manhole #1745) at the intersection of 45th St and Pedley Rd: 0.0038 mgd
- Square Manhole (Manhole #1807) at the intersection of Agate St and Wild Pony Dr: 0.0072 mgd
- Manhole (Manhole #1752) at the intersection of Agate St and 45th St: 0.0108 mgd
- Manhole (Manhole #1751) near the intersection of Agate St and Tourmaline Ct: 0.0060 mgd
- Manhole (Manhole #1747) at the intersection of Galena St and Pedley Rd: 0.0023 mgd
- Manhole (Manhole #1749) near Jurupa Middle School on Galena St: 0.0546 mgd

Service to laterals shall be disrupted for a period of no more than 6 hours. Laterals within residential areas shall only be out of service between the hours of 8:00 am to 4:00 pm, Monday through Thursday and 8:00 am to 3:00 pm, Friday. Laterals within business areas shall be addressed on a case by case basis. If Contractor feels that it is necessary to disrupt lateral services for a period longer than 8 hours, Contractor shall provide alternate means of service without disrupting use of the service by the owner/resident.

The Contractor shall arrange for, furnish, and install all required bypass equipment, pumping trucks, generators, piping, fittings, connections, etc.

required to temporarily bypass the existing sewer flows during construction of new sewer installation as well as the CIP Liner installation.

The Phasing / Sewer Bypass Plan shall include but not be limited to details of the following:

1. Bypass start and end dates;
2. Name and phone of who is responsible for daily operation;
3. 24-hour contact information in case of operational emergency;
4. A Spill Response Plan Should be included as part of this bypass pumping plan;
5. A flow monitoring plan (to verify bypassing system can handle the flows) should be included as part of this bypass pumping plan.
6. Staging area for pumps;
7. Traffic control measures to accommodate bypass equipment and staging area;
8. Sewer plugging method and types of plugs;
9. Number, size, material, location and method of installation of suction piping; and
10. Number, size, material method of installation and location of installation of discharge piping;
11. Bypass pump sizes, capacity, number of each size to be on site and power requirements;
12. Calculations of static lift, friction losses, and flow velocity (pump curves showing pump operating range shall be submitted);
13. Standby power generator size, location;
14. Downstream discharge plan specifying how bypassing sewer will be handled or directed.
15. Method of protecting discharge manholes or structures from erosion and damage;

16. Thrust and restrain block sizes and locations;
17. Sections showing suction and discharge pipe depth, embedment, select fill and special backfill;
18. Method of noise control for each pump and/or power generator;
19. Any temporary pipe supports and anchoring required;
20. Design plans and computation for access to bypass pumping locations indicated on the drawings;
21. Calculations for selection of bypass pumping pipe size;
22. Schedule for installation of and maintenance of bypass pumping lines;
23. Plan indicating selection location of bypass pumping line locations;
24. Sequence for bypass removal and sewer main system cleaning.

The associated costs of sewer bypass should be covered in Bid Item 209.

16. ABANDONMENT OF EXISTING SEWER FACILITY

Where called out on the project plans, the Contractor shall abandon existing sewer pipeline and manholes per “Green Book Section 306-5,” applying the following procedures:

1. The interfering portion of the “to be abandoned” sewer pipeline shall be removed, and the remaining open portion shall be plugged and securely sealed.
2. The seal shall consist of a wall of concrete not less than 6-inches thick or an 8-inch thick wall of brick and mortar.
3. Contractor shall remove the upper portion of manholes (cover, frame, and grade rings) to 2-foot minimum depth.
4. The bottoms of abandoned manholes shall be adequately perforated to prevent any entrapment of water.

5. Contractor shall bulkhead all existing manhole inlets and outlets with minimum 12-inches of 4,000 psi concrete or non-shrink grout for permanent blockage.

6. The abandoned manhole shall then be filled with sand compacted to a relative compaction of 90 percent.

7. Contractor shall use mechanic plug to temporary blockage outlet in manholes.

All costs for the sewer pipeline and manhole abandonment are included under a lump sum bid item. No further compensation for abandonment will be made.

The bypass of the existing sewer is covered under "BYPASSING OF EXISTING SEWER SYSTEM/PHASING PLAN," Item 15 of the Special Requirements and Basic Specifications, Section E.

17. REMOVAL OF EXISTING SEWER FACILITY

Some sections of the existing sewer need to be completely removed. The Contractor shall completely excavate and remove the existing sewer pipeline and manholes, applying the following procedures:

1. The designated section(s) of the sewer pipeline shall be removed, and any remaining open portions of pipe shall be plugged and securely sealed. If any existing pipe is encountered that is not shown on the plans, it shall not be removed until the JCSD has been notified of its presence and approved its removal.

2. Any necessary end seals (at points of removal) shall consist of a wall of concrete not less than 6-inch thick or an 8-inch thick wall of brick and mortar.

3. Contractor shall remove all sections of the existing manholes (cover, frame, rings, & base). Manhole frames and covers/lids shall be salvaged to the JCSD operations yard. All other removed materials of the existing sewer and shall be transported appropriately offsite for disposal.

4. Areas disturbed by removal shall be backfilled in accordance with the sections of these specifications applicable to adjacent construction.

All costs for the sewer pipeline and manhole removal are included under a lump sum bid item. No further compensation for abandonment will be made. The bypass of the existing sewer is covered under “BYPASSING OF EXISTING SEWER SYSTEM/PHASING PLAN,” Item 15 of the Special Requirements.

Connections to existing sewer mains and/or existing manholes shall be made as indicated on the plans. All costs associated with the connections shall be included in the lump sum bid price for the applicable connection were shown on the bidding sheet, and no additional compensation shall be made, therefore.

Refer to Basic Specifications in Section B for additional information.

18. POTHOLING OF EXISTING UTILITIES BY CONTRACTOR

The Engineer has shown from a record research the approximate location of known underground interference facilities. Contractor shall field determine the exact location and depth of all existing underground interference and immediately notify the Engineer in the event there is a conflict with the proposed pipeline alignment or grades. Contractor shall "pothole" all utility line crossings, unless the utility performs the potholes, in which event Contractor shall pay any potholing charges from the utility. The Owner reserves the right to make minor adjustments (12-inch) in alignment and grade, **all at no additional cost to the Owner and no time extension will be awarded**.

The horizontal position of existing underground utilities, including existing water mains, as shown on the drawings, has been determined by record. Where no elevation is shown, the Contractor shall excavate the utilities shown to be within the construction area, and verify their position prior to construction. Any variation from the positions shown on the drawings with the position determined by verification shall be immediately reported to the Engineer.

Adjustments to the alignment and depth of the proposed improvements shall be made based on the actual position and condition of the existing utilities as determined from the above verification.

Where underground main distribution conduits such as water, gas, sewer, electric power, telephone or cable television are shown on the Plans, the Contractor, for the purpose of preparing a Bid, shall assume that every property parcel will be served by at least one (1) service connection for each type of utility.

Prior to submitting shop drawings, the Contractor shall pothole and expose the existing water lines where connections will occur and verify the elevation, location, configuration and angle. Approval by the District of a proposed connection to the District facility does not imply approval of the correctness of the elevation and/or location shown on the plans. Contractor shall make any and all adjustments, provide all fittings, make any field adjustment required to meet field conditions.

Contractor shall submit a signed report to the District describing the findings of the potholing efforts prior to commencement of construction. See Appendix section of these specifications for sample. Said report shall include at the minimum: the vertical and horizontal locations of the potholed facilities, the sizes and material of the conduits and pipe, and the orientation of the facilities. If Contractor does not report any conflict regarding the existing facilities and the proposed facilities, the District will assume that the proposed design is sufficient. If significant interference is found on existing facility during the initial potholing efforts, Contractor shall begin construction on the portion of the proposed improvements with no conflicts to accommodate re-designing efforts. If, during construction a conflict between facilities arises, all additional costs for re-designing the proposed pipeline shall be borne by Contractor no additional cost and delay will be awarded to the Contractor.

In addition to the requirements provided above, the format of the report and scheduling of the pothole efforts shall be as follows. The report shall document field data including, but not limited to: date, street name, stationing per

contract drawings, utility, size, top and bottom depth, materials, conflict. Contractor shall submit the signed pothole report within twenty (20) calendar days from date of “Notice to Proceed”. In the pothole report, Contractor shall identify all conflicting utilities and confirm that there are no conflicts on all other utilities.

As provided in Section 4216 of the California Government Code, at least two (2) working days prior to commencing any excavation, if the excavation will be conducted in an area which is known, to contain subsurface installations, the Contractor shall contact the regional notification center (Underground Service Alert of Southern California) and obtain an inquiry identification number.

19. WATER SERVICES TIE OVER

The Contractor shall provide detailed construction phase plan showing construction at each street with anticipated start date, duration of construction as well as the plan for services tie overs and connections. Contractor shall connect to the existing water system as indicated on plans, install new fire hydrants, air valves, valves, disinfection, pressure testing and cross-over of services from the exiting water system to the new water system, and abandonment of existing water system. Temporary paving will be required and maintained by the Contract until the project is reading for final grind and overlay, striping, street and improvements restoration, punch list, and District approval and acceptance.

20. METER AND SERVICE CONNECTIONS

The basic types of meter and service line connection is summarized below:

A. A proposed new service line will be installed and utilize the existing meter and a new meter box. Contractor shall connect the existing private service line to the meter at the new location of the meter and new meter box.

All existing public and private facilities adjacent to the contract work which are damaged or removed by the Contractor shall be restored or replaced in kind. Said facilities include but are not limited to all landscaping, irrigation works, decorative lighting, fences, block wall, driveways, curbs and gutters, sidewalks, paved surfaces and structures.

All costs associated with restoration shall be included in the Contractor's bid.

21. EXISTING UNDERGROUND UTILITIES

Contractor shall understand that the existing underground facilities as shown on Drawings are from record only, and NO FIELD CHECK was made to establish their exact location. Also, other underground facilities may exist. Therefore, it shall be Contractor's responsibility to locate, protect, preserve, etc., all existing underground or overhead facilities, in accordance with other applicable provisions of Special Requirements, Basic Specifications, and Drawings.

22. ALLOWABLE VARIATIONS IN PIPELINE ALIGNMENT

The pipeline alignment, as shown on the Plans, was determined form record land net data and interference information obtained from utility agencies. The alignment shown on the Drawings is the alignment for bidding purposes. After the award and prior to the commencement of construction, it will be necessary to review the pipeline alignment with the potholing information conducted and submitted by Contractor prior to Contractor's submittal of pipe fabrication and shop drawings, since experience shows that field conditions can often be different than recorded information regarding interference facilities.

The basic procedure to be used to verify (or adjust) pipeline alignment prior to submittal of pipe fabrication and shop drawings is as follows:

A. Using the pipeline alignment shown on the Plans as a guide, Contractor shall field pothole all underground utilities needed along the route of the pipelines.

B. Contractor shall submit potholing report prior to submittal of pipe fabrication and shop drawings for approval. The report shall include the horizontal and vertical location of those utilities and point of connections. Contractor shall identify the conflicts with installation of the water pipelines. Contractor shall also validate the horizontal alignment location and vertical profile shown on the construction drawings if no conflict exists.

C. Upon receiving the potholing report the Engineer will review or, where necessary, make modifications to accommodate the utility conflict.

D. Contractor shall then submit pipe fabrication and shop drawings based on the modified construction drawings

E. The specifications provide that the Owner may vary pipe alignment a small amount 12 inches or less (ALL AT NO ADDITIONAL COST TO THE OWNER AND NO TIME EXTENSION WILL BE AWARDED).

These modifications shall be recorded by the Contractor on the "As-Built" drawings.

23. PIPELINE COVER

All pipelines shall be installed with no less than 48" of cover unless otherwise shown on the Drawings or approved by the Engineer.

24. CONSTRUCTION WATER

The Contractor shall arrange, pay for and furnish construction water from the existing water systems located in the general vicinity of the contract work (Jurupa Community Services District). The Contractor shall pay for, furnish and install all necessary piping, all certified backflow assembly devices, fittings, connections, pumps, water trucks, gauges, hydrant meters, etc., in accordance with the regulations of the providing agencies, required to provide approved facilities to deliver construction water to the jobsite for all construction activities, flushing, disinfection, testing and filling into pipelines to be constructed herein. All costs associated with the Contractor providing construction water shall be included in the appropriate bid items. Facilities installed or equipment traffic generated by the Contractor on existing streets and properties shall not restrict and impede access to vehicles, pedestrians, and property owners.

When backflow assembly devices are removed, relocated, and reinstalled due to District requests, construction activities, Contractor’s convenience, or for any other reason or requirement, the Contractor shall re-certify the backflow assembly devices prior to using said device. All costs shall be included in the appropriate bid items.

25. CONSTRUCTION STAKING

A. Pre-Construction Survey

Prior to start of construction, Contractor shall perform pre-construction field survey in order to obtain current, existing topography of the project site prior to disturbance. The field topo and boundary survey shall encompass all existing improvements, elevations, plantings, surfaces, trails, dirt roads, grades, sidewalks, streets, pavements, all above ground features, elevations, layout of gates, posts, fencing, signs and any other above ground improvements. This work shall be performed by a Licensed Land Surveyor registered in the State of California. The survey plans shall be signed and sealed by the Licensed Land Surveyor and shall be submitted to the District for records. This survey shall be utilized by the Contractor to re-establish pre-existing grades and restore the site to existing conditions.

B. Surveying and Staking

The Contractor will provide all construction staking in accordance with Contract Documents. One (1) set of stakes must be provided at 50-foot stations plus horizontal and vertical angle points and appurtenance outlets for the waterline. Any costs for restaking due to stakes lost during construction and/or due to any other cause, shall be the responsibility of the Contractor. If the Contractor requires additional staking, the Contractor will be responsible for the additional survey/staking costs. All plans, descriptions and calculations related to surveying including grade sheets, shall be signed and stamped by the Contractor's Land Surveyor, or Professional Engineer authorized by the State of California to practice land surveying.

The Contractor shall provide the District all cut or grade sheets and survey data within no more than two working days after staking and no less than three days prior to construction for any particular phase of the construction work.

C. Lines and Grades

All work under this Contract shall be built in accordance with the lines and grades as shown on the drawings. Distance and

measurements, except elevations and structural dimensions, are given and made on horizontal planes. For pipeline work, the surveyor will provide offset line and grade stakes at ground level and furnish cut sheets. The Contractor shall be responsible to transfer of such line and grade into the trench for construction of the work and for accuracy of the transfer cost of transfer shall be included in the unit bid for the work and no extra compensation will be made to the Contractor. The Contractor shall preserve bench marks, survey stakes, and points sets for lines, grades, or measurement of the work in their proper places until authorized by the Project Engineer to remove them. The Contractor shall provide the Engineer with Cut Sheets for approval a minimum of three (3) working days prior to commencing construction. All issues with the staking shall be specifically marked on the cut or grade sheets when these are provided to the District and submitted as an RFI for specific resolution.

D. Potholing

The Contractor shall provide coordinates and elevations, (x, y and z coordinates) of all potholing. The coordinates shall be referenced to the plan provided by the Engineer. Survey of all potholing locations shall be considered part of the construction staking and included in the bid item. No additional compensation will be allowed.

E. Data Provided by the Owner

The Owner or Engineer shall provide the design data in AutoCad/Civil 3D 2015 format with control data (Northing, Easting) for monumentation shown on recorded maps only. Control data provided by the Owner shall be verified for conformance to the recorded map by the Contractor prior to use for any purpose. The Contractor is responsible for determining if any conflict exists. The Owner makes no representation as to the compatibility of this Data with your hardware or your software beyond the specified release of referenced specifications. The Data provided is part of the Owner's proprietary instruments of service and shall not be used by the Contractor or anyone else receiving this datum through or from the Contractor for any purpose other than as a convenience for construction staking services for this project. To the extent that the Data is electronic files, those files are not the approved construction

documents. Further, differences may exist between this Data and corresponding hard-copy, engineering documents or recorded survey documents. In the event that a conflict arises between the signed, recorded or sealed hard-copy survey documents or construction documents ("Hard-Copy Documents") prepared by the Owner and the electronic files, the Hard-Copy Documents shall govern. The Contractor is responsible for determining if any conflict exists. By use of this Data, the Contractor is not relieved of his duty to fully comply with the contract documents, including, and without limitation, the need to check, confirm and coordinate all dimensions and details, take field measurements, verify field conditions and coordinate your work with that of other contractors for the project. To the extent that the Data is intended to be used for staking and/or grading of property, the Contractor should be aware that the Data was prepared anticipating that a duly licensed and qualified Land Surveyor would perform on-site interpretation, verification, cross-checking and field-correction of the Data at the time of actual staking of the property prior to grading.

If changes are required to the original design, the Owner will provide to the Contractor redlined changes on the original plans in PDF format only of the approved changes.

26. CONNECTIONS TO EXISTING WATER SYSTEM

Contractor shall furnish and install connections to the existing water system at locations shown on Drawings, and perform all work required including any necessary field measurements, cuts-to-fit, temporary connections, and field fabrications AS REQUIRED TO MEET EXISTING CONDITIONS.

Contractor shall construct all said connections so that any downtime of existing water systems, due to connection work, shall occur during normal working hours as directed by Owner. However, Owner reserves the right to require the connections be made after normal working hours if the conditions warrant.

CONTRACTOR SHALL COOPERATE WITH OWNER IN SCHEDULING ALL CONNECTIONS, AT LEAST FIVE (5) WORKING DAYS IN ADVANCE.

Owner will operate all existing valves necessary for Contractor to accomplish said connection work.

Contractor shall conduct his work activities in order that the existing water system will be kept in service until after the proposed pipelines are operational, and all services are transferred to the new watermains. After the new water system is operational, the existing system shall be abandoned (where indicated on Drawings) and the Contractor shall plug or cap the existing abandoned waterline as required and directed in the field by the District.

27. SEWER LINE VIDEOTAPING

The locations of existing sewer laterals are not shown on the plans. In order to verify the exact locations of the existing sewer laterals, the Contractor shall video the existing sewer mains along the alignment and the lateral locations accurately determined by distances from existing manholes structures. Once the sewer main is installed, the proposed sewer system shall be videoed. All damages caused to any sewer main or lateral shall be repaired at no additional cost to the District.

The bidder shall include the cost of videotaping in the appropriate bid items and no compensation will be made to the Contractor by the District. Provide second copy of sewer video in DVD format along with video tape. The video inspection equipment shall include a depth gauge, acceptable to the District, capable of measuring potential offsets encountered during the inspection. Prior to the video inspection, the contractor shall be responsible to provide the following items:

A. Clean sewer pipelines free of all dirt, rock, debris, etc.

B. Water source with an adequate amount water, pipe, hose, etc. to place enough water in the pipelines to evaluate pipeline alignment "SAGS".

C. Drivable truck access to each manhole within the system to be videoed.

D. Provide all traffic control methods required.

Should any of the aforementioned items not be in compliance by the time the video inspection is to occur, the contractor shall be subject to compensating the District for all costs incurred.

Full compensation to the contractor for complying with the above requirements shall be considered as included in the contract lump sum provided for such work and no additional allowance will be made therefore.

Upon completion of the video for the subject sewerlines, the video inspection company will provide the District with the DVD (video file format to be viewable on a standard DVD player/computer and/or as approved by the District) and a written report detailing the condition of the interior of the mainline and joints. Subsequent to review of the DVD and report by the District, the District will notify the Contractor that he may then proceed with completion of the project; or the District will provide a list of corrective measures that must occur prior to acceptance.

Should remedial activities be necessary, the reconstruction methodology shall be approved by the District and any other jurisdiction having authority prior to commencement of the work. Upon completion of the remedial construction, the contractor shall once again notify the District that the sewerlines are ready for a video inspection. The District reserves the right to re-video any portions of the sewer system they determine may have been affected by the reconstruction work activities. Further, all related costs including but not limited to reconstruction materials, labor, equipment, video inspection, District and other agency inspection, and administrative costs shall be borne by the contractor.

(Closed Circuit Television Inspection - CCTV)

1. Rotating lens camera with articulating head.

2. Scanning capabilities of 360°.

3. Operative in 100% humidity conditions.

4. Lighting for the camera shall minimize reflective glare.

5. Lighting and camera quality shall be suitable to provide clear, in focus picture of the entire periphery of the pipe for all conditions.

6. Camera focal distance shall be adjustable through a range from 6" to infinity.

7. Remote reading distance (footage) counter shall be accurate to one percent (1%) over the length of the particular section being inspected. Depth gauge.

8. The camera, television monitor, and other components of the color video system shall be capable of producing a minimum of 350 line resolution.

9. Documentation consisting of a DVD (video file format to be viewable on a standard DVD player/computer and/or as approved by the District) and a written report detailing the condition of the mainline and joints shall be submitted to the District inspector immediately following the video inspection.

28. SEWER LATERAL PROTECTION AND RESTORATION

The exact location of existing sewer laterals and their depths are not known. Contractor shall contact the District for assistance regarding the approximate location of sewer laterals, and Contractor shall be required to use caution when excavating near suspected locations of sewer laterals. In case of damage to the existing sewer laterals as a result of construction, the Contractor shall make the necessary repairs at his expense. All couplings used shall be ARC as approved by the District.

All sewer lateral replacement, due to being damaged shall be performed in accordance with JCSD Std. Dwg. No. S-5 and S-17.

29. SEWER LATERAL CROSSINGS

The exact location of existing sewer laterals and their depths are not known and are not shown on the plan. Contractor shall contact the District for assistance regarding the approximate location of sewer laterals, and contractor shall be required to use caution when excavating near suspected locations of sewer laterals. In case of damage to the existing sewer laterals as a result of construction, the Contractor shall make the necessary repairs at his expense.

In cases where the proposed watermain must cross under existing sewer laterals as determined by Engineer, in order to maintain design grade or to avoid conflict in grade, the Contractor shall construct the crossing, in accordance with JCSD Standard Drawing No. A-10 "Typical Sewer Lateral Crossing Over Watermain" attached in the back of these specifications. Payment for these special crossings will be made in accordance with the unit bid price for each crossing, and no additional compensation will be made therefore.

30. REMOVAL AND DISPOSAL OF ASBESTOS CEMENT PIPE

Asbestos Cement Pipe (ACP) shall be removed and disposed of in accordance with all applicable local and state laws. All work involved in the removal, salvage or disposal of ACP shall be the responsibility and at the expense of the Contractor.

All scrap ACP shall be properly manifested and prepared for transport following state and local criteria. The scrap material shall be delivered to a landfill permitted for disposal of asbestos containing materials.

Small pieces of ACP less than three feet long must have all broken edges encapsulated (sealed) with an approved product and double wrapped in a durable 6 mil plastic which is properly sealed to prevent expulsion of dust particles.

Intact ACP over three feet long does not have to be double wrapped in 6 mil plastic. Any broken edges; however, must be encapsulated with an approve product. Certane 1000 Post Removal Encapsulant or equal.

Asbestos containing pipe will be accepted into the landfill if the pipe is intact and if broken edges are encapsulated using approved products and techniques. Small pieces of asbestos containing pipe less than three feet long must have any broken edges adequately encapsulated and it must be double wrapped in a durable 6 mil plastic which is properly sealed to prevent the expulsion of dust particles.

The landfill will accept a maximum of two packaged loads per day per generator, unless prior approval has been obtained from the Solid Waste Division.

Each load must be accompanied by manifest indicating that ACP was properly disposed on and not the Owner’s responsibility. The completed copy of the manifest shall be returned to the Owner after disposal.

31. TRAFFIC CONTROL

It shall be the Contractor's responsibility to maintain traffic warning signs, barricades, flagmen, and other traffic control devices as required to maintain traffic, and as required by agencies having jurisdiction over the roadways in the work area. It shall be the responsibility of the Contractor to investigate with various agencies having jurisdiction over the right-of-way in work area to determine the extent of traffic control that may be required.

It shall be the Contractor's responsibility to have a traffic control plan prepared under the supervision and signed by a Civil Engineer registered in the State of California for work done in the street right-of-way and implement said plans. It shall be the Contractor's responsibility to obtain approval of said traffic control plan from the City of Jurupa Valley prior to working in said road right-of-way. This plan shall include but not be limited to signing plan, traffic control plan, detour plan, etc.

The Contractor shall account for this additional cost in the appropriate bid item numbers in the Bid Schedule. The Contractor shall comply with all provisions of the City of Jurupa Valley Encroachment Permit with respect to maintaining the flow of traffic during construction.

32. CONSTRUCTION VIDEO PHOTOGRAPHY

A. Description

This Section covers pre-construction video photography of the work area to support proof of pre-existing pavement conditions and sign locations for visual comparison to the post-construction conditions. The requirements specified in the Condition of Contract also form part of this Section.

B. Video Photography

Provide video and audio DVD of the site prior to placing markings of any kind on the pavement, sawcutting or removal of materials. The DVD shall be new and previously unexposed and shall be playable on a DVD player and computer.

The video company shall be a professional photographer approved by the Owner. The video shall be in full color.

C. Description

Identify each DVD on its cover. List name of project, orientation of view, date and time of view, name and address of photographer.

D. Technique

Provide factual presentation. Provide correct exposure and focus, high resolution and sharpness. Video and audio capture of the

construction area from a vehicle moving at a slow rate of speed to permit Owner to view the DVD and determine pre-existing conditions. Provide audio explanation of pavement failure areas and of other items which require special notation.

Areas of local distress shall be video captured with the camera held without moving, using zoom control to record pavement cracking and alligatoring.

E. Submittals

Contractor shall deliver the DVD within three (3) calendar days after exposure with transmittal letter. The Owner will retain one of each DVD which will be the permanent record.

33. WATER APPURTENANCES ACROSS EXISTING UTILITIES

Contractor shall be aware that installation of appurtenances (air vac, blow-off, fire hydrant, etc.) may need field adjustment (two (2) 45° bends/fittings may be needed) to avoid existing utilities.

Contractor shall include these expenses in the appropriate bid item(s). No additional compensation will be allowed.

34. PROTECTION/ACCESS OF PRIVATE PROPERTIES

Protection of private properties adjacent to the Project site against flooding and other hazards caused by construction is of the utmost importance. All protection and safety measures shall be provided by the Contractor. All costs for this Work shall be included in the original bid and no additional compensation will be allowed. The Contractor shall protect in place or replace in kind all driveway approaches, landscaping, fencing, wall, mailboxes, landscaping, etc. disturbed by the Work. Contractor will be required to provide complete unobstructed access to each resident's driveway at the end of every workday. Contractor shall be responsible for providing emergency vehicle access to each resident's house and around the work site at ALL times. Contractor shall notify the local fire department, sheriff department and ambulance services and provide them with access routes through the construction area and a schedule indicating when access through any street will be obstructed by performance of the Work.

Contractor shall comply with local ordinances concerning noise abatement. Noise suppression shall be practiced at all times to minimize disturbance to persons living or working nearby, and to the general public. Measures for noise suppression shall include, but are not limited to, equipping all internal combustion engines with critical residential silencers, shielding noise-producing operations and equipment from nearest areas of occupancy, and conducting operations in the most effective manner to minimize noise generation consistent with prosecution of the Contract in a timely and economic manner.

Sound levels shall be kept below 65 dba, 10 minute LEQ, at all times, as measured at any neighboring residence. Should complaints be filed by surrounding property owners with the Code Enforcement Division of Jurupa Valley, the Contractor shall submit a noise monitoring report, which will include steps to mitigate the excessive noise levels.

All costs associated with this special condition, including all compliance, reporting, monitoring, and mitigation activities, shall be Contractor's sole responsibility and included in the bid, and no additional compensation will be allowed.

35. PROTECTION OF EXISTING IMPROVEMENTS, RESTORATION OF WORK SITE AND DISPOSAL OF SPOIL AND WASTE MATERIALS

Contractor shall complete operations so that existing improvements (including road and other paved surfaces adjacent to or in the vicinity of the work site) are not damaged. Contractor shall repair and restore, at Contractor’s expenses, all disturbed or damaged private or public improvements which results from Contractor’s operations (except that which is specifically a part of the contract work) to the satisfaction of the District, or the agency having jurisdiction over said improvements.

All work sites shall be restored to pre-job conditions and shall meet the requirements of District, Agencies who have jurisdiction and property owner(s). The Contractor shall repair or replace at his expense the damages as directed by District.

The District is obligated to keep visual impact of the work sites to a minimum; therefore, the Contractor is required to restore all areas altered by construction to pre-existing conditions, unless shown otherwise on the Drawings. Such areas shall include, but shall not be limited to areas used for travel, parking,

and storage of vehicles, equipment and materials or adjacent areas impacted by facilities construction.

The Contractor shall be responsible for the proper disposal of all waste materials resulting from project operations, including rubbish, packaging materials, discarded equipment parts, and damaged construction materials, in a manner and at locations suitable to the District and all health and other regulatory agencies.

36. GEOLOGICAL INFORMATION

It is the Contractor's responsibility to examine the site and perform any and all testing and evaluations necessary from which to draw conclusions regarding:

1. The ease or difficulty of excavation.
2. The presence, nature and extent of any rock.
3. The depth and quantity of groundwater.
4. The stability of excavations.
5. The suitability and quantity of excavated materials for pipe bedding and backfill or sources for importing bedding and backfill materials.
6. All excavation shall be unclassified and it shall be the Contractor's responsibility prior to submitting his proposal to familiarize himself with the conditions that he may encounter during construction of the Contract Work. All costs for excavation for all soils conditions (including any groundwater or required rock excavation) shall be included in the Contractor's applicable bid prices for constructing the various improvement facilities and no additional compensation shall be made therefore.
7. The following geotechnical investigation and report was prepared: A geotechnical investigation by LandMark Geo-Engineers and Geologists was performed to evaluate the surface and subsurface conditions on August 21, 2021 to provide recommendations for engineering design. Said report is attached to these specifications under Appendix A.

Where investigations of subsurface conditions have been made by the District in respect to foundation or other structural design, and that information is

shown in the plans, or included in the Specifications, said information represents only the statement by the District as to the character of material which has been actually encountered by it in its investigation, and is only included for the convenience of bidders. Investigations of subsurface conditions are made for the purpose of design, and the District assumes no responsibility whatever in respect to the sufficiency or accuracy of borings or of the log of test borings or other preliminary investigations, or of the interpretation thereof, and there is no guaranty either expressed or implied, that the conditions indicated are representative of those existing throughout the work, or any part of it, or that unlooked for developments may not occur. Making such information available to bidders is not to be construed in any way as waiver of the provisions of the first part of this article and bidders must satisfy themselves through their own investigations as to conditions to be encountered.

The geotechnical material contained in these bidding documents is intended only to assist Contractor in preparing his bid and to provide information regarding geotechnical construction requirements. The District does not guarantee the present or future validity of this material, and the material is in no way to be construed as a warranty of geologic conditions. Personal investigation by the Contractor is mandatory so that he can satisfy himself with regard to all geologic conditions affecting the Work hereunder. All costs for excavation for all soils and soils conditions shall be in the Contractor's bid prices for the applicable site Work and facilities, and no additional compensation shall be made therefore.

37. MAINTAINING WATER SERVICE

MINIMAL INTERRUPTION OF WATER SERVICES - While installing a new pipeline to replace an existing pipeline providing water service to users along the line, the service to a given user shall not be interrupted except for the required period to transfer that service from the old line to the new line. This period of time shall not exceed 4 hours. The Contractor shall make provisions necessary, at no additional cost to the District, to keep the old main in service until the new main has been completed and is ready for service transfer. Transfers shall not be made until the new line has been installed, disinfected, tested and placed in service.

38. ACCESS TO CONFINED SPACES

The Contractor's attention is directed to the General Industry Safety Orders of the State of California, Article 108, Permit-Required Confined Spaces, Section 5157. All Contractor entry into confined spaces must meet the requirements of Section 5157. (Refer to California Code of Regulations, Title 8, Confined Spaces, Sections 5156, 5157, and 5158).

The Contractor shall provide personnel and equipment, including standby personnel, observers, and authorized competent person to stand by while entrants are inside the space, temporary ventilation equipment, or self-contained breathing apparatus, to assist the personnel of the Owner's Representative in obtaining access to permit-required confined spaces.

39. PROTECTION OF SURVEY MONUMENTS

It shall be the Contractor’s responsibility to protect all existing survey monuments, if possible. If a survey monument is going to be disturbed, the monument shall be tied out prior to start of construction and reset after construction. Removal of such monuments or displacement thereof shall require their resetting per the existing type of monument. The cost of tie-out resetting such monuments shall be the financial responsibility of the Contractor. Contractor is advised that tie-out and resetting of monuments must be done by a registered civil engineer authorized to practice land surveying or licensed land surveyor at no additional cost to the contract. The following table summarizes survey monuments within the project area that requires protection, tie-out, resetting. This information is provided for assistance to the Contractor only and may not be all inclusive. The Contractor shall field verify all monuments utilizing a Professional Licensed Land Surveyor registered in the State of California. Work performed under the Section, including monument presentation, shall comply with Business and Profession Code Section 8771.

40. LINES AND GRADES

All work under this Contract shall be built in accordance with the lines and grades as shown on the plans. Distance and measurements, except elevations and structural dimensions, are given and made on horizontal planes. For pipeline work, the Surveyor will provide offset line and grade stakes at ground level and will furnish cut sheets therefore. The Contractor shall be responsible for transfer of such offset line and grade into the trench for construction of the

work and for accuracy of such transfer. Cost of such transfer shall be included in the unit prices bid for the work and no extra compensation will be made to the Contractor. The Contractor shall preserve bench marks, survey stakes, and points sets for lines, grades, or measurement of the work in their proper places until authorized by the Project Engineer to remove them.

41. PROJECT SIGNAGE

The Contractor shall construct and maintain two (2) project signs with the following included:

ANNUAL WATERLINE REPLACEMENT PROJECT – 44TH STREET AREA, JCSD Project No. C245118

JCSD Contact: (951) 685-7434

The signs shall be 4 feet x 8 feet and erected and maintained by the Contractor at or near the project site. Sign locations will be coordinated with JCSD. Signs shall be made of ¾" thick AC exterior plywood. Signs shall be white with black lettering and multi-colored logos. Paint and lettering is all weather grade and suitable for long term outdoor exposure throughout the duration of the project. Contractor shall provide for all maintenance, repair, restoration as required, provide for all graffiti abatement, all at no additional cost to the contract for the duration of the project. The signs shall be prepared in a professional manner.

The Contractor shall submit a prototype of the signs with the final sign/lettering dimensions, lettering layout, font size and type to JCSD for approval prior to construction. The signs shall include, but not be limited to the following:

- Project Title
- Total Project Cost
- Project Dates
- Estimated Construction Duration
- Community Involvement Contact
- JCSD Color Logo
- Names of Board of Directors on the upper left corner

A sample of project signage is attached in Appendix D for reference.

42. SECURING OF TRENCHES

All trenches with pavement cut/removal must be backfilled and temporary pavement (2” minimum) placed (flush) at the end of each workday. City of Jurupa Valley Encroachment Permit requirements shall govern if more stringent. For site with non-paved surfaces, provide gravel surfaces. The Contractor will be required to provide complete unobstructed access to each resident’s driveway at all times.

During the construction and installation of proposed pipelines and facilities close to existing utilities, the Contractor shall provide all necessary means to protect in place and support all existing utilities, existing backfill material, existing pavement, etc. If surrounding backfill and paving fails during construction, Contractor shall provide for all restoration of backfill, compaction, sub-base, base pavement, grind and cap per City of Jurupa Valley Road Improvement Standards and Specifications and support and protect utilities at no additional cost to contract.

43. DEMOLITION, SALVAGE AND ABANDONMENT

Water pipeline facilities shall be abandoned, demolished, and salvaged as part of this project. Procedures for abandoning and demolishing of said facilities are outlined in the Green Book and on the plans and specifications as applicable. All pipes and facilities to be abandoned in place shall be dewatered and bulkhead plugged and sealed with water tight cement.

The Contractor shall properly dispose of buried pipelines proposed to be removed, backfill and compact per plans, specifications and Green Book. Any abandoned pipelines planned to be left in place, Contractor shall dewater pipeline and abandoned in place and properly bulkhead all ends. Contractor shall cut/remove all abandoned water facilities, appurtenances, risers, valve cans, etc. backfill, compact and restore surface to match surroundings.

The appurtenances (valves, air valves, blow-offs, hydrants, etc.) shall be removed and salvaged to the District. Contractor shall transport and deliver to the District’s main office maintenance yard located at 11201 Harrel Street, Jurupa Valley, CA 91752.

44. RESTORATION OF NON-PAVED AREAS

For all disturbed non-paved areas, such as dirt shoulders, unimproved areas, trails, lawns, turf, etc. due to Contractor’s activities. Contractor shall

restore and re-compact these areas per the applicable sections of these Plans and Specifications. Contractor shall coordinate with and restore said areas to the satisfaction of the City of Jurupa Valley's inspector, property owner, agencies/ entities having jurisdiction of said properties. Contractor shall provide for all equipment, effort, labor, materials all at no additional cost to the contract.

45. SCHEDULE OF VALUES

A. GENERAL

Contractor shall provide a Schedule of Values (cost breakdown of ALL lump sum bid items) for the contract work. The Schedule of Values shall be subject to Owner approval.

All lump sum items ("LS" as listed on the Biding Sheet) shall be paid for at the price indicated in the Bid; with the exception that if no work is performed on a particular bid item or the item is deleted by the Owner, then that particular item will become a "no pay" item. In the event a portion of the lump sum bid item is provided, that completed portion will be paid in accordance with the approved cost item breakdown (Schedule of Values).

The lump sum bid price shall include furnishing all labor, materials, equipment, methods, etc. necessary to complete the work for the specified bid item as described on the Bidding Sheet, the Plans and Specifications.

B. SCHEDULE OF VALUES

Within ten (10) days following the date the Owner issues the written "Notice to Proceed", Contractor shall submit a detailed price breakdown ("Schedule of Values") of all lump sum bid items indicated on the Bidding Sheet. The price breakdown shall include quantities, unit prices and any other information required insufficient detail to enable it to be used by Owner in reviewing and approving Contractor's progress pay estimates. Such price breakdown shall be in accordance with the bid items and sub-items indicated on the Bidding Sheet and the major components of the Work as contained in the Contract Documents. Include all subcontractor/supplier agreements showing the dollar value of these agreements to justify the schedule of values, and showing separate line items for the

material costs and installation costs.) Provide any separate material cost breakdowns that may be required pursuant to the Special Requirements. The price breakdown shall be subject to Owner approval.

46. MISCELLANEOUS SPECIAL CONDITIONS

A. PROJECT MEETING

(1) ATTENDEES. Unless otherwise specified or required by the Owner, the meetings shall be attended by the Owner, the Engineer, the Inspector, and the Contractor and his Superintendent. Subcontracts may attend when involved in the matters to be discussed or resolved but only when requested by the Owner, Engineer, or Contractor.

(2) MEETING RECORDS. The Owner will record minutes of each meeting and will furnish copies to the Contractor within five (5) working days thereafter. If the Contractor does not submit written objection to the contents of such minutes within seven (7) days after presentation to him, it shall be understood and agreed that the Contractor accepts the minutes as a true and complete record of meeting.

(3) MEETING SCHEDULE. The dates, times and locations for the progress meeting shall be agreed upon and recorded at the preconstruction conference. Then after, changes to the schedule shall be by agreement between the Owner and Contractor, with appropriate written notice to all parties involved.

(4) PRECONSTRUCTION CONFERENCE. Prior to issuance of the Notice to Proceed, a preconstruction conference shall be held at the location, date, and time designated by the Owner. In addition to the attendees named herein, the meeting shall be attended by the representatives of regulatory agencies having jurisdiction of the project, Owners and Operators of affected utilities, if required, and such other persons the Owner may designate.

(5) EXECUTION AND SUBMITTAL OF DOCUMENTS. At the preconstruction conference, unless otherwise specified or agreed by the Owner and Contractor, the Contract Agreement shall be executed by the parties hereto and the Contractor shall present to the Owner the Bonds, certificates of insurance, progress schedule, schedule of values, written safety program, and all other preconstruction documents required of him by the Contract Documents.

(6) AGENDA. In general, the matters to be discussed or resolved and the instructions and information to be furnished to or given by the Contractor at the preconstruction conference include:

a) Progress meeting schedule.

b) Progress schedule and schedule of values submitted by Contractor.

c) Communication procedures between the parties.

d) The names and titles of all persons authorized by the Contractor to represent and execute documents for him with samples of all authorized signatures.

e) The names, addresses, and telephone numbers of all those authorized by the Contractor to act for him in emergencies.

f) Construction permit requirements, procedures, and posing.

g) Public notice of starting Work.

h) Procedures concerning the installation of Work on public or private property not owned by the Owner.

i) Interfaces with the Contractors or with utility owners.

j) Access and rights-of-way furnished by the Owner.

k) Forms and procedures for Contractor’s submittals.

l) Change Order forms and procedures.

m) Payment application forms and procedures and the revised progress schedule and reports to accompany the applications.

n) Contractor's safety and training program, and designation of the Contractor's Safety officer and his qualifications.

o) First-aid and medical facilities to be furnished by Contractor.

p) Contractor's provisions for barricades, traffic control, utilities, sanitary facilities, and other temporary facilities and controls.

q) Project sign for Owner if required by the Specifications.

r) Engineer, Inspector and his duties.

s) Construction surveyor and initiation of surveying services.

t) Testing laboratory or agency, and testing procedures.

u) Methods of construction proposed by the Contractor.

v) Equipment proposed for use during construction by the Contractor.

w) Procedures for payroll and labor cost reporting by the Contractor.

x) Procedures to ensure nondiscrimination in employment on and for the Work.

y) Issuance of the Notice to Proceed.

z) Matters concerning construction within the city/county (traffic, police, fire, mail and waste collection services).

(7) PROGRESS MEETINGS. The meetings shall be held on a weekly basis in accordance with the agreed schedule. All matters bearing on the progress and performance of the Work since the preceding progress meeting shall be discussed and resolved, including without limitation any previously unresolved matters, deficiencies in the Work or the methods being employed for Work, and problems, difficulties, or delays which may be encountered.

(8) SPECIAL MEETINGS. Upon appropriate notice to the other parties, special meetings may be called by the Owner, Engineer, or Contractor. Special meetings will be held where and when designated by the Owner for the following

purposes unless the matters are resolved at the preconstruction conference or at subsequent progress meetings.

(9) REGULATORY AGENCIES. When requested, the Contractor shall attend meetings held or required by the governmental regulatory agencies having jurisdiction of the Project or by various California State agencies or Owners of affected utilities.

B. REIMBURSEMENT TO OWNER FOR COMPACTION RE-TESTS

The Owner will arrange for a soils engineering laboratory to perform the trench compaction testing for the water pipelines. The Owner will pay for required compaction tests, with the exception that the Owner shall be reimbursed by the Contractor for any compaction tests that fail to meet the minimum relative compaction requirements. The Bidder is hereby notified that the amount of the reimbursement to the Owner shall be Seventy-Five Dollars ($75.00) for each required retest for insufficient compaction, said amount including costs for testing, overhead and administration.

C. PARTIAL PAYMENT REQUESTS

Contractor shall submit all invoicing and requests for payment for completed portions of the work directly to the District for approval on the District's approved form. Said invoicing shall be submitted at intervals no less than 30 calendar days and shall include an updated project schedule and updated as-built drawings for processing.

D. CONTRACTOR'S FIELD SUPERINTENDENT

The Contractor shall be required to have a field superintendent, from his organization, on the jobsite during construction activities, to manage the affairs of the Contractor and to receive directions or instruction from the District or Engineer. Contractor shall provide the District with a 24 hour emergency phone number for field superintendent prior to beginning of construction.

E. COOPERATION WITH OTHER CONTRACTORS

The Contractor shall cooperate with other Contractors that may be working within the project area, as directed by the District.

F. REQUIRED CERTIFIED PAYROLL SUBMITTALS

The District shall require the Contractor to submit Certified Payroll records per Section entitled “Prevailing Wage” of the General Provisions. The Contractor shall prepare said certified payroll records on a form acceptable to and approved by the Owner; and the certified payroll records shall be submitted with each partial payment request.

G. AS-BUILT DRAWINGS

The Contractor shall be responsible for maintaining one up-to-date set of as-built drawings, on the job site, available for review by the Owner representative. These drawings shall be clean, neat, and legible and show deviations from the original plan and profile design. This set of as-built drawings shall be submitted for review on the monthly basis and given to Owner upon project completion. The Notice of Completion will not be filed until Owner receives the as-built drawings.

Failure to provide acceptable up-to-date as-built drawings as required herein is considered a material breach of the Contract and shall result in withholding of progress payments and/or final payment at the sole discretion of Owner. Failure to submit the final as-built drawings shall of and by itself be grounds for assessment of liquidated damages not withstanding any other contractual action which may be taken.

Full compensation for conforming to the above requirement will be considered as included in the prices bid for various contract items of work and no additional compensation will be allowed therefore.

47. PAVEMENT REPAIR, REPLACEMENT, AND RECAPPING

Pavement replacement and trench repair shall comply with the City of Jurupa Valley encroachment permit requirements. City of Jurupa Valley Encroachment Permit requirements shall govern if more stringent. Unless otherwise noted within the permit materials/requirements shall consist of Class II aggregate base, base pavement PG-64-10B (3/4" max), cap pavement PG-64-10 C2 (1/2" max), grind and overlay. Contractor shall adjust the unit prices of associated bid items based upon the equipment used. No additional compensation will be granted. Refer to City's Std. No. 703 Series herein these specifications for pavement and trench repair.

48. COMPLIANCE WITH STORM WATER REGULATIONS (NPDES)

Contractor, as JCSD's authorized representative, shall comply with the regulatory requirements of the State Water Resources Control Board's (SWRCB) Order No. 2009-0009 DWQ, National Pollutant Discharge Elimination System (NPDES) General Permit No. CAS000002 for Discharges of Storm Water Runoff Associated with Construction Activity, copies of which are available on SWRCB website at: http://www.swrcb.ca.gov/stormwtr/construction.html.

The Contractor, as JCSD's authorized representative shall have a Qualified SWPPP Developer determine the Risk Level/LUP Type and prepare a Contractor and QSD Certified Storm Water pollution and Prevention Plan Storm Water Pollution and Prevention Plan in accordance with Order No. 2009-0009 DWQ, NPDES General Permit No. CAS000002. The Contractor shall submit both paper and electronic copies of the SWPPP to the JCSD within two weeks of the contract start date. The JCSD, upon approval of the SWPPP, shall electronically file Permit Registration Documents (PRDs) using the Stormwater Multi Application Reporting & Tracking System (SMARTS) and shall mail the Notice of Intent (NOI) and appropriate annual fee to the State Water Resources Control Board. SWRCB will process the PRDs and a Waste Discharge Identification Number (WDID) will be assigned to the project. JCSD will forward the completed NOI including the WDID to the Contractor upon receipt.

The Contractor, as JCSD's authorized representative, shall always maintain a copy of the SWPPP on the job site for review and inspection by the Regional Water Quality Control Board. Documents that shall be available on site include

but are not limited to the SWPPP that is monitored as needed for current conditions; construction site monitoring plan (CSMP); required daily/weekly and extended inspection checklists, pre, during, and post rain event inspection checklists; pre, during, and post-rain event reports; quarterly non-stormwater monitoring reports; and Rain Event Action Plans (Risk Level 2 and 3 projects only).

The Contractor, as JCSD's authorized representative, shall have a Qualified SWPPP Practitioner (QSP) available at all times to implement the SWPPP in compliance with Order No. 2009-0009 DWQ including but not limited to training/certification requirements for key personnel implementing the SWPPP/BMPs etc.; performance of daily/weekly inspection reports; performance of all required monitoring and reporting including monitoring data/records and visual monitoring records; and maintaining records of corrective actions taken and not taken. Submittal of daily/weekly inspections and monthly reports to JCSD in compliance with the permit is required by the end of each month. The Annual Report, in accordance with Section XVI of Order No. 2009-0009 DWQ, NPDES General Permit No. CAS00002, must be submitted to JCSD by July 31 of each year. The Contractor's QSP must be registered in SMARTS so JCSD may link the QSP to the project in SMARTS as a Data Submitter.

The JCSD, at its discretion, may withhold payment and/or return pay requests if the contractor fails to submit monthly reports by the last working day of the month, properly maintain records, or otherwise comply with the permit requirements.

The contractor shall include all costs for preparation of the SWPPP, record keeping, implementation, and reporting requirements of the permit. No additional compensation will be allowed.

49. COMPENSATION FOR UNKNOWN UTILITY

Compensation for the unit bid price for unknown utility shall include compensation for loss of production, idle time, backfill, slurry backfill (up to 5 cubic yard) if needed, installing under, support, overhead, or any other cost associated with the unknown utility if multiple conduits are crossing within 5-feet

of each other they (may be in-cased in concrete) shall be considered a single crossing.

50. HARD ROCK REMOVAL

Excavation encountered during pipeline trenching for this project that cannot be excavated by use of a CAT 345, Komatsu 400 or equivalent while using heavy duty buckets or buckets more suitable for difficult trenching conditions, and requires blasting and/or special breaker equipment (as determined by the Engineer and approved by Owner) will be paid for under the rock excavation bid item provided on the Bidding Sheet. Normal trench excavation is defined and shall include those materials that are capable of being removed by the aforementioned excavating equipment in good operating condition; and being operated diligently and efficiently by an experienced operator. In addition to the above described criteria, material will be classified within trench excavation which, when tested, indicates seismic velocities below 4500 feet per second. Any tests requested by Contractor which fail to show velocities in excess of 4500 feet per second shall be paid for by the Contractor, at no additional cost to the District. It is noted that the correlation between rippability of in-trench soils and the capability of heavy excavators to rip such materials is not exact. Also, Contractor shall understand that the criteria and definition of rock excavation (as stated herein) must be met for payment under this provision under the Contract; all other excavation shall be considered normal trenching with payment to be made under the Contractor's unit bid price for pipeline installation as indicated on the Bidding Sheet. Accordingly, it shall be the responsibility of the Bidder to perform any additional, independent evaluation of the rippability of the existing on-site materials prior to submitting a bid proposal.

Contractor shall notify Owner immediately, both verbally and in writing, if conditions are such that rock excavation is expected to be necessary. All rock excavation shall be performed under direct inspection by District's Project Inspector. No payment shall be made for rock removed prior to inspection and measurement by the District's Project Inspector. The District, at its option, may consider alternate measures including the adjustment of line and grade in lieu of rock excavation.

Payment for rock excavation will be made on a cubic yard (CY) basis in accordance with the unit bid price for "Hard Rock Excavation, Removal and Disposal". Unit bid price shall include cost of removal and disposal of the

unsuitable material. Should the rock removal create a shortage of backfill material, the Contractor shall provide additional backfill material in accordance with the import backfill provisions of these Special Requirements. Rock excavation volume (CY) for payment purposes will be calculated using the "Average End Area" method (Refer to Attachment B for example calculation methodology). Maximum trench width for payment purposes shall be in accordance with the Excavation/Backfill Detail; with all measurements (stations, lengths, depths, etc.) as confirmed by Inspector.

The Bid Sheet shows an estimated quantity only; and there shall be no increase/decrease allowed on the unit price based upon any quantity variance.

The Contractor shall hire, pay for, and make arrangements for the seismic study and investigation to determine the seismic velocities and related properties of the materials pertaining to the Hard Rock Removal section. Contractor shall incorporate all efforts into their construction schedule including the timing for the required investigation, reports, efforts, etc. All reports, results, studies, supporting data shall be provided to the District in coordination with progress payments. All cost associated with the seismic study and investigation efforts shall be the responsibility of the Contractor at no additional cost to the District.

51. EQUIPMENT AND MATERIALS STORAGE

It is the Contractor's responsibility to legally store equipment and materials associated with the performance of the work. If the Contractor has arranged for temporary storage on private property outside of the public right-of-way, the Contractor shall provide to the District a copy of the written agreement between the landowner and the Contractor.

If Contractor is required to leave equipment on public right-of-way in close proximity to the work area, Contractor shall request and obtain approval from City of Jurupa Valley. Contractor shall provide all requirements and items requested by City such as traffic control plans and Contractor shall prepare and submit these traffic control plans as requested by the City. Contractor shall pay all fees and prepare and submit all applications required. Once approved, Contractor shall provide copy of approval letter(s) to District for files and implement and provide and setup all devices, security, signs, message boards, etc. all at no additional cost to the contract and no additional time awarded.

52. SCE POLE PROTECTION

For work associated with protecting, supporting, repairing existing Southern California Edison (SCE) facilities, Contractor shall utilize an Approved SCE Electrical Contractor.

Regarding all excavations near existing utility poles, Contractor shall perform all excavation, install pipe, backfill and compact in the same day. Contractor shall bring grade at existing utility poles back to existing grades.

53. CONTRACTOR SURVEY OF EXISTING GRADES AND IMPROVEMENTS PRIOR TO CONSTRUCTION

For areas that are anticipated by the Contractor to be removed and restored, it shall be the Contractor's responsibility to identify these areas and perform survey to obtain field survey of existing improvements such as paved roads, edge of pavements, raised medians, curbs and gutters, grades at poles, etc. in order to re-establish pre-construction conditions and grades prior to start of construction. The Contractor shall provide data to District. The surveyor shall be a licensed land surveyor licensed in the State of California, and Contractor shall provide all cost, labor and equipment, etc. in respective bid item. No additional compensation shall be awarded.

54. PUBLIC NOTIFICATION AND COORDINATION

The Contractor shall be responsible to notify and coordinate with the public and business, residents, church, offices, chapel, and schools in the vicinity areas such as providing door knockers, fliers, etc. The Contractor shall also accommodate his construction schedule to provide access. Contractor shall include all costs associated in his bid proposal. Neither additional expenses compensation nor time extension will be allowed.

55. GAS COMPANY REQUIREMENTS

When performing work and construction activities within Gas Company (Distribution and Transmission) crossings and parallels, the Contractor shall follow the Gas Company's work requirements:

1. Contractor shall coordinate with the Gas Company (Distribution and Transmission) and schedule the appropriate Gas Company representative to be on-site when working in areas of the gas lines and when gas lines require protecting and supporting in place.

2. All work, labor, equipment, provisions, materials to accommodate these Gas Company (Distribution and Transmission) shall be included in the contract all at no additional cost and no additional time shall be awarded.

56. CONTROL DENSIY FILL (CDF)

The Contractor will be required to use CDF as backfill in areas under and around existing utilities as indicated on the drawings and when crossing under existing utilities depicted on the drawings by the sewer line. All costs associated with furnishing and placing CDF shall be included in the applicable bid item(s) for furnishing and installing the gravity mains and force mains. Mix design shall be specified in the Standard Specifications Section 201 - Concrete Mortar and Related Items; Table 201-1.1.2A for trench backfill slurry.

57. MISCELLANEOUS SPECIAL CONDITIONS

A. PROJECT MEETING

1. ATTENDEES. Unless otherwise specified or required by the Owner, the meetings shall be attended by the Owner, the Engineer, the Inspector, and the Contractor and Superintendent. Subcontractors may attend when involved in the matters to be discussed or resolved but only when requested by the Owner, Engineer, or Contractor.

2. MEETING RECORDS. The Owner or the Engineer will record minutes of each meeting and will furnish copies to the Contractor within five (5) working days thereafter. If the Contractor does not submit written objection to the contents of such minutes within seven (7) days after presentation to them, it shall be understood and agreed that the Contractor accepts the minutes as a true and complete record of the meeting.

3. MEETING SCHEDULE. The dates, times and locations for the progress meetings shall be agreed upon and recorded at the preconstruction conference. Then after, changes to the schedule shall be by agreement between the Owner and Contractor, with appropriate written notice to all parties involved.

4. PRECONSTRUCTION CONFERENCE. Prior to issuance of the Notice to Proceed, a preconstruction conference shall be held at the location, date, and time designated by the Owner. In addition to the attendees named herein, the meeting shall be attended by the representatives of regulatory agencies having jurisdiction of the Project, Owners and Operators of affected utilities, if required, and

such other persons the Owner may designate. The Contractor performing the electrical work for the Owner will be present, if requested by the Contractor of this contract.

5. EXECUTION AND SUBMITTAL OF DOCUMENTS. At the preconstruction conference, unless otherwise specified or agreed by the Owner and Contractor, the Contract Agreement shall be executed by the parties hereto and the Contractor shall present to the Owner the Bonds, certificates of insurance, progress schedule, schedule of values, written safety program, and all other preconstruction documents required of them by the Contract Documents.

6. AGENDA. In general, the matters to be discussed or resolved and the instructions and information to be furnished to or given by the Contractor at the preconstruction conference include:

(1) Progress meeting schedule.

(2) Progress schedule and schedule of values submitted by Contractor.

(3) Communication procedures between the parties.

(4) The names and titles of all persons authorized by the Contractor to represent and execute documents for them with samples of all authorized signatures.

(5) The names, addresses, and telephone numbers of all those authorized by the Contractor to act for them in emergencies.

(6) Construction permit requirements, procedures, and posting.

(7) Public notice of starting Work.

(8) Procedures concerning the installation of Work on public or private property not owned by the Owner.

(9) Interfaces with other Contractors or with utility owners.

(10) Access and rights-of-way furnished by the Owner.

(11) Forms and procedures for Contractor's submittals.

(12) Change Order forms and procedures.

(13) Payment application forms and procedures and the

revised progress schedule and reports to accompany the applications.

(14) Contractor's safety and training program, and designation of the Contractor's Safety Officer and qualifications.

(15) First aid and medical facilities to be furnished by Contractor.

(16) Contractor's provisions for barricades, traffic control, utilities, sanitary facilities, and other temporary facilities and controls.

(17) Project sign for Owner if required by the Specifications.

(18) Engineer, Inspector(s) and their duties.

(19) Construction surveyor and initiation of surveying services.

(20) Testing laboratory or agency, and testing procedures.

(21) Methods of construction proposed by the Contractor.

(22) Equipment proposed for use during construction by the Contractor.

(23) Procedures for payroll and labor cost reporting by the Contractor.

(24) Procedures to ensure nondiscrimination in employment on and for the Work.

(25) Issuance of the Notice to Proceed.

(26) Matters concerning construction within the city/county (traffic, police, fire, mail and waste collection services).

7. PROGRESS MEETINGS. The meetings shall be held on a bi-monthly basis in accordance with the agreed schedule. All matters bearing on the progress and performance of the Work since the preceding progress meeting shall be discussed and resolved, including without limitation any previously unresolved matters, deficiencies in the Work or the methods being employed for the Work, and problems, difficulties, or delays which may be encountered.

8. SPECIAL MEETINGS. Upon appropriate notice to the other parties, special meetings may be called by the Owner, Engineer, or Contractor. Special meetings will be held where and when designated by the Owner for the following purposes unless the matters are resolved at the preconstruction conference or at subsequent progress meetings.

9. REGULATORY AGENCIES. When requested, the Contractor shall attend meetings held or required by the governmental regulatory agencies having jurisdiction of the Project or by various California State agencies or Owners of affected utilities.

B. REIMBURSEMENT TO OWNER FOR COMPACTION RE-TESTS

The Owner will arrange for a soils engineering laboratory to perform the trench compaction testing for the water pipeline. The Owner will pay for required compaction tests, with the exception that the Owner shall be reimbursed by the Contractor for any compaction tests that fail to meet the minimum relative compaction requirements. The Bidder is hereby notified that the amount of the reimbursement to the Owner shall be Seventy-Five Dollars ($75.00) for each required retest for insufficient compaction, said amount includes costs for testing, overhead and administration.

C. PARTIAL PAYMENT REQUESTS

Contractor shall submit all invoicing and requests for payment for completed portions of the work directly to the Engineer for approval on a form approved by the District. Said invoicing shall be submitted at intervals no less than thirty (30) calendar days.

D. CONTRACTOR'S FIELD SUPERINTENDENT

The Contractor shall be required to have a field superintendent, from their organization at the jobsite during construction activities to manage the affairs of the Contractor and to receive directions or instruction from the District. The Contractor shall provide the District with a 24-hour emergency phone number for the field superintendent prior to beginning of construction.

E. COOPERATION WITH OTHER CONTRACTORS

The Contractor shall cooperate with other contractors that are working within the project area, as directed by the District.

F. REQUIRED CERTIFIED PAYROLL SUBMITTALS

The Owner shall require the Contractor to submit Certified Payroll records per the Section entitled “Prevailing Wage” of the General Provisions. The Contractor shall prepare said certified payroll records on a form acceptable to and approved by the District; and the certified payroll records shall be submitted with each partial payment request.

G. AS-BUILT DRAWINGS

The Contractor is responsible for maintaining one up-to-date set of as-built drawings, on the job site, available for review by the District representative. These drawings are to be clean, neat, legible and show deviations from the original plan and profile design, and details. The set of as-built drawings shall be submitted on a monthly basis for review. The final as-built drawings are to be given to the District upon project completion. The Notice of Completion will not be filed until the District receives the as-built drawings.

Failure to provide acceptable up to date as-built drawings as required herein is considered a material breach of the Contract and shall result in withholding of progress payments and/or final payment at the sole discretion of the District. Failure to submit the final as-built drawings shall of and by itself, be grounds for assessment of liquidated damages not withstanding any other contractual action which may be taken.

Full compensation for conforming to the above requirement will be considered as included in the prices bid for various contract items of work and no additional compensation will be allowed, therefore.

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GENERAL SPECIFICATIONS

1. REFERENCE SPECIFICATIONS

The following published reference specification shall hereby become part of these specifications.

A. State of California, Department of Transportation, "Standard Specifications", (Latest Edition**)**.

B. The Greenbook "Standard Specifications for Public Works Construction", Latest Edition, published by Building News, Inc., 990 Park Center Drive, Suite E, Vista CA 92081. Part I of the "Standard Specifications for Public Works Construction" shall apply to work accomplished under the contract except as herein modified.

2. CONTRACTOR'S SCHEDULE OF WORK

Within seven (7) days from the time the Contract is executed by all parties and at such other times as may be requested by the District, the Contractor shall submit to the District a detailed construction schedule which shall show the order in which the Contractor proposes to carry on the work, the dates at which the Contractor will start the several parts of the work, and the estimated dates of completion of the several parts. The District reserves the right to approve or alter the Schedule proposed by the Contractor, prior to the start of work.

The District may establish priorities for completion of certain parts of the work which may be necessary to provide certain services or which District may deem advisable in the interest of public safety and convenience.

The construction schedule and supplementary construction schedules submitted shall be consistent in all respects with the time requirements of the contract.

The receipt or written approval of any schedules by the Owner's Representative or the 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 Work. 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 Work within the specified Contract time 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 Owner's Representative.

a. 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 Work within the time specified for completion. Schedule duration shall match the Contract time. Schedules indicating early completion will be rejected.

b. Schedule Updates. Contractor shall continuously update its construction schedule. Contractor shall submit an updated and accurate construction schedule to the Owner's Representative whenever requested to do so by Owner's Representative and with each progress payment request. The Owner's Representative may withhold progress payments or other amounts due under the Contract Documents if Contractor fails to submit an updated and accurate construction schedule.

3. INSPECTION

All work and materials furnished under these specifications shall be subject to rigid District inspection and acceptance.

The Contractor shall notify the District at least two working days in advance of any work to be done, in order that inspection, including that of on-site materials, may be provided with a minimum of inconvenience to the District or delay to the Contractor. The Contractor shall perform construction only in the presence of a District inspector unless written permission to work during the absence of an inspector has been granted by the District or inspector. Any work done in the absence of an inspector without permission shall be subject to rejection.

The District shall at all times have access to the work during its construction and shall be furnished with every reasonable facility for ascertaining that materials and workmanship are in accordance with the requirements of these Specifications.

When required, the Contractor shall notify the District a sufficient time in advance of manufacture or production of materials to be supplied, in order that the District may arrange for shop or plant inspection and testing. The District shall have access to all parts of the shop or plant where material subject to inspection is being manufactured.

All materials shipped prior to having satisfactorily passed such testing and inspection by the District shall not be used unless approved by the District.

The Contractor shall also furnish the District duplicate, certified copies of all factory and mill test reports when required by the District.

Work or materials failing to conform to these Specifications may be rejected at any time.

The District has made the necessary arrangements for inspection (general, geotechnical and specialties) of Contractor's work during the District's field services' regular (i.e., 7:00 a.m. to 3:30 p.m., Monday through Friday) 40-hour work week. If the Contractor works more than an 8-hour day, a 40-hour week, and/or District observed holidays, the financial responsibility for ALL added inspection shall be the responsibility of the Contractor. The prevailing hourly rates for inspection are on file with the District. Such prevailing rates will be applied at 1-1/2 times the regular rates for periods over 8 hours a day and/or 40 hours per week and/or District observed holidays and 2 times the regular rates for periods over 12 hours in one (1) day.

4. DEFECTIVE WORKMANSHIP AND MATERIAL

The Contractor shall promptly remove from the premises all work and materials condemned by the District as failing to conform to the contract, whether incorporated or not, and the Contractor shall promptly replace and re-execute the Contractor’s own work in accordance with the contract and without expense to the District and shall bear the expense of making good all work of other contractors destroyed or damaged by such removal or replacement and pay for reinspection costs.

If the Contractor does not remove such condemned work or materials within a reasonable time after notice, the District may remove them and store the materials at the expense of the Contractor. If the Contractor does not pay the expenses of such removal within 10 days' time after such removal, the District may, upon thirty days' written notice, sell such materials at auction or at private sale and shall account for the net proceeds thereof after deducting all the costs and expenses that should have been borne by the Contractor.

5. SANITATION

All work areas shall be maintained in a neat, clean, sanitary condition. Fixed and portable toilets, which are made inaccessible to flies, shall be provided wherever needed for use of employees, and their use shall be strictly enforced. 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. All waste and refuse from sanitary facilities provided by the Contractor or from any source related to Contractor's operations shall be taken care

of in a sanitary manner, satisfactory to the District, and in accordance with the laws and regulations pertaining thereto. Contractor shall rigorously prohibit and prevent committing of nuisance within the work site area or upon the District's right-of-way or adjacent to private property. Contractor shall furnish all facilities and means for proper sanitation of the work, and shall protect and save harmless the District, its officers and employees from any liability resulting from improper or insufficient sanitation.

6. FIRST AID AND PROTECTIVE FACILITIES

First aid facilities and supplies shall be kept on the jobsite. Instructions in first aid shall be given, and Contractor shall provide emergency first aid treatment and supplies for the Contractor's employees sufficient to comply with all legal requirements.

7. CONTRACTOR TO PROVIDE FACILITIES FOR EMPLOYEES

Contractor shall, at their own expense, provide all labor, materials, equipment, and facilities which may be required to carry out effectively the provisions of these specifications. Contractor shall receive no additional payment therefore, and all compensation to be received for such work shall be included in the prices bid on the Bidding Sheet.

8. POWER

The Contractor shall provide, at their own expense, all necessary power required for their operations under the contract. The Contractor shall provide and maintain in good order such modern power equipment and installation as shall be adequate, in the opinion of the District, to perform in a safe and satisfactory manner the work required by the Contract.

9. CLEANUP

THROUGHOUT ALL PHASES OF CONSTRUCTION, INCLUDING SUSPENSION OF WORK, AND UNTIL FINAL ACCEPTANCE OF THE PROJECT, the Contractor shall keep the premises occupied by the Contractor and the project site in a neat and clean condition, and free from unsightly accumulation of rubbish, excess construction materials, and excess excavated materials. The Contractor shall also abate dust nuisance by cleaning, sweeping, and sprinkling with water, or other means as necessary. The use of water resulting in mud on public streets will not be permitted as a substitute for sweeping or other cleaning methods.

Materials and equipment shall be removed from the site as soon as they are no longer necessary.

Care shall be taken to prevent spillage on haul routes. Any such spillage shall be removed immediately, and the area cleaned.

Excess excavated material from the pipe trench shall be removed from the site immediately. Sufficient material may remain for use as backfill if approved to be suitable backfill by the Engineer. Forms and form lumber shall be removed from the site as soon as practicable after stripping.

FAILURE OF THE CONTRACTOR TO COMPLY WITH THE DISTRICT'S CLEANUP ORDERS MAY RESULT IN AN ORDER TO SUSPEND WORK UNTIL THE CONDITION IS CORRECTED. No additional compensation or extension of time will be allowed as a result of such suspension.

The Contractor shall not discharge smoke, dust, or any other air contaminants into the atmosphere in such quantity as will violate the regulations of any legally constituted authority.

Upon completion of work and before the final pay estimate is submitted, the Contractor shall, at their own expense and cost, satisfactorily dispose of or remove from the vicinity of the work all plants, buildings, rubbish, unused materials, concrete forms, and other equipment and materials belonging to them or used under their direction during the construction, and in the event of their failure to do so, the same may be removed and disposed of by the District at the Contractor's expense.

10. UTILITIES AND EASEMENTS

The plan portion of each sheet indicates the general location of underground utilities as shown on available records. No attempt has been made to show service connections other than those services improved as part of the contract work. The plans also indicate the location of public right-of-way lines and easements that will be acquired by the District. It shall be the Contractor's responsibility to conduct all their operations within the rights-of-way and easements as shown on these plans.

11. RELATIONSHIP WITH OTHER GOVERNMENTAL AGENCIES

Where the pipeline and structures are constructed within the rights of way under the jurisdiction of other governmental agencies, Contractor shall comply with all requirements of said agencies. Where the same subject matter is covered by the specifications of two or more agencies, the specifications more restrictive on the Contractor shall govern in all cases.

12. EXPOSURE OF UTILITIES IN ADVANCE OF WORK

It shall be the Contractor's responsibility to determine the exact location and depth of all utilities and service connections. The Contractor shall also determine the type, material, and condition of any utility which may be affected by or affect the work. The Contractor shall have all utility companies field locate and mark all underground lines before the start of construction. Utilities to be potholed shall include all those identified in the plans as well as those field marked by utilities.

In order to provide sufficient lead time to resolve unforeseen conflicts, order materials and take other appropriate measures to ensure that there is no delay in work, the CONTRACTOR SHALL POTHOLE ALL UTILITIES THAT MUST BE CROSSED OR CLOSELY PARALLELED PRIOR TO ANY CONSTRUCTION. CONTRACTOR SHALL THEN IMMEDIATELY PROVIDE THE LOCATION AND DEPTH OF THE "POTHOLED" UTILITIES TO THE ENGINEER. The Contractor shall expose all service connections before excavation in the area. All costs incurred in exposing utilities shall be borne by the Contractor.

THE DISTRICT RESERVES THE RIGHT TO MAKE MINOR ADJUSTMENTS IN PIPELINE ALIGNMENT AND GRADE, ALL AT NO ADDITIONAL COST TO THE DISTRICT.

Failure of the Contractor to comply with these provisions will result in an order to suspend work until these provisions are complied with, and no additional compensation or extension of time will be allowed as a result of such suspension. Payment per bid item or spread.

13. ADVANCE NOTIFICATION OF AGENCIES

It shall be the Contractor's responsibility to determine and notify those agencies requiring advance notification for inspection or other purposes before beginning construction in any area of concern to said Agency. A minimum of two working days advance notice shall be given to the various agencies before beginning construction in the area unless specific advance times and requirements are stated in these detailed specifications or required by the Agency.

14. CROSSING, PROTECTION, AND/OR RELOCATION OF UTILITIES

A. General

Utilities for the purpose of these specifications shall be considered as including, but not limited to, and irrespective of ownership; Pipelines (including irrigation mains), conduits, transmission lines, and appurtenances of "Public Utilities" (as defined in the Public Utilities Act of the State of California) and those of private industry, business, or individuals solely for their own use or for use of their tenants; and storm drains, sanitary sewer, street lighting, traffic signal systems, duct banks, telephone cable, transmission cables, and completely buried structures.

The District has made an earnest effort to locate and indicate on the drawings all utilities which exist within the limits of the work. However, the accuracy and completeness of the utilities indicated on the drawings are not guaranteed. If utilities are shown in profile, the depth indicated is based on general practice and is not guaranteed at any specific location. No attempt has been made

to show service connections on the plans. It shall be the responsibility of the Contractor to determine the exact location of all utilities and their service connections. The Contractor shall have the utility companies field locate their utilities before excavation. The Contractor shall verify with each utility company the extent to which they will field locate their utilities. Where required, field location by Contractor forces shall be included in the contract price for which such work is appurtenant thereto and no additional allowance will be made, therefore. The Contractor shall make their own investigation as to the location and type of existing utilities and their appurtenances and service connections which may be affected by the contract work and shall notify the District as to any utility located by the Contractor which has been incorrectly shown or omitted from the drawings.

B. Utilities Shown on Plans or Found Through Field Markings or Potholing

Where utilities cross or parallel the pipeline trench but do not conflict with the permanent work to be constructed, the Contractor shall protect the utility in place unless otherwise indicated on the plans. The Contractor shall notify the utility owner at least two working days in advance of the crossing or parallel construction and will coordinate the construction schedule with the utility service requirements.

Unless otherwise provided in the specifications, full compensation for crossing or paralleling of utilities shown on the plans shall be included in the contract unit price for which such work is appurtenant thereto and no additional allowance will be made. Said various contract prices shall include all labor, materials, tools, and equipment necessary or incidental to the work.

C. Special Water/Sewer Crossings

At the locations shown on the plans or if the vertical separation between the outside of the sewer or recycled water pipe and the outside of the water pipe at crossings is less than one (1) foot, and when directed by the District, the Contractor shall provide the construction required per the detail shown on the plans and per the California Department of Public Health Water/Sewer Special Construction Requirements. The special construction will be deleted at locations shown if the vertical separation of the waterline above the sewer line is 1 foot or greater.

The District hereby reserves the right to increase or decrease this item from the quantity shown on the Proposal forms without altering the unit price bid per each. Payment will be made in accordance with the unit bid price provided on the Bidding Sheet; in the event no item for said special construction work is designated on the Bidding Sheet, Contractor shall be paid under the "Extra Work" provisions of the General Conditions.

D. Relocation of Utilities by the Contractor for Their Own Convenience

The temporary relocation or the alteration of any utility desired by the Contractor solely for their own convenience in the performance of the contract work, to a position or condition other than that provided for in the specifications or shown on the drawings, shall be the Contractor's own responsibility, and the Contractor shall make all arrangements with the property owners regarding such work. Any costs of such work for the Contractor's own convenience shall be absorbed in the unit prices or included in the lump sum amounts bid for the various contract items.

E. Service Connections

Compensation for service connection crossings (not shown on the Plans) shall be included in the contract price for which such work is appurtenant thereto and no additional allowance will be made.

F. Utility Conflicts with Proposed Improvements

If a utility, whether shown on the plans or not, should intersect the proposed improvement at grade anywhere along the line of the improvement, the Contractor shall immediately notify the District. The Contractor may be advised to continue with the construction, leaving sufficient "gap" in the Contractor's construction as determined by the District as may be necessary to accommodate a resolution of the conflict, to be completed after the conflict has been resolved. In addition, the Contractor shall notify the District in writing, stating the nature of the conflict, location by schedule, sheet number, name of the street or location of easement, and the station at which the conflict occurred. The District shall, within a reasonable time, make the necessary arrangements to resolve the conflict. Completion of the gap after the resolution of the conflict shall not be just cause for additional compensation. Such completion of the "gap" shall be started within three working days after the Contractor has been notified of resolution of the conflict and completed in a workmanlike manner within reasonable time thereafter. When directed or approved by the District, changes in line or grade of any structure being built may be made in order to avoid utilities. Any additional costs because of such changes will be paid for as a bid item or as "Extra Work".

G. Unknown Utilities Discovered During Construction

(Not including service connections)

Parallel Utilities Not in Conflict. When said utility is more or less parallel with, and any portion of it does not lie within the trench prism specified hereinabove, the Contractor shall advise the District thereof, and in cooperation with the owner of the utility, provide and place the necessary support, if any, for proper protection to

ensure continuous and safe operation of the utility. All costs of such work shall be borne by the Contractor.

The alteration, relocation, or proper support and protection shall be done and paid for as follows:

(1) Protection Only. Upon disclosing a utility in the course of excavation that was not indicated on the drawings or marked in the field and is in conflict with the proposed permanent works, the Contractor shall immediately investigate if it is abandoned. The Contractor shall protect it in place if the utility is deemed live, determination of the abandonment cannot be assessed in a timely manner, or the owner wants the line protected. The Contractor will be required to protect the existing utility in place and construct the proposed facility under (or over) the unknown utility per the plans. Abandoned lines needing protection only for the initial crossing of an abandoned utility that conflicts with the proposed project in more than one location; and only if the Contractor did protect the abandoned utility in place. No compensation will be allowed if the line is deemed inactive and removable.

(2) Protection and Relocation/Alteration. When the said utility is found to occupy the space required to be occupied by a part of the permanent works to be constructed or to lie parallel to the permanent work and within the trench prism defined by the minimum allowable trench excavation consistent with safety and the rules, orders, and regulations of local, State and Federal agencies having jurisdiction; the District will arrange for the relocation or alteration of said utility or proposed permanent works, or the District will require the Contractor to do same as "Extra Work" or if covered as a separate bid item.

Where unit bid items are included in the proprosal, compensation for items (1) and (2) above will be at a unit price per each in accordance with the proposal. The number of such conflicts is estimated, and the District hereby expressly reserves the right to add to the number shown or decrease from the number shown or to totally delete the item for unknown utility crossings at no change in the unit price per each. Compensation for any downtime shall be included in the Contractor’s unit bid item for unknown utilities. No additional compensation for downtime shall be allowed.

Time extension for such crossings shall be determined by the District and shall be added to the total time for completion allowed and for which no liquidated damages will be assessed. If a bank of conduits (same utility or different utilities) is encountered, either stacked horizontally and/or vertically, they shall be considered a single crossing. Similarly, conduits of the same utility or different

utilities horizontally separated within 5 feet of each other shall also be regarded as a single crossing.

H. Responsibility of the Contractor

The Contractor shall be held responsible for all costs for the repair of any and all damage to the contract work or to any utility (whether previously known or disclosed during the work), as may be caused by the Contractor's operations. Utilities not shown on the drawings to be relocated or altered by others shall be maintained in place by the Contractor.

At the completion of the contract work, the Contractor will leave all utilities and appurtenances in a condition satisfactory to the utility owners and the District.

15. PROTECTION OF FACILITIES OTHER THAN UTILITIES

It shall be the Contractor's responsibility to protect in place or remove and replace to original condition all existing facilities. The existing natural and man-made features and elevations on the plans are shown by topography. The accuracy of the topography shown is not guaranteed. It shall be the Contractor's responsibility to familiarize themself with the conditions of proposed work and to identify by field investigation those features, whether or not shown on the plans, which require removal and replacement or protection in place. These features include, but are not limited to, fences, cross gutters, roads, sidewalks, driveways, curbs and gutters, power poles, signs, drainage structures, trees, landscaping, etc.

The Contractor shall repair all existing structures which may be damaged as a result of the work under the contract. Reconstruction shall be of the same type and material as the existing facility and shall be of equal quality or better than the original work.

Full compensation for complying with these requirements shall be considered as included in the price bid for the various items of work, and no additional compensation shall be made, therefore.

16. GROUND WATER

Contractor shall investigate the possibility of ground water prior to submitting bid and shall assume all cost and liabilities incurred, should a ground water problem arise.

17. CONSTRUCTION WATER

The Contractor shall make all arrangements to furnish all construction water, all at no cost to the District, unless otherwise stated in the Special Requirements herein.

Bidder should contact District prior to submitting bid for further information regarding District's policy on construction water.

The Contractor shall coordinate with the District to obtain and check-out the

District's hydrant meter including paying all deposits and fees. Refer to District Standard Drawing No. D–3 for Construction Meter Installation Detail.

18. WATER SUPPLY FOR COMPACTION AND DUST CONTROL

Contractor shall furnish and apply all water necessary for compaction and dust abatement purposes.

Contractor shall apply water to construction areas where dust conditions so warrant, as directed by the District.

The water supply and payment of fees shall be the responsibility of the Contractor, unless otherwise stated in the Special Requirements herein.

Full compensation for complying with these requirements shall be considered as included in the price bid for the various items of work, and no additional compensation shall be made, therefore.

19. TRAFFIC CONTROL

It shall be the Contractor's responsibility to maintain traffic warning signs, barricades, flagmen, and other traffic control devices as required to maintain two-way traffic, and as required by agencies having jurisdiction over the roadways in the work area. It shall be the responsibility of the Contractor to investigate with various agencies having jurisdiction over the right-of-way in work area to determine the extent of traffic control that may be required by each agency.

Also, it shall be the Contractor's responsibility to provide all traffic control devices to ensure a safe working environment for any associated project work such as survey, geotechnical and materials testing, etc., that is required.

Full compensation for compliance with those provisions shall be considered as included in the bid unit price for various items, and no other compensation shall be made, therefore.

20. ACCESS TO ADJACENT PROPERTIES

Contractor shall at all times provide access to the properties in the area of work, unless otherwise approved by District. The Contractor shall be responsible for providing adequate advance notice to properties that will not have access. It shall be the responsibility of the Contractor to provide such temporary structures in the area of work to provide reasonable access to the properties. At least one (1) lane on cross streets shall be available at all times for use of vehicles and emergency equipment.

Full compensation for compliance with these provisions shall be considered as included in the bid unit price for various items, and no other compensation shall be made, therefore.

21. CONSTRUCTION STAKING

A. Surveying and Staking

The Contractor will provide all construction staking in accordance with Contract Documents. One (1) set of stakes must be provided at 25-foot stations plus all horizontal and vertical angle points and appurtenance outlets for the gravity sewer pipelines. One (1) set of stakes must be provided at 50-foot stations plus all horizontal and vertical angle points and appurtenance outlets for the waterline and sewer force mains. Any costs for re-staking due to stakes lost during construction shall be the responsibility of the Contractor. If the Contractor requires additional staking, the Contractor will be responsible for the additional survey/staking costs. All plans, descriptions and calculations related to surveying including grade sheets, shall be signed, and stamped by the Contractor's Land Surveyor, or Professional Engineer authorized by the State of California to practice land surveying.

The Contractor shall provide the District all cut or grade sheets and survey data within no more than two working days after staking and no less than three days prior to construction for any particular phase of the construction work.

B. Lines and Grades

All work under this Contract shall be built in accordance with the lines and grades as shown on the drawings. If changes are required from the original design plans for whatever reason, the Contractor is responsible for revising the staking accordingly. Distance and measurements, except elevations and structural dimensions, are given and made on horizontal planes. For pipeline work, the surveyor will provide offset line and grade stakes at ground level and furnish cut sheets, therefore; the Contractor shall be responsible to transfer of such line and grade into the trench for construction of the work and for accuracy of the transfer cost of transfer shall be included in the unit bid for the work and no extra compensation will be made to the Contractor. The Contractor shall preserve benchmarks, survey stakes, and points sets for lines, grades, or measurement of the work in their proper places until authorized by the Project Engineer to remove them. The Contractor shall provide the Engineer with Cut Sheets for approval at minimum of three (3) working days prior to commencing construction. All issues with the staking shall be specifically marked on the cut or grade sheets when these are provided to the District and submitted as an RFI for specific resolution.

C. Potholing

The Contractor shall provide coordinates and elevations, (x, y and z coordinates) of all potholing. The coordinates shall be referenced to the plan provided by the Engineer. Survey of all potholing locations shall be considered part of the construction staking and included in the bid item. No additional compensation will be allowed.

D. Data Provided by the Owner

The Owner or Engineer shall provide the original design data in AutoCAD/Civil 3D format with control data (Northing, Easting) for monumentation shown on recorded maps only. Control data provided by the Owner shall be verified for conformance to the recorded map by the Contractor prior to use for any purpose. The Contractor is responsible for determining if any conflict exists.

The Owner makes no representation as to the compatibility of this Data with your hardware or your software beyond the specified release of referenced specifications.

The Data provided is part of the Owner's proprietary instruments of service and shall not be used by the Contractor or anyone else receiving this datum through or from the Contractor for any purpose other than as a convenience for construction staking services for this project.

To the extent that the Data is electronic files, those files are not the approved construction documents. Further, differences may exist between this Data and corresponding hard-copy, engineering documents or recorded survey documents. In the event that a conflict arises between the signed, recorded or sealed hard-copy survey documents or construction documents ("Hard-Copy Documents") prepared by the Owner and the electronic files, the Hard-Copy Documents shall govern. The Contractor is responsible for determining if any conflict exists. By the use of this Data, the Contractor is not relieved of their duty to fully comply with the contract documents, including, and without limitation, the need to check, confirm and coordinate all dimensions and details, take field measurements, verify field conditions, and coordinate your work with that of other contractors for the project.

To the extent that the Data is intended to be used for staking and/or grading of property, the Contractor should be aware that the Data was prepared

anticipating that a duly licensed and qualified Land Surveyor would perform on-site interpretation, verification, cross-checking, and field-correction of the Data at the time of actual staking of the property prior to grading.

If changes are required to the original design, the Owner will provide to the Contractor redlined changes on the original plans in PDF format only of the approved changes.

22. PROTECTION OF SURVEY MONUMENTS

It shall be the Contractor's responsibility to protect all of the existing survey monuments. Removal of such monuments or displacement thereof shall require their resetting to the existing type of monument. The cost of resetting such monuments shall be the financial responsibility of the Contractor. Contractor is advised that resetting of monuments must be done by a registered civil engineer or licensed land surveyor. Should the Contractor anticipate removal of any survey monuments, the Contractor shall include the cost of resetting of the same in the various items of work.

23. RECORD DRAWINGS

The Contractor SHALL PROVIDE and keep up to date, a complete "as-built" record set of blueline prints, which shall be corrected daily and show every change from the original Drawings and Specifications and the exact "as-built" locations, measurements, sizes, and kinds of equipment. Prints for this purpose shall be obtained from the Engineer at cost. This set of Drawings shall be kept on the work site and shall be used only as a record set. The Engineer shall require that these drawings be presented monthly for review prior to any progress payment being made. At the completion of construction, the Contractor shall deliver said record set of prints to the District and will be required to certify the accuracy of the Record Drawings.

24. RE-PLANTING

Where cultivated and maintained ground covers in lawns, parkways or easements have been removed for installation of pipelines or other facilities, the Contractor shall restore or replace such ground cover in kind, or per plans, by re-planting or resodding, after the backfill in the trench or excavation has been consolidated and the construction area graded and cleared of rocks and other objectionable material as required by these specifications. After re-planting, the areas shall be covered with a suitable mulch.

Where natural vegetation has been removed for installation of pipelines, after the installation, compaction, grading, and clearing has been completed, the Contractor shall re-plant such areas in accordance with Section 25 - "Erosion Control" of these Basic General Specifications.

All costs to the Contractor for restoration, replacement, re-planting or resodding shall be absorbed in the Contractor's bid for the applicable unit prices per linear foot of pipe and no other compensation will be made, therefore.

25. EROSION CONTROL

A. General

The Contractor shall provide erosion control measures as defined herewith on all areas where the natural vegetation has been disturbed by the construction of the facilities. If a ground cover other than natural vegetation has been disturbed, this section does not apply, and the Contractor shall replace said ground cover in kind.

B. Preparation

After the backfill has been compacted and the pipeline tested, the Contractor shall remove and dispose of rocks and debris from the area to be reseeded. No seeding shall be performed during windy weather or when the ground is too wet or in an untillable condition. The fertilizer and seed shall be spread before the straw cover material is applied. Commercial fertilizer shall not be applied until after the seed has been sown.

C. Material

Materials shall consist of the following: Seed - The seed shall consist of the following mixture: Crested wheatgrass, 47 percent; Intermediate Wheatgrass, 27 percent; Wimmera Ryegrass, 13 percent; Blando Ryegrass, 13 percent. The seed shall be spread at the rate of 100 pounds per acre and shall be applied by the use of a "Cyclone Seed Sower" or equal. Fertilizer - The fertilizer shall be Ammonium Phosphate (16-20-0) spread at the rate of 300 pounds per acre and shall be applied by the use of a "Cyclone Seed Sower" or equal. Mulch - After the application of the seed and fertilizer, new straw (stable bedding straw shall not be used) shall be uniformly spread at the approximate rate of four tons per acre. The straw shall then be "Mulched" into the ground by use of a "wire" roller or other approved equipment.

D. Protection for Steep Slopes

In cases where the grade over the pipeline exceeds 25 percent slope the Contractor shall provide additional erosion control measures to stabilize the backfill material. The Contractor shall submit to the Engineer for the Engineer's approval, special engineering details of the method to be used.

Full compensation for complying with the requirements of this section shall be included in the unit price per linear foot of pipe installed and no other compensation shall be made, therefore. Bidder's attention is specifically called to

the fact that the responsibility of determining the amount and the type of erosion protection shall rest with the prospective bidder.

26. CONTRACTOR'S SUBMITTALS

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 the Contractor's own work or in that of any other contractor, subcontractor, or worker, with an electronic (pdf) copy of all shop or setting drawings, calculations, schedules, and materials list, and all other provisions required by the Contract.

Contractor shall make any corrections required by the Owner's Representative, and email to the Owner's Representative corrected copies in pdf format and furnish such other copies as may be needed for completion of the work.

Whenever called for in these Specifications or on the Drawings, or where required by the District, the Contractor shall furnish to the Construction Manager, and District's Representative, for review an electronic submittal of good quality, color, in pdf format.

A Letter of Transmittal shall be included with each submittal and shall include a completed Submittal Review Form (see Appendix) and shall list of the numbers of the drawings submitted. All drawings must be marked with the name of the project and the name of the Contractor and be numbered consecutively. All drawings must be complete in every respect.

Responses and comments to the submittals will be e-mailed in PDF format. No hard copies will be sent. The Construction Manager will respond directly to the Contractor and will copy the District's Representative.

Revisions indicated on submittals shall be considered as changes necessary to meet the requirements of the Contract Drawings and Specifications and shall not be taken as the basis of claims for extra work. Submittals that are not approved will be returned to the Contractor for corrections and re-submittal. Incomplete submittals will not be accepted.

It is considered reasonable that the Contractor shall make a complete and acceptable submittal to the District by the second submission of a submittal item. The District reserves the right to withhold monies due the Contractor to cover additional costs of review beyond the second submission.

Approval of shop drawings will be general and shall not relieve the Contractor from the responsibility for proper fitting and construction of the work, nor from furnishing the material and work required which may not be indicated in the shop drawings when approved; neither does it relieve the Contractor from responsibility for errors in shop drawings.

Example submittals include, but are not limited to the following:

A. All materials provided by the Contractor

B. All appurtenances provided by the Contractor

C. Miscellaneous
   (1) Pothole information for utilities
   (2) Copies of permits required to be obtained by the Contractor
   (3) SWPPP
   (4) Pre-Construction Video
   (5) Schedule of construction (with key milestones provided)
   (6) Waterline filling, disinfection, and flushing procedures
   (7) Sewer bypass plan
   (8) Safety program

27. RESPONSIBILITY FOR MATERIAL FURNISHED BY THE DISTRICT

The Contractor's responsibility for material furnished by the District shall begin upon the Contractor's acceptance at the point of delivery to the Contractor. All material shall be examined by the Contractor and District. The Contractor shall immediately (upon delivery) notify the District of any material the Contractor perceives to be defective in manufacture or otherwise damaged. Should the District concur that the material should not be utilized the material will be replaced by the District. Material furnished by the District in good condition and accepted by the Contractor, which is later discovered to have been damaged, shall be replaced by the Contractor at the Contractor's expense. The Contractor shall be responsible for the safe storage of all materials until they have been incorporated in the completed project.

28. ERRORS OR DISCREPANCIES NOTED BY CONTRACTOR

If the Contractor, either before commencing work or in the course of the work, finds any discrepancy between these Specifications and drawings, or between either of them and the physical conditions at the site of the work, or finds any error or omission in any of the drawings or in any survey, the Contractor shall promptly notify the Engineer in writing of such discrepancy, error, or omission.

29. HANDLING AND STORAGE OF MATERIALS

All materials shall be handled in such a manner as to prevent damage and, in the case of water system work, maintain sanitary conditions. All materials for use in the work shall be stored by the Contractor in such a 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 as to work under the Contract.

30. GEOTECHNICAL SERVICES

All construction operations should be observed by a representative of the geotechnical engineer. The presence of the geotechnical engineer's field representative will be for the purpose of providing observation and field testing to ascertain that the in-place density of compacted fill meets the project specifications, and will not include any supervising or directing of the actual work of the contractor, the Contractor's employees, or agents. Neither the presence of the geotechnical engineer's field representative nor the observations and testing by the geotechnical engineer shall excuse the Contractor in any way for defects discovered in the Contractor's work. It is understood that the geotechnical engineer will not be responsible for job or site safety on this project, which will be the sole responsibility of the contractor. CONTRACTOR TO PROVIDE SAFE ACCESS FOR GEOTECHNICAL IN CONFORMANCE WITH OSHA STANDARDS AT NO ADDITIONAL COST TO THE DISTRICT.

Dependent upon the circumstances of each particular project, as determined by the District, geotechnical services may include full time monitoring and testing or part time, periodic monitoring and testing.

31. EARTHWORK

A. General

Earthwork shall conform to the requirements of the agency having jurisdiction but shall not be less than herein specified. Earthwork shall be performed in accordance with the requirements of Section 19 of the Specifications entitled: "State of California, Department of Transportation, Standard Specifications", Latest Edition, insofar as the same may apply and except as herein modified.

All excavations and embankments required to complete the work as specified herein shall be unclassified and made to the lines and grades shown upon the plans, or as staked in the field. (ALL EXCAVATION SHALL BE UNCLASSIFIED AND IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY PRIOR TO SUBMITTING THEIR PROPOSAL TO FAMILIARIZE THEMSELF WITH THE CONDITIONS THAT THEY MAY ENCOUNTER DURING CONSTRUCTION.) Excavated materials not required or approved by the Engineer for fill, embankments or backfills shall become the property of the Contractor and shall be disposed of at the Contractor's own expense.

All excavations shall be protected and supported as required for safety and in the manner set forth in the rules, orders and regulations prescribed by the Division of Industrial Safety of the State of California.

All trenches and excavations shall be backfilled overnight and on weekends and holidays. Barriers shall be placed at each end of all excavations, and at such places as may be necessary along excavations from sunset each day to sunrise of the next day until such excavation is entirely refilled. (BACKFILL SHALL BE COMPLETE AND STREETS OPEN TO TRAFFIC BY 5:00 P.M. UNLESS OTHERWISE APPROVED OR REQUIRED BY THE DISTRICT AND/OR JURISDICTIONAL AGENCY.)

No excavated material shall be deposited on private property unless written permission of the Property Owner thereof is secured by the Contractor, or specifically provided for on these plans and in these specifications. Copies of said written permission, duly signed by the Property Owners of the private property involved, shall be furnished to the District by the Contractor before any excavated material is placed outside the limits of the established right-of-way. Free access must be provided to all driveways, access roads, water valves, hydrants, other utility appurtenances, etc.

Any water that may be encountered or may accumulate in the excavation shall be pumped out or otherwise removed as necessary to keep the bottom of the excavation free and clear of water during the progress of the work.

All backfill and pipe bedding material shall conform to the requirements herein this section, the provisions of the Agency having jurisdiction, pipe manufacturer's requirements, and the requirements of the contract and drawings. The Contractor shall remove and legally dispose of any nonconforming material including but not limited to pipe material, trash, debris, nonconforming fill, pavement, etc. all at no additional cost to the contract.

B. Clearing and Grubbing

Areas where construction is to be performed shall be cleared of all rubbish and other objectionable material of any kind, which, if left in place, would interfere with the proper performance or completion of the contemplated work, would impair its subsequent use or form obstructions therein. Trees and other landscaping, unless otherwise specifically identified on the plans for removal, shall not be destroyed, and such measures as are necessary shall be taken by the Contractor for the protection thereof. Organic material from clearing and grubbing operations will not be incorporated in excavation backfill.

It shall be the Contractor's responsibility to remove and dispose of all excess material resulting from clearing and grubbing operations at Contractor's own expense. The Contractor shall make their own arrangements for disposal sites at

the Contractor's own expense, at which said material may be wasted. Full compensation for clearing and grubbing shall be included in the contract unit price for which such work is appurtenant thereto, and no additional allowance will be made, therefore.

C. Grading Along Pipeline

The Contractor shall perform all grading to provide a working pad along the pipeline. The pad grade shall follow the existing ground grade as nearly as possible. If unnecessary excessive overcutting occurs during this operation, the Contractor may be required to replace all such overcut material and recompact to 90%, or to do other remedial work as directed by the District, all at no cost to the District.

D. Trench Excavation

(1) General

Excavation for water (potable, non-potable, and recycled)/sewer pipe, fittings, and appurtenances shall be in open trench to the depth and in the direction necessary for the proper installation of the same as shown on the plans or as otherwise directed by the District. Trench banks shall be kept as near vertical as is safe, and where necessary shall be properly braced and sheeted, in accordance with the provisions of the Section herein entitled "Trench and Excavation Shoring". The trench bottom shall be graded to provide a smooth, firm, and stable foundation at every point throughout the length of the pipe. For sewer pipe, at each joint the bottom of the trench shall be recessed in such a manner as to relieve the bell or coupling of all load.

Where the excavation has been made deeper than necessary, the Contractor shall furnish crushed rock, sand, or other material approved by the District for bedding to provide uniform support under the lower third of the depth of the pipe barrel. The cost of the material and labor to place and compact to achieve a firm and stable foundation herein specified shall be included in the unit price bid for the size of pipe laid thereon.

(2) Limit of Excavation

Except with specific approval of the Engineer, no more than 500 feet of open trench shall be excavated in advance of laying of pipe.

(3) Tunneling

Tunneling will be permitted only where native earth is of such firmness that it will remain in its original position, without sloughing off, throughout the work of excavation and backfilling; if sloughing occurs, the roof of the tunnel shall be broken down and the trench excavated as an open trench as herein specified.

(4) Trench Widths

(a) Water

As stated elsewhere in these Specifications, all trenches shall have vertical sides, unless District may designate otherwise. Trench width shall be such that ample working room shall be provided on either side of pipe, provided that width of ditch measured at top of pipe shall not exceed 3 pipe diameters or 3 feet, whichever is greater. In the event of cave-ins of trench sides where aforesaid width is exceeded, District may, at the District's discretion, require Contractor to use concrete or other means of special backfill for a vertical distance of not less than one-fourth (1/4) the outer pipe diameter. The cost of the labor and material to provide the concrete cradle, if required, shall be the responsibility of the Contractor, and no additional compensation will be made, therefore.

(b) Sewer (Gravity lines)

The maximum allowable trench width, at the top of the pipe, is the outside diameter of the barrel plus 12 inches on either side of the exterior of the pipe barrel. Where the trench width at the top of the pipe is wider than 12 inches on either side of the exterior of the pipe barrel, the pipe shall be backfilled from the bottom of the trench to a level one-fourth (1/4) of the diameter above the center of the pipe with 3/4-inch crushed rock or as directed by the District. The cost of the labor and material to provide crushed rock encasement, if required, shall be the responsibility of the Contractor, and no additional compensation will be made, therefore.

(5) Blasting

Use of explosives on the work shall be subject to approval of the District. All operations involving handling, storage and use of explosives

shall be conducted with every precaution prescribed by Construction Safety Orders of Division of Industrial Safety, State of California, and by local laws and regulations. Only competent, reliable persons working under experienced supervision shall be permitted to use explosives. Contractor will be held responsible for and shall make good any damage caused by blasting or otherwise resulting from disposition or use of explosives on the work. Contractor shall obtain, at no additional cost to the District, blasting permit(s) that may be required.

(6) Grading for Pipeline Appurtenances

The Contractor shall perform all rough and fine grading to provide a graded area, sloped to drain, extending 3' minimum radially outside the limits of each air valve or blow-off installation as directed by the District in the field to assure accessibility.

The Contractor shall perform all rough and fine grading to provide a graded area, sloped to drain, extending 4' minimum radially outside the limits of each complete fire hydrant installation to assure accessibility. The location and elevation of graded pad for each fire hydrant installation will be directed by the District in the field.

E. Trench and Excavation Shoring

Pursuant to Section 6705 of the Labor Code of the State of California, in advance of any excavation pursuant to this contract, Contractor shall submit to the District for the District's acceptance 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 such trench or trenches. If such plan varies from the shoring system standards, the plan shall be prepared by a registered civil or structural engineer. Nothing in this provision shall be deemed to allow the use of a shoring, sloping, or protective system less effective than that required by the "Construction Safety Orders". Reference shall also be made to the rules, orders, and regulations of the Division of Industrial Safety of the State of California, latest edition, and the U.S. Department of Labor, Safety and Health Standards for Construction, latest edition.

FULL COMPENSATION FOR COMPLYING WITH THESE REQUIREMENTS SHALL BE CONSIDERED TO BE INCLUDED WITHIN THE CONTRACT UNIT OR LUMP SUM BID PRICES PAID FOR THE VARIOUS ITEMS ON THE BIDDING SCHEDULE, AND NO ADDITIONAL ALLOWANCE WILL BE MADE THEREFORE.

F. Pipe Bedding

(1) General

(a) Potable, Non-Potable, and Recycled Water

Clean sand having a minimum sand equivalent of not less than 30 without crushed rock or concrete cradle shall be used unless otherwise shown on Drawings or ordered by District. The bottom of trench shall be excavated uniformly to firm grade as indicated on the Standard Drawings.

Trench bottom shall be given a final trim such that each pipe section when first laid will be continuously in contact with ground along extreme bottom of pipe. At each joint in the water pipe, the bottom of the trench shall be recessed in such a manner as to relieve the bell of the pipe of all loads. Rounding out trench to form a cradle for pipe will not be required. Jetting should not be used to compact the bedding material and the pipe zone.

Where bottom of excavation is in rock, which cannot be excavated to provide uniform bearing for the pipe, Contractor shall over excavate a minimum of 6 inches below design grade, and refill in 3” thick compacted layers with selected excavated materials or provide imported backfill material per applicable standard detail drawing.

(b) Sewer

All pipe bedding shall be of the type indicated on the plans and shall be in accordance with the pipe bedding Standard Drawings included in these Specifications.

Bedding shall be sand, gravel or crushed aggregate having a minimum sand equivalent of not less than 30 or having a coefficient of permeability greater than 0.001 centimeters per second. (COMPENSATION FOR BEDDING MATERIAL AS INDICATED ON THE PLANS SHALL BE INCLUDED IN THE CONTRACTOR’S BID FOR THE APPLICABLE UNIT PRICES PER LINEAR FOOT OF PIPE AND NO ADDITIONAL COMPENSATION WILL BE MADE THEREFORE.) Minimum compaction for all pipe bedding shall be 90% relative compaction.

Where native material is acceptable for bedding as approved by the Engineer (sand equivalent of 30 or greater) the trench bottom shall be graded to provide smooth, firm, and stable foundation at every point throughout the length of the pipe. At each joint in the pipe, the bottom of the trench shall be recessed in such a manner so that the load will be carried uniformly throughout the length of pipe, including the bell or collar.

Where bottom of excavation is in rock, which cannot be excavated to provide uniform bearing for the pipe, Contractor shall over excavate a minimum of 6 inches below design grade, and refill in 3" thick compacted layers with selected excavated materials or provide imported backfill material per applicable standard detail drawing.

(2) Unstable Material

Where material at the bottom of the trench is found to be unstable, soft, or spongy, such material shall be removed to a depth as determined by the Engineer and replaced with Special Crushed Rock Bedding as specified in Section 1-G herein.

(3) Rock

Where rock is encountered, it shall be removed below grade, and the trench backfilled with suitable material to provide a compacted earth cushion with a thickness under the pipe of not less than 1/2-inch per inch of nominal diameter of the pipe to be installed, with a minimum allowable thickness of 6-inches. Where a special bedding class is indicated on the plans, the depth indicated on the Standard Drawing shall be increased to that stated herein, all at no additional cost to the Owner.

CONTRACTOR SHALL RECEIVE NO ADDITIONAL COMPENSATION FOR ABOVE MENTIONED WORK.

G. Crushed Rock Bedding

When specified on the plans or when groundwater is encountered in the excavation, or when soft, spongy, and unstable material is encountered in the bottom of the trench, and when approved by the District, the material in the bottom of the trench shall be removed to a depth directed by the District and replaced with well graded 3/4-inch maximum crushed rock bedding as specified below. The crushed rock bedding shall be installed and compacted as shown on the Standard

Drawing attached to these Specifications, or with no standard drawing place crushed rock bedding 8" min. thickness (90% min. compaction) under bottom of pipe. The 3/4-inch maximum crushed rock material shall be approved by the District before use.

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 5% shall be particles that show no faces resulting from crushing. Less than 10% of the particles that pass the 3/8-inch sieve and are retained on the No. 4 sieve shall be waterworn particles. Gravel shall not be added to crushed rock. Crushed rock shall have the following gradation:

Sieve Sizes	**3/4-inch Max Crushed Rock % Passing**
1”	100
3/4”	90-100
1/2”	30-60
3/8”	0-20
No. 4	0-5
No. 8	--

Crushed Rock Bedding, where ordered by the District, shall be paid for at the unit price per ton complete in place, if Bidding Sheet so indicates, otherwise total cost of crushed rock bedding shall be borne by the Contractor.

Payment for trench width for Crushed Rock Bedding shall be limited to a maximum width of three (3) outside pipe diameters or the actual width, whichever is less. Any trench excavation beyond the maximum width limit shall be filled and compacted with crushed rock per the Standard Drawing, and the COST OF THE ADDITIONAL BEDDING SHALL BE BORNE BY THE CONTRACTOR.

THE DISTRICT RESERVES THE RIGHT TO INCREASE OR DECREASE THIS ITEM WITHOUT CHANGE IN UNIT PRICE OF THIS ITEM OR ANY OTHER ITEM.

H. Trench Backfill and Compaction Requirements

(1) General Requirements

All excavations shall be backfilled with compacted material to level of original ground surface, unless otherwise shown on Drawings or ordered by District. Materials used for backfill shall be selected excavated material

approved by the Engineer with sand equivalent (S.E.) of 30 or greater, or Engineer approved clean sand with minimum S.E. 30, crushed miscellaneous base (CMB), or crushed aggregate base (CAB), and shall be placed as shown on Drawings or as specified in these Specifications or any specifications made a part hereof by reference, or as directed by District. Backfill materials shall not be dropped directly on structures or pipeline, and all materials placed within 12" of pipe or structure shall be free from rocks or boulders larger than 2" maximum dimension and from unbroken masses of earthy materials which might lodge and thereby cause unfilled pockets in excavations.

Warning Tape shall be installed 8 to 12 inches centered and above the top of pipe zone and shall run continuously for the entire length of piping. Warning Tape shall be a minimum of 3 inches wide and be colored and labeled with minimum 1-inch high letter as follows:

- Potable water: blue tape with black printing “CAUTION BURIED WATER LINE BELOW”
- Sewer: green tape with black printing “CAUTION BURIED SEWER LINE BELOW”
- Recycled water: purple tape with black printing “CAUTION BURIED RECYCLED LINE BELOW”
- Non-potable water: yellow tape with black printing “CAUTION BURIED NON-POTABLE LINE BELOW”

(2) Backfill Procedure

Material used in backfilling first layer shall be cohesionless, sandy loam, sandy, or sandy gravel material obtained from required excavation or from approved borrow areas. Material shall not contain any rocks or other hard material detrimental to good bedding of pipe or that might be damaging to protective pipe coating. Pipe zone shall be filled to 12" over top of pipe. Balance of trench shall be filled with material in layers not exceeding 3' in depth. Soils shall be compacted to 90% of the laboratory maximum dry density or the project specifications.

At the end of the work period, backfill shall be performed with proper backfill and compaction pursuant to provisions and requirements herein to allow temporary pavement and access for traffic. At the start of the next

work period, Contractor shall excavate back at least five (5) linear feet of trench from previous work period. As the pipeline construction commences, perform backfill and compaction pursuant to the provisions and requirements herein.

For locations where temporary steel plates are allowed by the jurisdictional agency, Contractor may employ the following method for end of work period backfill placement. The backfill for the remaining five to ten (5 to 10) linear feet of trench can be non-compacted. Set temporary steel plates for the non-compacted area recessed into the surrounding pavement pursuant to the transportation agency requirements. At the start of the next work period, as backfill continues, the five to ten (5 to 10) linear feet of backfill from previous shift is to be watered and compacted for the bottom lift. All non-compacted backfill is used for the bottom lift.

Contractor shall understand that procedure for backfill outlined hereinabove is general and that conditions may be encountered where, due to a change in type of soil, methods specified hereinabove. Contractor will be required to compact as District may direct or as specified elsewhere in these Specifications or any specifications made a part hereof by reference.

Along road or street right of way, the ENTIRE TRENCH SHALL BE BACK-FILLED AS PRESCRIBED BY THE AGENCY HAVING JURISDICTION. At a minimum, all trench backfill shall be compacted to 90% of maximum density as determined by ASTM D 1557 (most current), in all streets and easements, public and private, from the pipe zone to the bottom of the base and 95% to within 12 inches of the bottom of the base material. The base material shall be the thickness required by the jurisdictional agency or per plans and compacted to 95% relative compaction.

For trenches deeper than 10 feet, 95% compaction is required above the pipe zone up to 10 feet from the street subgrade. 90% compaction is required within 10 feet of the street subgrade.

(3) Pipe Protection

Before backfilling, conductor tubes, if used, shall be strutted sufficiently to prevent distortion while compacting backfill. All struts shall be removed after compacting backfill. After insertion of pipe, conductor tubes shall be grouted with either dry sand or cement grout, at District's option.

Before backfilling, mortar-lined and coated steel pipe, 30" diameter and larger, shall be either filled with water or braced with studs sufficiently to prevent distortion while compacting backfill. All bracing shall be removed after compacting backfill.

(4) Backfill Material - Pipe Zone (Sewer)

After the sewer pipe has been laid and inspected as herein specified, the trench shall be backfilled from the level of the bedding shown on the Standard Drawings, to a height of one (1) foot above the top of the pipe with specially selected and carefully compacted material which shall be clean, fine earth or sand, free from large stones or lumps. Backfilling shall be carried on simultaneously on each side of the pipe to assure proper protection of the pipe. Minimum compaction for all pipe zone material shall be 90% relative compaction.

(5) Backfill Material - Above Pipe Zone (Sewer)

From the top of the pipe zone backfill to ground surface, the material for backfill may contain stones ranging in size up to 6-inches in diameter, in quantity not exceeding 40 percent of the volume when said coarse materials are well distributed throughout the finer materials so as to eliminate voids and the specified compaction may be attained. Rocks greater than 2-1/2 inches in any dimension will not be permitted in backfill placed within one foot of pavement subgrade.

(6) Compaction Tests

The compaction test, as required by the District, that meets the required compaction, shall be paid for directly to the testing laboratory by the District. The minimum District requirements are as follows: Compaction tests shall be made at intervals not greater than 100' and one test every 1' maximum vertical increment of compacted trench backfill. All service laterals shall be tested. The tests shall be made in accordance with either the Sand Cone Method (ASTM D1556) or the nuclear gauge testing methodology (ASTM D6938) at rates (i.e. 1 sand cone method to “10” nuclear gauge tests) specified by the District and at varying depths.

It should be noted that dependent upon the circumstance of each project (e.g. quantity of earthwork involved), compaction testing could be administered on a full-time basis. The test interval may range from 40’ to 100’. Therefore, the Contractor shall be prepared to perform backfill and

compaction in lifts and allow for the testing to occur during backfill operations, providing for all safety, protection, shielding, entry support for geotechnical testing personnel. The Contractor shall incorporate this testing procedure in their efforts and schedules at no additional cost to the contract.

Compaction testing is required at all manholes. Manhole compaction testing will be required at 1’ maximum vertical increments.

It shall be the Contractor's responsibility to pay for all compaction tests that indicate insufficient compaction in the area where the Contractor has previously indicated that compaction was completed.

The Contractor shall provide, at the Contractor’s own expense, all labor and equipment necessary access all compaction test holes. Choice of location of all tests will be made by the District. The aforementioned labor and equipment shall be readily available to perform the necessary work when required. Should the Contractor not be ready to perform such work in support of conducting the compaction test, and standby charges are incurred by the District for such a delay, the Contractor shall be responsible for payment of said standby charges.

It shall be the Contractor's responsibility to advise the District two working days prior to requiring compaction tests.

(7) Compaction Requirements Under Agency Permit

Where the permit of a governing agency sets forth requirements for compaction more stringent than those stated herein, the Contractor shall adhere to the Agency requirements in addition to JCSD requirements.

(8) Excess Excavated Material

The Contractor shall make the necessary arrangements for and shall remove and dispose of all excess or unsuitable material off site or at a location approved by the District. All costs for the disposal of excess or waste material shall be borne by the Contractor.

It is the intent of these specifications that all surplus material not required or approved by the Engineer for backfill shall be disposed of by the Contractor outside the limits of the public rights-of-way.

Excavated material shall not be deposited on private property unless written permission from the Property Owner thereof is secured by the Contractor. Copies of said written permission, duly signed by the Property Owner of the private property, shall be furnished to the District by the Contractor before such material is placed on private property.

(9) Imported Backfill Material

Whenever the excavated material is, in the opinion of the District, unsuitable for backfill, the Contractor shall arrange and furnish imported backfill material. Such backfill material shall comply with the requirements of pipe bedding in Section 31.F.(1) herein.

Full compensation for disposing of unsuitable material, as well as for providing suitable material as herein specified, shall be paid for at unit price per ton of such material delivered and placed in accordance with backfill requirements, if Bidding Sheet so indicates, otherwise total cost of Imported Backfill Material shall be borne by the Contractor.

Contractor is hereby notified that the actual quantity of imported backfill material specified herein cannot be determined at this time. The District is anticipating a condition that may not exist; therefore, the quantities are fictitious for the purpose of comparing bids and the District reserves the right to reduce, to totally delete, or increase, the quantity of imported backfill material required without any consideration for adjustment in unit price of this item or any other item if the material is not needed or the final quantities are substantially different from those shown on the bidding schedule.

I. Structure Excavation and Backfill

Structure excavation shall include the removal of all material of whatever nature necessary for the construction of foundations and other structures in accordance with the plans.

In operating compacting equipment near structures, care shall be used to prevent the displacement of, or injury to, the structure. Backfill shall be carried up evenly on all sides in accordance with the soils engineer’s recommendations.

No backfilling shall be done until concrete is thoroughly set and is safe to withstand the load.

All excavation shall be unclassified, and it shall be the Contractor's responsibility prior to submitting their proposal to familiarize themself with the conditions that the Contractor may encounter during construction.

Full compensation for complying with the above requirements for structure excavation and backfill shall be considered as included in the lump sum bid for a structure, and no other compensation shall be made, therefore.

J. Control of Water

The Contractor shall provide and maintain at all times during construction, ample means, and devices with which to promptly remove and dispose of all water entering the excavations or other parts of the work. No concrete footings or floors shall be laid in water, nor shall water be allowed to rise over them until the concrete or mortar has set at least eight hours. Water shall not be allowed to rise unequally against walls for a period of 28 days. Ground water shall not be allowed to rise around pipe installations until jointing compound in the joints has set.

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

Dewatering for structures and pipelines shall commence when ground water is first encountered and shall be continuous until such times as water may be allowed to rise in accordance with the provisions of this Section.

K. Payment

Payment for earthwork and for conforming to all of the provisions of these specifications, unless otherwise specified herein and itemized in the bid schedule, shall be considered to be included in the contract unit or lump sum prices paid for the various items of work wherein earthwork is required, and no additional allowance will be made, therefore.

32. STEEL CASING

Steel casing shall be butt welded of sheets conforming to ASTM Specification A283/A283M or A53/A53M and shall be constructed at the location shown on the plans or as directed by the District. Construction shall be made by open trench. If the Contractor elects to install the key thing pipe by jacking, the provisions of these specifications for jack steel casing pipe shall apply. However, payment shall be at the bid unit price for steel casing.

The key theme pipe shall have a steel thickness not less than 1/4 inch. It shall be the Contractor's responsibility for selecting a size of casing, at or above the minimum specified, in order that the installation may be done with a significant degree of accuracy. Any and all increased costs resulting from the Contractor's use of steel casing pipe with greater diameter or thickness than the minimum specified shall be borne by the Contractor.

Carrier pipe conforming to these specifications for the designated pipe shall be installed within the casing pipe to the lined and grades shown on the plans. The carrier pipe shall be supported on Advanced Products & Systems Casing Spacers and Insulators, PSI Pipeline Seal and Insulator Inc., Cascade Water Works Manufacturing Co., or District approved equal. The ends of the steel casing shall be sealed with synthetic rubber and seals were stainless steel band straps with a weep hole installed at lower end for drainage. The annular space between the steel casing and carrier pipe shall be left empty unless grouting is specified by the Engineer or on the plans.

Measurement for payment for casing pipe, excluding carrier pipe within said casing, shall be made along the centerline of the casing pipe between the limits shown on the plans and/or staked in the field.

Payment for steel casing pipe will be at the contract unit price per linear foot for steel casing pipe in accordance with these plans and specifications. Payment shall be full compensation for furnishing all labor, excavation, backfill, steel casing pipe, shoring, equipment, services, transportation, sandy cement, concrete, grouting operations described herein, and other pertinent items of labor and material required to complete the work. The water carrier pipe will be paid for under the bid item for pipe.

33. JACKED STEEL CASING

The Work of this section includes the furnishing and installing jack steel casing under roadways, railroads, storm drain facilities and other major pipelines, facilities, or structures; including all labor, excavation, backfill, boring, jacking, steel casing pipe, shoring, equipment, services, transportation, sand cement, concrete, grouting, and other pertinent items of labor and material required to complete the work. Jacked steel casing and bore installations shall be installed only by a qualified company regularly engaged in this specialty work.

Jacked steel casing shall be butt welded of sheet conforming to ASTM Specification A283/A283M and shall be constructed in accordance with the provisions of Section 306-2 of the "Standard Specifications for Public Works Construction", Latest Edition, except as herein specified or Northwest Pipe Co. Perma Lok steel casing conforming to ASTM 36, ASTMA 515, grade 60 or ASTMA 572, grade 42.

The casing pipe shall have a steel thickness not less than 3/8 inch. The casing pipe shall be a minimum of 20 feet in length to a maximum of 40 feet in length. Any and all increased costs resulting from the Contractor's use of steel casing pipe with greater diameter or thickness than the minimum specified shall be borne solely by the Contractor.

Steel casing pipe of the minimum size and thickness specified shall be installed in place by jacking and boring methods without the use of water or air at the locations shown on the plans, and to grades required to install carrier pipe. If the bore casing is equal to or exceeds 18-inches in diameter and the length of the bore exceeds 80-feet in length, the contractor shall bore using a track machine, unless otherwise directed by the District.

Voids, if developed outside the casing and within limits for boring or jacking, from any cause such as removal of rocks encountered in boring, shall be filled with lean grout forced in under pressure by insertion of a grout pipe outside of the casing. The lean grout shall consist of one part of portland cement to not more than four parts of sand by volume, placed at low pressure. Grout pressure is to be controlled so as to avoid deformation of the casing. Sand for grout to be placed outside the casing shall be of such fineness that 100% will pass a No. 8 sieve and no less than 35% will pass a No. 50 sieve.

If the Contractor is not ready to place the pipe in the casing at the time of completion of boring and jacking operations, the ends shall be bulk headed, and the approach trenches in public streets shall be backfilled, temporary surfacing placed thereon, and the affected portion of the street reopened to traffic. For short (overnight) duration, the trenches may be securely covered with armored plates to allow for uninterrupted traffic.

The contractor shall be responsible for maintaining the specified line and grade, and preventing settlement of overlying structures, or other damage due to the boring and jacking operations. Except as otherwise indicated in this Section of the Specifications, the Contractor shall comply with the applicable provisions of latest adopted edition of the Standard Specifications for Public Works Construction (SSPWC) together with any latest Supplement Amendment. Additionally, jacked steel casing shall be in accordance with applicable ASTM Standards.

A. Submittal

(1) The following shall be submitted:

(a) Submittals for jacking or boring operation shall be in accordance with SSPWC Section 306-2.1 unless indicated otherwise.

(b) The Contractors attention is directed to the provisions for "Shoring and Bracing Drawings" in Section 6705 of the California Labor Code. If such plan varies from the shoring system standards established in the Construction Safety Orders of the State of California, such alternative systems plans shall be prepared by a civil or structural engineer licensed in the State of California.

(c) Casing installation schedules which include schedules of excavation, pipeline installation, and backfill operations.

(d) Material list including diameter, thickness, and class of steel casing.

(e) Detailed locations and sizes of all boring or jacking and receiving pits.

(f) Shop drawings of casing insulators (spacers) and end seals including manufactures' catalog information.

(g) Permits associated with boring or jacking operations.

(h) Pressure concrete mix design and bracing plans to prevent the carrier pipe from shifting or floating in accordance with SSPWC Section 306-2.3.

B. Potholing of Existing Utilities

Contractor shall be required to pothole any existing underground utilities crossing the proposed jacked steel casing installation that may potentially interfere with the installation. Refer to Special Conditions.

C. Permit Provisions and Requirements

(1) Contractor shall be responsible for obtaining any required permits other than those indicated in the Special Conditions to be obtained by the District. Contractor shall comply with and adhere to all permit requirements at no additional cost to the Owner.

(2) Where Agency permit provisions differ from the specification requirements stated herein, the highest and most stringent standard

or requirement shall govern; and Contractor shall construct the installation to said higher standard at no additional cost to the District.

D. Casing Spacers

Casing isolators/spacers shall have a minimum 14-gauge steel band and where required, 10-gauge risers. The band, risers and connecting studs shall be welded and cleaned at the factory before the application of a fluidized bed fusion bonded PVC coating of between 10-16 mils thickness. The PVC coating shall provide good resistance to acids and alkalies and excellent resistance under ASTM B117 salt spray tests. The isolators/spacers shall have a flexible PVC inner liner of 0.09-inch thickness with a durometer "A" 85-90 hardness and a minimum 58,000-volt dielectric strength. The runners shall be high pressure molded glass reinforced polymer with a minimum compressive strength of 18,000 psi per ASTM D638. The runners shall be 2.0 inch in width and a minimum of 7.0 inches long for C8G-2 models and 11" for C12G-2 models (polyethylene runners are not an acceptable alternative). The runners shall be attached to the band or riser by 3/8" welded steel studs and lock nuts which shall be recessed far below the wearing surface on the runner. The recess shall be filled with a corrosion inhibiting filler. The band section shall be bolted together with cadmium plated studs, nuts, and washers. End seals shall be made of synthetic rubber. Banding straps shall be made of stainless steel.

Products of the type indicated shall be made by one of the following:

(1) Casing Spacers – Pipeline Seal and Insulator Inc. Model C12G-2, Advance Products & Systems Inc. Model S/12, or approved equal.

(2) End Seals – Pipeline Seal and Insulator Inc. Model S, C or W, Advance Products & Systems Inc. Model AC or AW, or approved equal.

The Contractor shall give the District a minimum of three (3) days advance notice of the start of an excavation or boring operation. All work shall be performed in the presence of the District, unless the District has granted prior approval to perform such work in its absence. All welding procedures used to fabricate steel casings shall be pre-qualified under the provisions of ANSI/AWS D1.1. Welding procedures shall be required for, but not necessarily limited to, longitudinal and girth or special welds for pipe cylinders, casing joint welds, reinforcing plates and grout coupling connections. No exterior of interior joints of the carrier pipe shall

have mortar grout applied over a seam until the seam has cooled. Exterior and interior joints of the carrier pipe shall be mortar coated and lined in the field.

E. Installation of Steel Casing

(1) JACKING HEAD: A steel jacking head shall be fitted to the lead section of the casing in such a manner that it extends around the entire outer surface of the steel casing and projects at least 18 inches beyond the driving end of the casing. The jacking head shall not protrude more than 1/2 –inch outside of the outer casing surface. The head shall be securely anchored to prevent any wobble or alignment variation during the boring or jacking operations. To minimize voids outside the casing, excavation shall be carried out entirely within the jacking head and not in advance of the head. Excavated materials shall be removed from the casing as the boring or jacking operation progresses and no accumulation of excavated materials within the casing shall be permitted.

(2) JACKING PIT: The excavations for the boring or jacking operations shall be adequately shored to safeguard existing substructures and surface improvements and to ensure against ground movement in the vicinity of the jack supports. Heavy guide timber, structural steel, or concrete cradles of sufficient length shall be provided to assure accurate control of boring or jacking alignment. The Contractor shall provide adequate space within the excavation to permit the insertion of the lengths of casing to be bored or jacked. Timbers and structural steel sections shall be anchored to ensure action of the jacks in line with the axis of the casing. A bearing block, consisting of a timber or structural steel framework, shall be constructed between the jacks and the end of the casing to provide uniform end bearing over the perimeter of the casing and distribute the jacking pressure evenly.

(3) CONTROL OF ALIGNMENT AND GRADE: The Contractor shall control the application of the jacking pressure and excavation of materials ahead of the casing as it advances to prevent the casing from becoming earthbound or deviating from the required line and grade. The Contractor shall restrict the excavation of the materials to the least clearance necessary to prevent binding in order to avoid loss of ground and consequent settlement or possible damage to overlying structures.

(4) GROUTING: Not used.

(5) INSTALLATION: The installation of the casing shall be in accordance with the SSPWC Section 306-2.1 and subject to the approval of the agency having jurisdiction over the area containing the boring or jacking operations.

F. Installation of Carrier Pipe

(1) JOINTS: All joints of the carrier pipe within the casing shall be in accordance with District Standards.

(2) INSTALLATION OF PIPE: The end seals shall be pulled on (in case of pull-on type of seals) and the casing spacers shall be installed over the carrier pipe at the proper location, in accordance with the casing spacers manufacturer's instructions. Care shall be taken not to damage the carrier pipe coating or the inner coating of casing pipe while installing the carrier pipe. The position of the runners in the carrier pipe and casing shall be as indicated and shall be uniform throughout the casing length. Line and grade of the carrier pipe shall be installed as specified on the plans and deviations shall be permitted. During installation, rifling (rotating) of the carrier within the casing can occur and can be a cause of line and grade discrepancies. Take necessary measures to prevent rifling. Guides may be installed as necessary to prevent rifling (rotating) of the carrier pipe during installation.

(3) TESTING OF THE CARRIER PIPE: Testing of the carrier pipe shall be completed prior to strapping the end seals.

(4) END SEALS: After the carrier pipe has been tested, the end seals shall be strapped by stainless steel bands in accordance with the manufacturer's instructions.

(5) CLOSING OF PITS: After equipment and excavated materials from the boring or jacking operations have been removed from the jacking pit, the Contractor shall prepare the bottom of the jacking pit as a pipe foundation. The Contractor shall remove all lose and disturbed materials below pipe grade to undisturbed earth and re-compact the material.

Measurement for payment for casing pipe excluding carrier pipe within said casing shall be made along the centerline of the casing pipe between the limits shown on the plans and/or staked in the field.

Payment for jacked steel casing pipe will be at the contract unit price per linear foot for jacked steel casing pipe placed in accordance with these plans and specifications. Payment shall be full compensation for furnishing all labor, excavation, backfill, boring, jacking, steel casing pipe, shoring*, equipment, services, transportation, sand cement, concrete, all grouting operations described herein, and other appurtenant items of labor and material required to complete the work. The water carrier pipe will be paid for under the bid item for pipe. The ends of the casing pipe shall be closed using an end seal as manufactured by Advanced Products and Systems, Inc. or District approved equal. Brick and mortar are not acceptable.

34. SUBSTITUTIONS

A. Pursuant to Public Contract Code Section 3400(b) the 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 as 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, the 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

* Shoring shall be by steel shield from top of bore pit excavation to bottom, unless otherwise directed by Engineer.

to the equality of any material, process or article shall rest with the Contractor. The 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 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 the District in a timely fashion will result in the rejection of the proposed substitution.

E. The Contractor shall bear all of the 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.

35. WORKERS

A. Contractor shall at all times enforce strict discipline and good order among its employees. Contractor shall not employ on the Work any unfit person or anyone not skilled in the Work assigned to the Contractor.

B. Any person in the employ of the Contractor whom the District may deem incompetent or unfit shall be dismissed from the Work and shall not be employed on this Work except with the written approval of the District.

36. REMOVAL OF HAZARDOUS WASTE

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 Work site, the Contractor shall immediately stop work at the

affected Work site and shall report the condition to the District in writing. The 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 Work 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 the District and Contractor.

37. 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.

Without limiting the foregoing, Contractor must fully comply with all applicable laws, rules and regulations in furnishing or using equipment and/or providing services, including, but not limited to, emissions limits and permitting requirements imposed by the South Coast Air Quality Management District (SCAQMD) and/or California Air Resources Board (CARB). Although the SCAQMD and CARB limits and requirements are broader, Contractor shall specifically be aware of their application to "portable equipment", which definition is considered by SCAQMD and CARB to include any item of equipment with a fuel-powered engine. Contractor shall indemnify District against any fines or penalties imposed by SCAQMD, CARB, or any other governmental or regulatory agency for violations of applicable laws, rules and/or regulations by Contractor, its subcontractors, or others for whom Contractor is responsible under its indemnity obligations provided for in Section 5 of the General Conditions.

38. COMPLIANCE WITH STATE STORM WATER PERMIT

A. Contractor shall be required to comply with all conditions of the State Water Resources Control Board (“State Water Board”) National Pollutant Discharge Elimination System General Permit for Waste Discharge Requirements for Discharges of Storm Water Runoff Associated with Construction Activity (“Permit”) for all construction activity which results in the disturbance of in excess of one acre of total land area or which is part of a larger common area of development or sale. Contractor shall be responsible for filing the Notice of Intent and for obtaining the Permit. Contractor shall be solely responsible for preparing and implementing a Storm Water Pollution Prevention Plan (“SWPPP”) prior to initiating Work. 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. 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.

B. Contractor shall be responsible for procuring, implementing, and complying with the provisions of 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 Owner's Representative.

C. Contractor shall comply with the lawful requirements of any applicable municipality, the 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.

D. 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.

E. 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 Work, except for liability resulting from the sole established negligence, willful misconduct or active negligence of the 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 Permit.

39. 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 Work 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.

40. DOCUMENT RETENTION AND EXAMINATION

A. In accordance with Government Code Section 8546.7, records of both the 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.

B. Contractor shall make available to the District any of the Contractor's other documents related to the Work immediately upon request of the District.

C. In addition to the State Auditor rights above, the 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 the District, for a period of four (4) years after final payment.

41. SOILS INVESTIGATION

When a soils investigation report for the Work 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.

42. 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.

43. 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 the District in order that proper steps may be taken to have the change reflected on the Contract.

44. PROHIBITED INTERESTS

No District official or representative who is authorized in such capacity and on behalf of the 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.

45. PATENT FEES AND 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 the 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.

46. OWNERSHIP OF DRAWING

All Contract Documents furnished by the 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 the District on request at completion of the Work.

47. 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.

48. SUBMITTALS OF ALL SAMPLES, MATERIAL LISTS AND CERTIFICATIONS

A. Contractor shall furnish to the Owner's Representative 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 Owner's Representative, to the Owner's Representative within a reasonable time period to provide for adequate review and avoid delays in the Work.

C. These requirements shall not authorize any extension of time for performance of this Contract. Owner's Representative 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.

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BASIC SPECIFICATIONS

SECTION B

WATER PIPELINE MATERIALS SPECIFICATIONS

1. GENERAL

A. Alternate Pipeline Materials

Where alternate pipeline materials are allowed by the District, the Contractor shall select such materials and construction methods as will result in a satisfactory completed project. All pipe materials shall be new and unused unless otherwise specified. Materials and strength of pipe shall be as shown on the plans or as specified herein.

B. Contractor Furnished Materials

The Contractor shall furnish (excepting materials specifically listed in the Special Requirements to be furnished by the District) and install all pipe, fittings, supports, bolts, nuts, gaskets, jointing materials, appurtenances, auxiliary piping, and connections to equipment in accordance with the drawings and specifications, all as required for a complete and workable piping system. The materials to be furnished shall be in accordance with the District's "List of Approved Manufactured Materials" and the requirements of the Contract Drawings and Specifications. Refer to Section A Par. 32 for requirements pertaining to Contractor-proposed substitutions.

C. Exposed Piping Supports

All exposed piping shall be adequately supported with devices of appropriate design unless otherwise approved by Engineer, the support shall conform to the Standard Drawing A-5 or as shown on the Drawings.

D. Piping Sizes

Pipe sizes are nominal inside diameter unless otherwise noted. All sizes and types of pipe are noted on the Drawings and specified herein. Where pipe is lined, the nominal diameter shall be the inside diameter of the cement mortar lining, except for wrought iron pipe.

E. Dissimilar Metals

All dissimilar metals shall be insulated from one another with approved insulating flange sets or unions.

F. Material Identification

All pipe and fittings delivered to the job site shall be clearly marked to identify the manufacturer's name, material, class, and thickness. All material shall be new and free of blemishes. Acceptance of pipe and accessories by the District will be based on load bearing tests, and inspection of the complete products as specified hereinafter. Acceptance of installed piping will be based on inspection and leakage tests as specified hereinafter.

2. WELDED STEEL PIPE, CML & CMC

Shop fabricated pipe with machine-applied lining and coating, dye-check shop welding performed after hydrostatic testing of cylinders, pipe per AWWA C200, steel plate per ASTM A1011/A1011M, 10 ga. minimum, minimum yield 36,000 psi, cement mortar coating and lining per AWWA C205. Design stress shall not exceed 18,000 psi. Each pipe section shall be provided, prior to delivery, with temporary plastic end covers, with exposed steel shop coated, 40' maximum joint lengths, lap weld bell x plain end spigot, or rubber gasket bell x rubber gasket spigot (as indicated on the Drawings and/or Bidding Sheet), including rubber gaskets and gasket lubricant. Pipe furnished herein shall be from an organization which has had not less than ten (10) years successful experience providing pipelines of the type specified.

The minimum steel plate thicknesses utilized for water pipeline shall be as shown below:

JURUPA COMMUNITY SERVICES DISTRICT
MINIMUM WATER PIPELINE THICKNESS

Nominal Pipe Diameter	Minimum Cylinder Diameter	Class 150 Minimum Plate Thickness	Minimum Cement Mortar Lining Thickness	Minimum Cement Mortar Coating Thickness
6″	6-5/8″ O.D.	0.1345″	1/4″	3/4″
8″	8-5/8″ O.D.	0.1345″	1/4″	3/4″
12″	12-3/4″ O.D.	0.1345″	5/16″	3/4″
16″	17-3/8″ O.D	0.188″	5/16″	3/4″
18″	19-3/8″ O.D	0.188″	5/16″	3/4″
20″	21-3/8″ O.D.	0.188″	5/16″	3/4″
24″	25-3/8″ O.D.	0.188″	3/8″	3/4″
30″	31-3/8″ O.D.	0.188″	3/8″	3/4″
36″	37-3/8″ O.D.	0.188″	3/8″	3/4″

NOTES

1. Steel thicknesses indicated hereon are minimum; and design steel thickness shall be determined from the pressure imposed (Class, the design stress of the steel and the O.D. of the cylinder). The minimum acceptable yield strength of the steel shall be 36,000 psi. Design stress shall not exceed 18,000 psi regardless of yield strength of steel.

2. All materials shall conform with AWWA Specifications C200 (Steel Pipe CML/CMC, Section C205)

3. DUCTILE IRON WATER PIPE

Ductile Iron Water Pipe shall be used only where specifically approved by District; and shall comply with ANSI A21.51 rubber gasket push-on type joint bell and spigot, conforming to ANSI A21.11 manufactured in sections of 18 feet or 20 feet. Fittings shall be rubber gasket push-on manufactured in accordance with ANSI A21.10. Where indicated on the Project Drawings, restrained joints shall mean the use of T.R. Flex Pipe as manufactured by U.S. Pipe or approved equal. All ductile iron pipe shall be provided with double polyethylene encasement for the entire length of the pipeline, per AWWA C105.

Unless otherwise specified, the interior of the Ductile Iron Water Pipe and fittings shall be lined with a uniform thickness of cement mortar "double thickness" then sealed with a bituminous coating in accordance with AWWA C104 (latest). The outside surfaces

of D.I.P. and fittings shall be coated with a bituminous coating in accordance with ANSI A21.6 or ANSI A21.51.

Standard pressure class for Ductile Iron Water Pipe shall be based on internal pressures and external loadings. Unless otherwise noted, minimum design pressure class shall be 150 psi. Ductile Iron Pipe thickness Class 53 shall be used where flanged, or Victaulic-type pipe joints are specified or indicated on the plans.

All service connections made to the Ductile Iron Pipe shall be a brass double service strap type.

4. POLYVINYL CHLORIDE (PVC) PIPE

PVC pipe shall conform to the latest revision of AWWA C909, unless otherwise specified herein.

All pipe shall be made from quality PVC resin, compounded to provide physical and mechanical properties that are equal or exceed cell class 12454 as defined in ASTM D1784. The pipe bell shall consist of an integral wall section with a factory installed, solid cross-section elastomeric gasket, which meets the requirements of ASTM F477. The elastomeric gasket shall be furnished by the pipe manufacturer.

The bell section shall be designed to be at least as hydrostatically strong as the pipe barrel and meet the requirements of AWWA C909. The joint design shall meet the requirements of ASTM D3139 under both pressure and 22 in HG vacuum.

This specification includes polyvinyl chloride (PVC) pipe of the following classes/working water pressures:

- For Working Pressure up to 150 psi: Class 235 (DR-18)
- For Working Pressure up to 200 psi: Class 305 (DR-14)

AWWA C909 PVC pipe shall be Class 235 minimum (DR-18) or as specified on approved Drawings or elsewhere.

All PVC pipe shall be twenty (20) foot laying lengths and have cast iron outside diameters (C.I.O.D.'s).

PVC pipe shall be installed within one year of its manufactured date. Pipe older than one year shall not be delivered to the construction site.

The District shall require the manufacturer to submit a certificate stating that all pipe has been manufactured and tested in accordance with this specification.

The Contractor shall submit test results showing the physical properties of the materials used in the manufacture of the rubber gaskets, if required by the District. All rubber gaskets furnished under this specification shall be subject to inspection and/or test by the District. Any gasket found to be unsatisfactory by the District shall be immediately replaced by the Contractor, at no expense to the District.

All pipe furnished under these specifications shall be the product of an organization that has had not less than three (3) years of successful experience in the manufacture of pipe of the type specified. The total pipeline shall be the product of one company (or integrated companies) in the business for the design and manufacture of the pipeline materials required herein; unless otherwise approved in writing by the District.

All pipe to be supplied under these specifications must have the following markings on the pipe barrel: Nominal size and O.D. base (for example, 8" C.I.O.D.); dimension ratio number; AWWA pressure class, and manufacturer's name or trademark, and production record code. All rubber rings shall be furnished by the pipe manufacturer. These rubber rings (elastomeric gaskets) shall be manufactured to conform to the requirements of ASTM F477.

Joints

Unless otherwise specified or shown, all joints of PVC pipe shall be with elastomeric gasket bell ends. Solvent welded joints will not be allowed. The bell ends shall be an integral thickened bell. The minimum wall thickness of the bell, at any point, between the ring groove and the pipe barrel shall conform to the dimension ratio requirements of AWWA C909.

Pipe Outlets 2 Inches and Smaller

Outlet connections to PVC water mains two (2) inches and smaller shall be bronze service saddles with double bronze straps designed specifically for C.I.O.D. PVC pipe. No single strap saddles or full circle saddles are allowed.

Pipe Outlets Larger Than 2 Inches

Outlets in C909 PVC pipe larger than two (2) inches shall be accomplished through the use of ductile fittings.

For outlets to be installed after initial pipeline construction, a tapping saddle may be used subject to advanced written approval by the District.

Ductile Iron Fittings for PVC

Manufacturers of ductile iron fittings proposed to be furnished under the specification must be approved by the District. Ductile iron fittings shall be American made. Manufacturers of ductile iron fittings, which seek District approval, must conform with District procedures concerning approved manufactured materials.

This specification covers ductile iron fittings for use with AWWA C909 polyvinyl chloride (PVC) pipe including tees, crosses, elbows, reducers, and related special fittings. Cast iron fittings are not permitted.

All fittings for use with PVC C909 pipe shall be cast-iron outside diameter (C.I.O.D.) push-on or mechanical joint fittings with the exception of fittings with valves which shall be push-on or mechanical joint by flange. Ductile iron fittings shall be classified as "compact ductile iron fittings" and shall be produced in strict accordance with ANSI/AWWA A21.53/C153. When flanged fittings are specified or required, the fittings shall be ductile iron confirming to AWWA C110/ANSI A21.10, latest.

Unless otherwise specified, the interior of the ductile iron fitting shall be lined with a uniform thickness of cement mortar “double thickness” sealed with a bituminous coating in accordance with AWWA C104 (latest). The outside surfaces of the DIP fittings shall be coated with NO-OX-ID special protective metal coating and wax.

All ductile iron fittings shall be double polyethylene encased at the time of installation. Double Polyethylene encasement and installation shall be in accordance with AWWA C105.

All bolts and connecting hardware shall be of high strength low alloy material in accordance with ANSI/AWWA C111/A21.11

All buried restraint joints shall be wrapped with double polyethylene encasement. Restraining devices shall be approved by the District.

Mechanical Joint Restraint for PVC Pipe To Fittings and Appurtenances

All pipe connections to fittings and appurtenances shall be constructed with restraint joints. The restraint joints shall be standard manufacturer’s product for C909 PVC pipe.

The restraint for the mechanical joint fitting shall be incorporated in the design of the follower gland and shall utilize multiple wedge segments that act against the pipe. The wedge segments shall increase their resistance as the line pressure increases. The assembled joint shall

maintain the maximum flexibility and deflection of all nominal pipe sizes after the pipe has been buried.

The restraining glands, wedge segments, and actuating bolts shall be manufactured of high-strength ductile iron, conforming to the requirements of ASTM A536, Grade 65-45-12. All bolts and connecting hardware shall be of high strength low alloy material in accordance with ANSI/AWWA C111/A21.11

The dimensions shall be compatible with standardized mechanical joints conforming to the requirements of AWWA C111 / ANSI A21.11 and AWWA C153 / ANSI 21.53 through 24 inches.

Breakaway tops shall be incorporated in the design of the actuating bolts in order to visually ensure that the proper torque has been applied. The manufacturing of the actuating bolt shall ensure precise and consistent operating torque of the breakaway top.

The mechanical joint restraining device shall have a minimum working pressure rating of 235 psi and shall have a minimum factor of safety of 2:1. The restraining device shall be coated with the standard manufacturer's coating. All buried restraint joints shall be wrapped with double polyethylene encasement. Restraining devices shall be approved by the District.

High Deflection Coupling

Pipe joints shall not be pulled at any angle greater than one-half the maximum angle recommended by the pipe manufacturer. If an angle greater than one-half of the maximum angle recommended by the pipe manufacturer is required, install ROMAC Alpha Series Coupling to restrain the joint Minimum Curvature. Approval by the Engineer is required before high deflection couplings can be used.

Minimum Curvature

Whenever portions of the proposed water construction are to be installed on the radius of the curve, the minimum radius and installation of the pipe shall be in accordance with the manufacturer's recommendations.

Locator Wire

Locator wire shall be installed over all non-metallic pipelines, services, and appurtenances for the purposes of providing a continuous signal path for a lectern and pipe locators used to determine pipe alignment after installation. Locator wire Shelby 14-1 solid insulated copper wire (UF), in a continuous strand, placed on top of pipe and secured with tape. The wire shall be tied to the pipe at 10-foot intervals with plastic

adhesive tape. Locator wire shall be brought to the surface in concrete valve boxes as approved by the district at 660 feet maximum on centers and add all appurtenances (i.e. fire hydrant, water services, air valves, blow-off, valve cans, etc.), thus providing continuous “looping” between the appurtenances and the water main. If pertinent locations exceed the 660 feet maximum spacing the concrete valve box shall be installed at the edge of right-of-way” and the face of curb in front of the box marked with the letters “LW”. If a curb does not exist, a marker post approved by the District shall be installed within 2 feet of the valve box. Two feet of wire shall be looped within all valve boxes. All splices to locator wire shall be made with direct bury connectors as approved by the District.

After all trench backfill operations are complete, the Contractor shall pay for a third-party to conduct the first conductivity tests to confirm that the wire is continuous. After the installation of all other underground facilities, the Contractor shall pay for a third-party to conduct the second conductivity test to re–confirm that the wire is continuous. The conductivity tests shall be performed with the District representative present. The Contractor shall be responsible for all costs to confirm, locate, and repair the breaks in the locator wire identified in the conductivity test. In addition, the Contractor shall reimburse the District for all costs to re-test repaired sections of the wire. The Contractor is advised to use care and the installation and backfilling operations to prevent damage to the wire. The Contractor shall provide the District a final report summarizing the results of the conductivity testing. The report shall include but not be limited to listing points of failure identified during testing and measures taken to repair the breaks, location where tests were taken, dates, JCSD Staff present during testing, and a final summary showing all passed testing.

Splices shall be made at locations approved by the District. The wire connecting device shall be an underground electrical wire connector to splice and effectively moisture–seal the conductors. Wire connector shall be approved by the District and shall be UL listed and CSA certified for direct and burial splices.

5. WELDED STEEL FITTINGS

All bends, reducers, increasers, tees, crosses, wyes, and other special fittings, except as specifically noted on the Drawings, shall be constructed of cement mortar lined steel pipe with coating as specified for balance of pipeline, and shall be shop fabricated in accordance with the latest revision of AWWA C208. (as modified below).

ELBOWS

Angle	0-22 1/2°	22 1/2°-45°	45°-67 1/2°	67 1/2°-90°
No. Pieces	2	3	4	5

NOTE: At the break point angles (i.e. 22 1/2°, 45°, and 67 1/2°) the Contractor shall use the elbow with the largest number of pieces.

All fittings shall have a steel cylinder thickness equal to or greater than the specified wall thickness of the pipeline, but not less than 10 gauge. The minimum radius for all bends shall not be less than 2.5 times the nominal diameter of the pipelines. Where simulated weld bells are used for lap-welded fittings, the bell plate thickness shall be 1/4".

Special fittings shall be fabricated from machine cement mortar lined and machine outside coated. The individual parts of the fittings shall be cut from the pipe, welded together, and the coating and lining of shop joints shall be hand applied to provide a finished cement mortar lined and finished outside coated joint comparable to the mechanically applied lining and coating detailed herein.

Specials and fittings fabricated from cylinders that have been hydrostatically tested in accordance with these specifications shall be tested by the dye-check method, or approved equal, prior to the lining and coating of said material. Contractor shall submit fabrication drawings for all AWWA shop fabricated fittings to the District for approval prior to construction.

6. DUCTILE IRON FITTINGS

Bends, Tees, Crosses, Reducers, Bushings, Adapters, Caps, and Plugs; ANSI/AWWA C110-(latest), minimum 250 psi rated working pressure, cement mortar lining shall be "double thickness" in accordance with AWWA C104-(latest), flange ends (F) shall conform in dimensions and drilling to ANSI B16.l for cast-iron flanges and flanged fittings for 125 lb., produced by a "District Approved Manufacturer". Short body pattern is acceptable. Properly fitting rubber gasket joint fittings are also acceptable. Fittings shall be double polyethylene encased per AWWA C105.

7. AWWA GATE VALVES

All resilient seat gate valves shall meet the requirements of AWWA C509-(latest) for rubber seated gate valves and shall be tested bubble-tight. In addition, RS Gate Valves shall be furnished with the following items:

- Valve body and bonnet shall be fusion bonded epoxy coated inside and out (10 mils nominal thickness) and meet all requirements of AWWA C550.
- Low zinc bronze stems.

- All stainless-steel body hardware. Resilient seat gate valves shall be produced by a "District Approved Manufacturer".

8. RUBBER SEATED BUTTERFLY VALVES

Butterfly valves shall conform to the latest revision of AWWA C504 and the following:

- Butterfly valves and operators shall be Class 150B, constructed for direct burial and have flanged ends to mate A.S.A. 150 lb. steel flanges.

- Butterfly valves shall be furnished with operators of the traveling nut or worm gear type, self-locking in any position, and sealed, gasketed, and lubricated to withstand a submersion in water to 10 psi. The valve shall open by counterclockwise rotation of a 2-inch square AWWA operating nut.

- The operator shall be capable of meeting the torque requirements for opening and closing the valve against:

  -- 150 psi upstream and 0 psi downstream pressure.

  -- Maximum inlet-outlet flow rate of 12 FPS, normal flow rate of 6 FPS, and shall be provided with AWWA stops capable of absorbing up to 300 foot-pounds of input torque without damage to the valve or operator.

- Butterfly valves shall have Buna N seat bonded or mechanically retained, without use of metal retainers or other devices located in the flow stream, to the body and have a disc seating edge of nichrome or stainless steel. All internal mountings or working parts shall be stainless steel.

- Butterfly valves shall have the shaft V-type self-adjusting packing. The shaft shall not be exposed between the valve body and the operator.

- Butterfly valves shall be furnished with records of tests specified in AWWA C504, Section 2.3 and Section 5. All valves shall be furnished with Certified drawings and parts list of the valve and operator. An affidavit of compliance to AWWA C504 shall be furnished for all valves. Five (5) sets of the above information shall be furnished to the District.

- Butterfly valves shall have their internal and external surfaces (except flange faces, stainless steel, and rubber surfaces) epoxy coated, to meet all requirements of AWWA C550. All butterfly valves shall be lined (holiday

free) with a minimum of 10 mils (2-5 mil coats) of Keysite 750, (white); or DeVoe Bar-Rust No. 235 (white). The epoxy lining shall be applied at the valve manufacturer's plant in accordance with the coating manufacturer's application specifications.

- Approved butterfly valves shall be produced by a "District Approved Manufacturer".

9. COPPER TUBING

Copper tubing shall conform to the requirements of the "Specifications for Seamless Copper Water Tube" (ASTM Designation B88) and shall be Type K. As required by the District, copper tubing shall be installed with a 6 mil (minimum) polyethylene sleeve "Polywrap C" by Northtown Company or District approved equal.

10. BLACK STEEL PIPE

Black steel pipe shall conform to the requirements of the ASTM A53/A53M and shall be "Standard Weight" (Type S) unless otherwise designated. Black steel pipe shall not be cement-mortar lined, for sizes up to 3" diameter but shall have fusion bonded epoxy lining and coating. Pipe/fittings sizes 4" and greater shall be cement mortar lined and outside cement mortar coated; cement mortar lined and outside bare; or bare steel, as designated on the Drawings or Specifications.

Unless otherwise shown, black steel pipe, 3 inches in diameter and smaller, shall be joined with malleable iron screwed fittings. Black pipe 4" and greater shall be joined with standard weight welding fittings produced by a "District Approved Manufacturer".

11. RED BRASS PIPE

Brass pipe and fittings shall conform to the requirements of the "Specifications for Seamless Red Brass Pipe, Standard Sizes" (ASTM Designation B43). As required by the District, brass pipe shall be installed with a 6 mil (minimum) polyethylene sleeve "Polywrap C" by Northtown Company or District approved equal.

12. STAINLESS STEEL PIPE

Stainless steel pipe shall be Type 316 welded, fully finished, and shall conform to the "Specification for Seamless and Welded Austenitic Stainless-Steel Pipe (ASTM A312/A312M).

13. INSULATING UNIONS

Where dissimilar pipe materials are joined, suitable insulating unions shall be installed. Insulating unions shall be produced by a "District Approved Manufacturer".

14. PRESSURE GAUGES

Except as otherwise provided in these specifications, pressure gauges shall be 4-inch diameter dials, liquid filled, AISI 316 stainless steel case, have stainless steel elements, and 1/2-inch bottom connection. Accuracy shall be 0.5% of full scale. In all cases the normal operating pressure of the system to which the gauge is attached shall be within the middle 1/3 of the gauge range. Gauges shall read in pounds per square inch for pressure. Gauge shall be produced by a “District Approved Manufacturer."

15. PRESSURE REGULATING VALVES

A. General

Regulating valve shall be a diaphragm actuated, single seated, hydraulically operated globe-type valve. The valve body shall be ductile iron or stainless steel. It shall have two operating chambers sealed from each other by a flexible synthetic rubber fully supported diaphragm. The valve disc shall be resilient with a rectangular cross section and shall be retained on three sides. Valve bodies and all necessary parts shall be of a size and type suitable for use with pressure as specified and include all necessary fittings for correct pilotry and connections. The model numbers shall be as indicated on the Drawings.

Regulating valves shall be subject to hydrostatic test of not less than twice the maximum pressure rating. Pressure rating (Class) shall be as indicated on the Drawings.

B. Pump Control Valves

Control of valve operation shall be by means of an externally mounted, four-way, solenoid pilot valve. Self-cleaning strainers shall be used to protect the control system. Valve shall utilize line pressure for operation. A Limit-switch shall be installed to be adjustable over entire valve travel. Valve shall be equipped with a built-in lift type check feature to prevent reverse flow. It shall operate independently of the solenoid control. Solenoid valve shall operate on 120 VAC.

C. Pressure Relief Valves

The Pressure Relief Valve shall maintain constant upstream pressure by by-passing or relieving excess pressure and shall maintain close pressure limits without causing surges. The diaphragm assembly containing a valve stem shall

be fully guided at both ends by a bearing in the valve cover and an integral bearing in the valve seat. This diaphragm assembly shall be the only moving part and shall form a sealed chamber in the upper portion of the valve, separating operating pressure from line pressure. The diaphragm shall consist of nylon fabric bonded with synthetic rubber and shall not be used as a seating surface. There shall be no pistons operating the valve or pilot controls. All necessary repairs shall be possible without removing valve from the line. The pilot control shall be a direct-acting, adjustable, spring-loaded, diaphragm valve, designed to permit flow when controlling pressure exceeds spring setting. The pilot control system shall operate such that as excess line pressure is dissipating the main valve shall gradually close to a positive, drip-tight seating.

D. Rate of Flow Control Valves

The valve shall maintain a constant rate of flow regardless of fluctuations in upstream pressure. The diaphragm assembly containing a valve stem shall be fully guided at both ends by a bearing in the valve cover and an integral bearing in the valve seat. The diaphragm assembly shall be the only moving part and shall form a sealed chamber in the upper portion of the valve, separating operating pressure from line pressure. The diaphragm shall consist of nylon fabric bonded with synthetic rubber and shall not be used as a seating surface. There shall be no pistons operating the valve or pilot controls. All necessary repairs shall be possible without removing valve from the line.

The pilot control shall be a direct-acting diaphragm valve designed to close when the actuating differential increases beyond the spring setting. The actuating differential pressure shall be produced by a thin-edge orifice plate installed in an orifice flange located downstream of the valve.

E. Pressure Reducing/Pressure Sustaining Valves

This valve shall maintain a constant downstream pressure regardless of fluctuations in demand. When the upstream pressure becomes equal to the spring setting of the pressure sustaining control, the valve throttles to maintain a constant inlet pressure. If the downstream pressure is greater than the upstream pressure the valve closes automatically to prevent return flow.

The diaphragm assembly containing a valve stem shall be fully guided at both ends by a bearing in the valve cover and an integral bearing in the valve seat. This diaphragm assembly shall be the only moving part and shall form a sealed chamber in the upper portion of the valve, separating operating pressure from line pressure. The diaphragm shall consist of nylon fabric bonded with synthetic rubber

and shall not be used as a seating surface. All necessary repairs shall be possible without removing valve from the line.

The pressure reducing pilot control shall be a direct-acting, adjustable, spring-loaded, normally open diaphragm valve, which closes when downstream pressure exceeds the spring setting.

The pressure sustaining pilot control shall be a direct-acting, adjustable, spring-loaded, normally closed diaphragm valve which opens when upstream pressure exceeds the spring setting. The control system shall include a strainer orifice assembly and an adjustable opening speed control.

F. Altitude Valves

The altitude valve shall maintain a constant downstream pressure regardless of fluctuations in demand and shall also close tight when a pressure reversal occurs. It shall be a hydraulically-operated, pilot-controlled, diaphragm type globe or angle valve. The main valve shall have a single removable seat and a resilient disc. The stem shall be guided at both ends by a bearing in the valve cover and an integral bearing in the valve seat. No external packing glands are permitted, and there shall be no pistons operating the main valve or any pilot controls.

The pilot control shall be a direct-acting, adjustable, spring-loaded, normally open diaphragm valve, designed to permit flow when controlled pressure is less than the spring setting.

A system of auxiliary check valves shall be used to admit downstream pressure into the main valve cover chamber if pressure reversal occurs. This must result in positive closing of the main valve.

G. Coatings

All regulating valves shall have all wetted ferrous parts epoxy coated. The epoxy shall be thermo-setting, approved for potable water.

All coated surfaces shall be coated with 12 miles of fusion bonded epoxy and be visually and electrically examined for defects. The coating shall be holiday free with a low voltage wet sponge test per AWWA C550.

H. Options

Additional required options to be furnished with the valves shall be indicated on the Drawings utilizing the appropriate model numbers and/or catalog designations.

16. FLOW METERS

A. Service Flow Meters

Service flow meters for 5/8" through 1" diameters shall be displacement type, cold-water meters in accordance with AWWA C700, Latest; produced by a "District Approved Manufacturer". Service flow meters for 1 1/2", 2", and 3" diameters shall be turbine type cold-water meters in accordance with AWWA C701, latest; produced by a "District Approved Manufacturer". Service flow meters 4" diameter and larger shall be produced by a "District Approved Manufacturer" with all bronze turbine by-pass meter. All meters shall be equipped with Radio Reads.

Unless otherwise specified on Drawings and/or on the Bidding Sheet, subsequent to payment of fees and the purchase of the meters through the District, the District will furnish all service meters that are less than or equal to 3" diameter for installation by the Contractor. Meters 4" diameter and larger shall be furnished and installed by the Contractor in accordance with District Standards and Specifications.

The Contractor shall make all connections to the District side and private side of the meters, provide all excavation, and backfill, and surface restoration, furnish all required fittings, adapters, and piping necessary to make the connections. All costs for the work and materials shall be included in the appropriate bid items.

17. NO-OX-ID

For specified outside wrapped steel pipeline and/or where specifically directed by the District, outside pipe coating shall be NO-OX-ID special protective metal coating and wax.

18. PRECAST CONCRETE VAULTS

All precast concrete manhole sections shall be manufactured in a plant especially designed for that purpose. All units will conform to the design shown on the drawings, and all work shall be conducted under strict plant controlled supervision.

Design loads shall consist of dead load, live load, impact, and in addition, loads due to water table, and any other loads which may be imposed upon the structure.

Live loads shall be for H-20 and/or H-20-S16 per AASHTO Standard Specifications for Highway Bridges with revisions. Design wheel load shall be 16 kips. The live load shall be that loading which produces the maximum shears and bending moments in the structure. All reinforcing steel shall be intermediate or hard grade billet steel conforming to ASTM A615/A615M/A706/A706M. Bars other than 1/4" round, or smaller, shall be deformed in accordance with ASTM A615/A615M.

All vaults shall have a 2-piece torsion hinged cover specified for traffic loads where required. The effort necessary to lift the cover shall not exceed OSHA requirements. Cover shall be provided with a 6" x 6" meter reading lid located directly over the meter register. Also, cover shall be provided with a safety chain capable of limiting the travel of the cover. Precast sections shall be joined with a plastic joint sealing compound. The preformed cold-applied ready-to-use plastic joint sealing compound shall be produced by a "District Approved Manufacturer".

Vaults shall be located outside of sidewalk areas. The dimension from the top of the vault to the centerline of the piping within the vault shall not exceed 5'.

19. FUSION BONDED EPOXY COATING

Wherever fusion-bonded epoxy coating is specified on steel piping or equipment for potable water, the coating system shall consist of one coat of Scotchkote 134; Tnemec Series 104 or District approved equal. Minimum dry film thickness shall be 12.0 mils. Surface preparation shall be SSPC-10. Coating shall be in accordance with NSF-61. Method of application shall be electrostatic spray method heat fusion per coating manufacturer’s specifications.

Submit manufacturer's data sheets for review and approval, including method of application; minimum and maximum DFT; recommended surface preparation; application instructions and curing requirements; etc.

20. NSF COMPLIANCE

All materials in contact with domestic water shall comply with the applicable provisions of California Title 22 Regulations Related to Drinking Water, including NSF 60 and 61 certifications; all at no additional cost to the District. Additionally, Contractor shall provide the District with a written “Affidavit of Compliance” with the California Drinking Water Regulations as part of the submittal approval process. District will provide copies

of the Contract Documents and related project information to the California Department of Public Health for their approval.

21. PIPE SUPPORTS

Pipe supports shall be adjustable for pipeline products PSG series pipe supports or District approved equal. Pipe support shall be painted with primer and two (2) coats of paint per District Specifications. The pipe and saddle shall be separated by 1/8-inch thick Neoprene Rubber.

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BASIC SPECIFICATIONS

SECTION C

WATER PIPELINE CONSTRUCTION SPECIFICATIONS

1. WATER PIPE INSTALLATION

A. General

The Contractor shall furnish and install all water pipeline material required for the construction of the water pipeline and appurtenances as herein specified and shown on the Drawings. All pipeline material shall be installed per manufacturer's published recommendations and per the applicable published standards for the particular material being installed unless otherwise modified herein. In case of any conflict, the most stringent and highest requirement shall govern, and the Contractor shall adhere to said requirement, all at no additional cost to the District.

B. Installation

Pipe shall be accurately laid to alignment and grade shown on Drawings or established by District. Each section of pipe shall be lowered into trench in a manner that will prevent injury to pipe, coating, or joints and shall be carefully bedded to provide continuous bearing and prevent uneven settlement. Inside of pipe shall be clean and free from foreign material of any kind before being installed. Contractor will lay pipe units with bell ends in direction of laying, unless otherwise ordered by District or set forth in these Specifications and Drawings.

C. Handling

Contractor may find it necessary to move or haul pipe during progress of the work. Dropping or bumping of pipe will not be permitted, and all damaged pipe will be rejected. Rejected pipe may be repaired if permitted by District, and such repairs shall be subject to approval of District. If pipe is damaged beyond repair through Contractor's hauling or moving program, Contractor shall, at the Contractor's own expense, replace the pipe. After District and/or material supplier has delivered pipe to Contractor in good order and condition on the job, it shall be Contractor's responsibility to keep it in good condition, and the Contractor shall repair or replace, at the Contractor's own expense, any pipe damaged from any cause after delivery.

Contractor shall take all necessary precautions to prevent pipe from floating due to water entering trench from any source, shall assume full responsibility for any damage due to this cause, and shall, at the Contractor's own expense, restore and replace pipe to its specified condition and grade if it is displaced due to floating. Contractor shall maintain inside of pipe free from foreign materials and in a clean, sanitary condition until its acceptance by District.

At all times when work of installing pipe is not in progress, all openings into pipe and ends of pipe in trench shall be tightly closed to prevent entrance of animals and foreign materials.

D. Joints (CML/CMC Pipelines)

(1) Type of Joints and Bonding Requirements

Water pipeline joints shall be constructed in accordance with District Standards. All rubber gasket joints shall be bonded (in the field) per District standard. Where indicated on the Drawing, Contractor shall install insulation flange kits in accordance with District requirements.

(2) Field Joints - Cement Mortar Lining

Mortar shall be Hubs all patch quickset non shrink commercial grout or a District approved equal packaged dry mortar mix consisting of one part cement and three parts sand. Quantity of water shall be sufficient so that when mortar is firmly compressed into a ball shape, it will hold its shape without slump. Mortar shall be mixed separately for each joint to be patched.

Special care should be taken to avoid damage to lining or coating during lowering pipe into trench.

(3) Field Joints - Cement Mortar Coating

Outside field joints are required to be coated with cement-mortar. This shall be accomplished by wrapping a canvas or paper diaper around the joint. The diaper is held on each side by steel strapping. Cement mortar shall be composed of 1 part cement and not more than 3 parts sand and mixed to a consistency of thick cream. The top of the pour must be covered with a protective material, such as cloth or paper.

E. Curved Alignment

Laying pipe on curved alignment with unsymmetrical closure of spigot into bell rings shall be permitted as recommended by pipe manufacturer. For the purpose of reducing angular deflection at pipe joints and for closure sections, Contractor shall be permitted to install pipe sections of less than standard length.

Closing courses and short sections of pipe shall be fabricated and installed by Contractor as found necessary in the field. Where closing pieces are required, Contractor shall make the necessary measurements and shall be responsible for their correctness.

F. Manufacturer Access

Pipe manufacturer shall have free access to the work during laying operations and testing. Any improper act on the part of Contractor which pipe manufacturer may observe shall be reported to District.

G. Allowable Variations in Pipeline Alignment

The pipeline alignment, as shown on the Plans, was determined from record land net data and interference information obtained from contacting the various utilities, along with conducting a field check during design. After the award and prior to the commencement of construction, it will be necessary to review the pipeline alignment shown on the Drawings, just prior to Contractor's trenching for verification of field conditions regarding interference facilities. Contractor and, Engineer and District shall field-review each section of the proposed pipeline to verify the alignment for trenching purposes. The specifications provide that the District may vary pipe alignment (ALL AT NO ADDITIONAL COST TO THE DISTRICT).

H. Pipeline Cover

Pipeline cover as shown on the attached Standard Drawings and/or the Design Drawings, is hereby defined to be Design Cover over pipeline. Therefore, should field conditions determined at time of construction show that any pipe grade changes are required, District reserves the right to authorize said changes in pipeline grades, and Contractor shall trench and lay pipeline accordingly, ALL AT NO ADDITIONAL COST TO THE DISTRICT.

All pipeline within public roadways shall be installed with no less than 48" of cover below road grade (or projected existing road grade, in case of embankments) unless otherwise shown on the Drawings or approved by the Engineer.

I. PVC Waterlines

(1) Bedding Pipe

Each section of pipe shall be lowered into the trench in a manner that will prevent injury to the pipe, or joints and shall be carefully bedded to provide continuous bearing and prevent uneven settlement. The inside of the pipe shall be clean and free from foreign material of any kind before being installed.

For PVC pipe and ductile iron pipe with mechanical joints, the gasket shall be placed in the groove of the bell. Lubricate the spigot end into the bell and force into position per manufacturer's recommendation.

(2) Laying and Jointing PVC C900 & C909

Trenches shall be in a reasonably dry condition when the pipe is laid. Necessary facilities shall be provided for lowering and properly placing the pipe sections in the trench without damage. The pipe shall be laid carefully to the lines and grades given and the sections shall be closely jointed to form a smooth flow line. Where no grades are given, pipe shall be laid in a smooth continuous grade between connections to other mains, blowoffs and/or air release valves with a minimum cover of 48”. Immediately before placing each section of pipe in final position for jointing, the bedding for the pipe shall be checked for firmness and uniformity of surface.

(3) Field Hydrostatic Test (PVC)

For convenience of testing, the pipeline may be divided into sections and each section tested separately. All pipe shall be tested to the pressure rating of the pipe and not less than the pipe’s pressure rating:

- C900 PVC Class 235 Test Pressure: 235 psi
- C900 PVC Class 305 Test Pressure: 305 psi
- C909 PVC Class 235 Test Pressure: 235 psi
- C909 PVC Class 305 Test Pressure: 305 psi

If any leakage is evidenced in the testing of the pipeline, the various sections of the pipeline shall be isolated for testing between available valves, or between bumpheads located as approved by the District. The maximum allowable leakage for PVC pipe shall be six (6) gallons per day per mile of pipe per inch of pipe inside diameter. If the leakage exceeds this amount, the section being tested will be considered defective. The Contractor shall determine the points of leakage, make the necessary repairs and perform another test. This procedure shall be continued until the leakage in each section falls below the allowable maximum for that section of pipeline.

Leakage shall be determined by metering the water injected into the pipeline while under the required pressure. The Contractor shall submit to District before and after the test the gate and meter used so that these devices may be tested by District.

The Contractor shall provide all calibrated meters for measurement of leakage, all bumpheads or skillets, piping, calibrated gages, pumps and other equipment, all water not furnished by District, and all power and labor necessary for the performance of pressure tests satisfactory to the District. The Contractor shall furnish all necessary equipment and labor to fill each section of pipeline tested and for pumping the water from one test section to another as may be necessary for obtaining and maintaining the required water pressure and for filling the entire pipeline with water after the conclusion of the testing, as hereinafter provided.

The Contractor, at the Contractor's own expense, shall do any excavation necessary to locate and repair leaks or other defects which may develop under test, including removal of backfill already placed, shall replace such excavated material, and shall make all repairs necessary to meet the required water tightness after which the test shall be repeated until the pipe meets the test requirements. All tests shall be made in the presence of the District. After the pipe has successfully met all test requirements specified herein, the entire pipeline shall be filled with water and so maintained until the completion of the contract unless otherwise ordered by the District.

(4) Thrust Restraint

Thrust restraint shall be accomplished by the use of restrained joints as specified herein. Thrust blocks will not be allowed for PVC pipelines.

(5) DI Fittings

Fittings shall be ductile iron and shall conform to ANSI A21.10 (AWWA C110) or A21.53 (AWWA C153), and ANSI A 21.11 (AWWA C111). Fittings shall be bolted mechanical joints or push-on joints unless otherwise indicated on the plans, bid items, or special provisions. Short body type fittings conforming to AWWA Standard C153 may be used for sizes 4-inch through 24-inch. Fittings shall be tar (seal) coated and cement mortar lined per ANSI A21.4 (AWWA C104). Above grade fittings shall be flanged and from the list of approved manufacturers.

Fittings up to 24-inch size shall be 350 psi pressure ratings and over 24-inch size shall be 150 psi pressure rating. Fittings shall be cement mortar lined in accordance with AWWA Standard C104, “Cement Mortar Lining for Ductile-Iron Pipe and Fittings for Water”.

All ductile iron fittings shall be polyethylene encased at the time of installation. Polyethylene encasement and installation shall be in accordance with ANSI/AWWA C105.

(a) MECHANICAL JOINTS

Mechanical Joints shall conform to the requirements of AWWA Standard C111 “Rubber-Gasket Joint for Ductile Iron Pressure Pipe Fittings”. Glands shall be made of ductile iron.

(b) FLANGED FITTINGS

Flanged fittings shall conform to the requirements of AWWA Standard C110 or C153. Flanges shall be drilled to ANSI B16.1, 125 lb. standard bolt template. The 250 lb. flanges, when required shall be drilled to ANSI B16.1, 250 lb. standard bolt template.

(c) GASKETS

Gaskets for flanged fittings shall be either ring or full-faced, 1/8-inch thick, vulcanized styrene butadiene rubber (SBR) or Neoprene rubber gaskets. The full-faced gaskets shall extend from the inside diameter of the flange to beyond the outside edge of the bolt holes. Use ring type gaskets for 14-inch and larger sizes. Whenever blind flanges are shown, the gasket shall consist of 1/8-inch thick SBR or neoprene rubber sheet which shall cover the entire inside surface of the blind flange and shall be cemented to the surface of the blind flange. In lieu of rubber gasket, the 1/16-inch polytetrafluoroethylene (PTFE) GORE-TEX GR sheet gasketing material, applied full-faced, is an approved equal.

(d) BOLTS AND NUTS FOR MECHANICAL JOINTS FLANGED FITTINGS

Tee-head bolts and hexagonal nuts for all mechanical joints shall be high strength, low alloy steel, meeting the current provisions of American National Standard ANSI/AWWA C111/A21.11, “Rubber-Gasket Joints for Ductile Iron Pressure Pipe and Fittings”, and must be Cor-Ten as manufactured by NSS Industries, or approved stainless steel tapping sleeves are allowed, however, the Contractor shall strictly follow the torque limitations and shall use Anti-Cease as manufactured by Loc-Tite or approved equal with the stainless steel nuts and bolts.

Hexagonal bolts, nuts, and washers for flanged fittings shall be zinc plated, high strength, low-carbon steel conforming to the chemical and mechanical requirements of ASTM A307, Standard Specification for Carbon Steel Bolts and Studs, 60,000 psi Tensile Strength, Grade A.

All exposed nuts and bolts shall be coated after assembly with an approved mastic as described in Section 2-09.01. Threads shall be showings beyond the installed nuts and correct size (diameter) bolts shall be used in all installations.

(6) THRUST RESTRAINING MATERIALS

All mechanical thrust restraining devices shall be ductile iron designed to withstand a working pressure of at least 250 psi with minimum safety factor of two and the heat treat hardened restraining mechanism shall consist of wedges which, when activated, impart a multiple wedging action against the pipe.

(a) MECHANICAL JOINT FITTINGS

Restraining devices for mechanical joint fittings shall be incorporated with design of the follower gland and shall include a restraining mechanism which when activated, imparts multiple wedging action against the pipe, increasing its resistance as the pressure increases. The joint shall maintain flexibility after burial. Glands shall be manufactured of ductile iron conforming to ASTM A536. The mechanical joint restraint shall be MEGALUG as manufactured by EBAA Iron, Inc., Uni-Flange Series 1400 as manufactured by Ford Meter Box, Inc, or approved equal.

(b) FLANGE ADAPTERS

Flange Adapters shall be manufactured from ductile iron per ASTM A536 and shall have bolt circles and bolt holes to meet ANSI B16.1 – Class 125 or Class 250 if required and shown on the plans. Flange Adapters shall be manufactured by EBAA IRON, Inc., Uni-Flange by Ford Meter Box Company, Inc., Tyler Corporation, or approved equal.

J. Measurement and Payment

(1) Pipe

Contractor shall understand that pipeline lengths are approximate and are to be used for establishing unit bid prices and extensions for comparison of bids. UNLESS OTHERWISE STATED IN THE "SPECIAL REQUIREMENTS", all payments shall be based upon said unit bid prices applied to the net centerline pipeline length (station difference - or length shown on drawings) installed by Contractor and shall include all specials, tees, bends, fittings, etc., except when shown otherwise on Bidding Sheet.

The District shall approve pipeline length used for payment purposes. The District reserves the right to increase or decrease the amount of pipeline indicated on Drawings and Bidding Sheet, with no change in Contractor's unit bid price.

Contractor shall include under pipeline unit bid prices, all costs to completely perform all contract work, including but not limited to, the construction of thrust blocks, locator wire along non-metallic pipelines, shoring methods and materials, and supplying barricades or other safety devices, except costs which are specifically required to be included under separate bid item numbers on Bidding Sheet.

(2) Pipeline Appurtenances

All pipeline appurtenances, including air valve installations, blowoff installations, fire hydrant installations, main line valve installations, side outlet valve installations, blind flange installations, valve marker installations, guard post installations, slope protection cut-off wall installations, slope protection cut-off ditch installations, pedestal mounted terminal housing installations for direct burial cable used and for cathodic protection use, specified connections, specified appurtenances, etc., are shown in detail on Standard Drawings attached in back of these Specifications or are described in the Specifications and/or Drawings. Contractor shall understand and agree that District may elect to eliminate all or a portion of said installations and that the Contractor shall receive payment in amount bid therefore, only for those installations the Contractor actually constructs.

2. WELDING SPECIFICATIONS

A. General

All welding operators shall be qualified under the Standard Qualification Procedure of the American Welding Society and all applicable provisions of the latest edition of "Structural Welding Code" (ANSI/AWS D1.1) published by the American Welding Society are incorporated into this Specification. Contractor shall adhere to all Cal-OSHA, American Welding Society, American National Standards Institute and local agency safety regulations (including fire) regarding all welding operations.

The District shall have the right at any time to call for and witness making of test specimens by any welder in accordance with these Specifications, and the expense of such tests shall be borne by Contractor.

The provisions of these sections do not apply to the fabrication of pipe or special fittings in conflict with AWWA Standard Specifications for pipe.

All hand welding in both shop or field shall be done by welders certified in accordance with ASA B31.1 latest (AWWA C206-latest).

All welds shall be made by an electric shielded arc method of welding.

Plates shall be held in correct position. Abutting edges shall be properly prepared. Each deposited layer of welded metal shall be thoroughly cleaned before additional metal is applied to its surface. Finished weld bead shall be central to the seam, and the finished joint shall be free from depressions, undercut edges, burrs, irregularities resulting from welding, other than normal bead necessary.

All welds shall be a type that will produce complete fusion with base metal and shall be free from cracks, oxides, and gas pockets within the limits set forth under these Specifications. If the automatic welding machine does not obtain a fusion weld that will penetrate through to the inside of the pipe and protrude beyond the contour of the plate surface, an inside pass shall be made in the root of the groove on the inside of the pipe. Chipping out of the weld in the root of the groove will be required when deemed necessary by the District.

If welding is stopped for any reason, special care shall be taken when welding is resumed to obtain complete penetration between welded metal, plate, and welded metal previously deposited, and if flux is used, it must be redistributed before work is resumed.

The height of the outside weld bead above the contour of the plate surface shall be measured and shall be not less than 1/16-inch. Heights of the outside weld bead above the contour of the plate surface exceeding l/8-inch shall be removed by grinding or chipping.

Welds found deficient in dimensions but not in quality shall be enlarged by additional welding after thorough cleaning of the surface of previously deposited metal and adjoining plate. However, if work performed since making a deficient weld has rendered the weld inaccessible or has caused new conditions which would make such reinforcement dangerous or ineffective, the original conditions shall be restored by removal of welds, members, or both, before enlarging the deficient weld, or the deficiency shall be compensated by additional work as prescribed by the District.

Welds considered by the District to be deficient in quality or made contrary to any mandatory provision of these Specifications shall be removed by chipping or melting and shall be remade. The weld metal shall be removed throughout its depth to expose clean base metal, but if a strictly local deficiency, the weld need not be removed throughout its entire length, provided that sufficient amount shall be removed to insure that sound weld metal only remains. A cracked weld shall be removed throughout its length.

When removing part or all of a weld by cutting or chipping, such cutting or chipping shall not extend into the base metal beyond the depth of weld penetration. When removing part or all of a weld by melting, care shall be taken not to burn or otherwise injure the base metal. After the melting operation, burned metal shall be removed to clean, sound metal.

Overheated weld metal and any overheated base metal adjoining same shall be removed and replaced by new weld metal properly applied. However, if the plate is so badly or extensively injured by overheating that it cannot satisfactorily be replaced by weld metal, such additional work as prescribed by the District shall be performed, all at the Contractor’s own expense, with no additional compensation.

All longitudinal, spiral, and girth seams of straight pipe sections, and special sections when practicable, shall be welded with an automatic welding machine. If requested, sample welds shall be submitted to the District for testing in accordance with these Specifications. Approval of such tests shall be required prior to welding of pipe.

Hand welding will be permitted only when it is impracticable to use an automatic welding machine.

Fillet welds shall have full penetration into the corner. Excessive cutting back of the edges of fillet welds is a defect and shall be repaired. Butt welds shall be made by adding weld metal to both sides of the joint, and the underside of the weld in groove shall be chipped out, removing all slag and unsound metal, containing a clean surface for the application of weld metal; in making butt and fillet welds, weld metal shall be deposited in successive layers, so there will be as many passes as there are complete multiples of 1/8-inch in the plate thickness, provided there shall be a minimum of two passes.

B. Field Welded Pipe Joints

Welded field joints in steel pipe shall be lap welded unless otherwise shown. Welders shall be certified in accordance with the American Standard Code for Pressure Piping (ASA B31.l) or the "Standard for Field Welding of Steel Water Pipe Joints" (AWWA C206). The welding of each such field joint shall be performed at a time when the temperature is approximately the lowest during the 24-hour day, and after at least 150 linear feet of pipe have been laid and the joints have been welded ahead of said joint. In all hand welding, the metal shall be deposited in successive layers so that there will be at least as many passes or beads in the completed weld as indicated in the following table:

Plate Thickness Inches	**Fillet Weld Minimum Number of Passes**
3/16	2
1/4	2
5/16	3
3/8	3
13/32	3
7/16	4
15/32	4
1/2	4
More than 1/2	1 for each 1/8 of an inch

Each pass, except the final one shall be thoroughly bobbed or peened to relieve shrinkage stresses and to remove dirt slag, or flux, before the succeeding bead is applied. Each pass shall be thoroughly fused into the plates at each side of the welding groove or fillet, and shall not be permitted to pile up in the center of the weld. Under-cutting along the side will not be permitted.

3. PAINTING SPECIFICATIONS

The Contractor shall provide all labor, material, and equipment necessary for completion of all painting work specified in these Specifications and Drawings.

The Contractor shall deliver all painting materials to the work site in the original containers with seals unbroken and unmutilated and with labels attached. All paints and coatings shall be in compliance with all South Coast Air Quality Management District requirements including volatile organic chemicals (VOC). Containers shall not be opened until after they have been inspected by the District.

Material for prime coat shall be produced by a "District Approved Manufacturer".

Material for finish coat shall be automotive grade synthetic industrial enamel, produced by a "District Approved Manufacturer" unless specifically stated otherwise in these Specifications or Drawings.

The Contractor shall submit a color chart to the District, who will select the finish colors.

All work shall be done by thoroughly qualified painters in a neat, workmanlike manner. All work which shows carelessness or lack of skill in the execution or is defective due to any other cause will be rejected and repainted to the satisfaction of the District, at the expense of the Contractor.

Unless otherwise specified, paint shall be applied by brush or spray.

Paint shall be applied only on thoroughly clean, dry surfaces. Paint shall not be applied in extreme heat, cold, damp, or humid weather or in dust or smoke-laden air.

All exposed iron and steel work, including piping and valves, etc., shall be prime painted at the shop. After installation, said materials shall be cleaned and all welds, tool marks, etc., shall be touched up with primer and given two coats of finish enamel.

Prepared material shall be used without cutting or addition of any material whatsoever, except as directed by the manufacturer and approved by the District. Each coat must be thoroughly dry before application of the next coat.

If brushes are used, they shall have sufficient body and length of bristle to spread the paint in a uniform coat. Paint shall be evenly spread and thoroughly brushed out and with no residual brush marks remaining. On surfaces which are inaccessible for brushing, the paint shall be applied by spray or by sheepskin daubers or other means necessary to obtain a proper thickness of paint as approved by the District.

If a spray method is used, the operator shall be thoroughly qualified in the use of the equipment required. Air compressors employed in spray painting shall be equipped with a suitable trapping device to keep water, oil, and other impurities from entering the air lines. Runs, sags, thin areas, or other imperfections in the paint coat shall be considered as cause for rejection, and the Contractor shall be required to make all necessary corrections to the satisfaction of the District.

Paint materials shall be kept sealed or covered when not in use. Oily rags or waste shall be kept in covered containers and disposed of at frequent intervals.

The Contractor shall be held responsible for protecting freshly painted surfaces from accumulation of dust, dirt, water, or other foreign materials, whatever the cause or source. Any damaged surfaces shall be wiped clean, sanded, or stripped to a clean, dry condition and repainted to the satisfaction of the District.

The Contractor shall protect all parts of the work site against disfigurement by Contractor's operations. Tarps and cloths shall be placed where required to protect floors and equipment from spatter and droppings. Electric switchplates, lighting fixtures, hardware, glass, vehicles, etc., shall be removed, covered or otherwise protected from disfigurement by the painting operations. The Contractor shall clean or otherwise restore any spattered surfaces to the satisfaction of the District.

4. CONCRETE WORK

A. General

Concrete shall be composed of portland cement, natural aggregates, and water proportioned to produce required strength and well mixed into required consistency.

Portland cement concrete for thrust blocks, cradles, encasements, and structures shall be composed of portland cement, fine aggregate, coarse aggregate and water proportioned and mixed in accordance with the requirements of Section 90 of the State of California Department of Transportation Standard Specifications, except as may be herein modified.

Concrete for cradles and encasements, and all other concrete structures, shall be constructed to the lines and grades and in accordance with the design shown in the details on the plans.

Prior to placing any concrete, the Contractor shall submit to the District the design mix proposed to be used. Said mix shall set forth the weights of cement, sand, coarse aggregate and the amount of water to be used. (Source of supply shall also be

furnished to the District.) The proposed mix shall be approved by the District prior to placing any concrete.

B. Portland Cement Concrete Classification

Concrete Class	Compressive Strength @ 28 days (psi)	Sacks of Cement/CY
"A"	3,500	6
"B"	2,500	5
"C"	2,000	4
"D"	4,000	7

The amount of free water used in concrete shall not exceed 312 pounds per cubic yard, plus 20 pounds for each required 100 pounds of cement in excess of 564 per cubic yard.

5. PAVEMENT REMOVAL AND REPLACEMENT

A. General

Pavement removal and replacement for all public roads, including aggregate base and temporary paving where required, shall comply with all the requirements of the agency issuing the Encroachment Permit. In roads established under formation of a special road district, the specifications of the Encroachment Permit shall apply. Any private roads and streets, including driveways, in which the surface is removed or damaged, shall be restored to the original grade and crown by the Contractor. Removed or damaged sections shall be restored with the type of improvements (or better) conforming to that which existed at the time the Contractor entered upon the work.

It shall be the responsibility of the bidder to satisfy themself as to the existing pavement sections prior to submitting their bid.

Full compensation for temporary and permanent resurfacing, including the replacement of base material as required, shall be included in the unit bid price for pavement removal and replacement per linear foot of mainline trench. Any required pavement removal and replacement for services, fire hydrants, air

valves, or other appurtenances shall be considered included in the bid price for the various items, and no additional compensation shall be made therefore.

B. Pavement Cutting

Pavement shall be saw cut to a straight edge parallel to the pipe alignment prior to excavation. Method of pavement cutting shall be as specified by the Agency having jurisdiction. Under no circumstances shall excavation be started prior to scoring of pavement. If the adjacent pavement is disturbed during the Contractor's operation, the pavement shall be recut on a straight line to remove the damaged pavement before resurfacing. Portland cement concrete pavement and sidewalk shall be saw cut. Pavement cutting shall be considered included in the bid price for pavement removal, disposal, and replacement, and no additional compensation shall be made therefore.

C. Permanent Trench Pavement

The permanent trench pavement shall be in accordance with the Agency having jurisdiction. If not specifically addressed by the road agency's permit, the existing pavement shall be saw cut and the permanent trench base paving shall be constructed to be flushed with existing so that the asphalt concrete is smooth, true to grade and cross section thus providing an even driving surface without undulations. The completed base paving surface shall be provided as described herein whether an asphalt concrete cap is specified or not specified. Should an asphalt concrete cap be required, Contractor shall grind down the base paving prior to placement of the A.C. cap.

D. Asphalt Concrete Cap

Where required by the agency issuing the Encroachment Permit or other agency having jurisdiction, an asphalt concrete cap shall be placed along the length of the trench. The installation of the asphalt concrete cap shall be in accordance with the specifications and policies of the agency having jurisdiction. Where the asphalt concrete cap is not specifically stated in the applicable permit or on the drawings, and when directed by the District, the minimum cap shall be a grinded 0.10-foot thick, 12-foot wide section centered over the center of the trench, or the traveled way, and pulled with a "Barber Greene" or equivalent.

Full compensation for placement of asphalt concrete cap, where required, shall be included in the unit bid price per linear foot of mainline trench. Any required asphalt concrete cap for house connection laterals or other

appurtenances shall be considered included in the bid price for the various items, and no additional compensation shall be made, therefore.

6. STEEL FLANGES, BOLTS, NUTS AND GASKETS*

Flanges for steel pipe shall conform to requirements for ASA 150-lb. flanges and flanged fittings or ASA 300-lb. flanges and flanged fittings, as noted on Drawings. All flanges shall be forged steel welding-neck or slip-on flanges. Dimensions and drilling of flanges for steel pipe shall conform to ASA 150 or 300, respectively, steel pipe flanges and flanged fittings, and all flanges shall be attached with bolt holes straddling vertical axis of pipe, unless otherwise shown on Drawings. Flanges and their attachment to pipe shall conform to applicable requirements of latest edition of API-ASME Code for Unfired Pressure Vessels. Welding-neck flanges shall be bored to same inside diameter as adjoining pipe.

Bolts shall be heavy hexhead machine per ASTM A307, Grade B. Nuts shall be heavy hex and conform to ASTM A563 (ASME B18.2.2). Washers shall be provided on both nut and bolt sides and shall be of the same material as the nuts. Studs with nuts on both ends shall be furnished wherever close clearances make removal and replacement of fixed head bolts difficult. Bolts and studs shall be of such lengths that not less than two or more than four threads shall project through nut when nut is drawn tight. All bolts, studs, or cap screws used in tapped holes shall be of sufficient length to provide an engagement of length of threaded portion of not less than nominal diameter of bolt for steel nor less than one and one-half times the diameter for cast iron fittings.

Unless stainless steel nuts and bolts are used, each steel/iron type fitting below grade shall be equipped with one (1) sacrificial zinc anode cap per every 4-in diameter. Said cap shall be “protecto-cap” or District approved equal.

Slip-on flanges shall be welded along the inner seam surrounding the pipe diameter as well as along the outside pipe and flange interface.

Gaskets for flanged joints shall be 1/16 inch thick compressed non-asbestos sheet, produced by a "District Approved Manufacturer". Flat-faced flanges shall be provided with full face gaskets with bolt holes prepunched. Raised-face flanges shall be provided with ring gaskets.

7. ELBOWS, SIDE OUTLETS, TEES, BUTTSTRAPS, CROSSES

* Flanges shall be as per Specifications, except that at the option of the Contractor A.S.A. 150-lb. flanges may be changed to Class "E" steel plate flanges per Table 3 of AWWA C207-01.

For steel pipe, all elbows, side outlets, top outlets, tees, crosses, etc., shall be furnished by the Contractor and shall be shop fabricated in accordance with AWWA C208 (latest); except the minimum radius for all bends shall not be less than 2.5 times the nominal diameter of the pipelines. Whenever the Contractor must perform minor amounts of field fabrication, the Contractor will be required to do all fabrication in a manner such that the lining and wrapping/coating may be repaired by hand to a quality equal to the shop applied lining and wrapping/coating. Buttstraps, shearrings, etc. shall be per the applicable Standard Drawings, the Drawings, or applicable AWWA Standards or Manuals.

Service outlets shall be constructed in accordance with the Standard Drawing.

Wherever collar reinforcement is required, both the collar and the plain-end of the flanged x p.e. (plain-end) outlet shall be preshaped to mate with curvature of the main line pipeline, and both the collar and the flanged x p.e. (plain-end) outlet shall be welded into place.

All collar and wrapper reinforcing shall be in accordance with the Standard Drawing and with the following reinforcement guides:

A. District's Standard for Outlet Reinforcement.

B. Steel Pipe, Design and Installation, AWWA Manual M-ll, latest.

C. An equal pipeline manufacturer's reinforcing guide, as approved by Engineer.

D. API-ASME Code for Unfired Pressure Vessels for Petroleum liquids and gases.

If case of conflict, the highest and most stringent standard shall govern.

8. TACKWELDED AND WELDED JOINTS - INSTALLATION

All rubber gasket joints shall be bond welded in accordance with the District standards, unless an alternate method is approved by the District.

The pipe manufacturer shall direct the Contractor on the method of welding the fully welded joints, or the cut-to-fit joints, in order that the joints shall not pull apart or leak when subjected to design pressures stated herein.

9. CONNECTIONS TO EXISTING WATER SYSTEM

Unless otherwise stated in the Special Requirements, Contractor shall furnish and install connections to the existing water systems at locations shown on Drawings**.** Prior to connecting to the existing water system, the Contractor shall "pothole" the connection location(s) and provide this information along with "Shop Drawings" of the proposed fitting(s) to the District for approval prior to the fabrication of said fitting(s). The Contractor shall perform all work required including any necessary field measurements, cuts-to-fit, temporary connections, and field fabrications to meet existing conditions.

Contractor shall install the proposed pipelines about 3' to 4' short of the connection points to the existing pipelines. Hydro-static/leakage tests SHALL NOT be performed against closed valves that separate the proposed system from the existing system.

Connections SHALL NOT be made between existing District pipelines and proposed pipelines until successful hydrostatic/leakage and disinfection testing of the proposed pipelines has been completed. Upon successful completion of the hydrostatic/leakage and disinfection testing and only upon approval by the District, final connections can be made to the existing pipelines. The pipeline material and appurtenances utilized to make the final connections shall be "swabbed" with a high strength chlorine solution. Minimum dosage in parts per million (ppm) to be determined by District.

The Contractor shall be fully responsible for providing all labor, materials, equipment to de–water existing pipelines to make the connections or for any other purposes as required. Compensation for such de–watering activities shall be made per various bid items and no additional compensation shall be made therefore. Contractor shall construct all said connections so that any down-time of existing water systems, due to connection work, shall occur during normal working hours as directed by District.

Contractor shall cooperate with District in scheduling said connections.

District will operate all existing valves necessary for Contractor to accomplish said connection work.

10. FILLING, TESTING, AND CHLORINATION

The Contractor shall fill all contract pipelines (through an approved and certified backflow device furnished by the Contractor) with construction water and may obtain said construction water through hydrants, blow-offs, etc.

The Contractor shall hydrostatically test all contract pipelines, as detailed in the Basic Specifications, to at least 150% of the specified pipe class.

The Contractor shall chlorinate all contract pipelines, as detailed in the Basic Specifications.

Payment by the District to the Contractor for all filling, testing, and chlorination work required under these Specifications SHALL BE INCLUDED IN THE BID PRICES FOR PIPELINE CONSTRUCTION PER THE BIDDING SHEET.

11. PROTECTION OF DOMESTIC WATER MAINS FROM CONTAMINATION

The Contractor shall protect all domestic water mains from contamination by any existing septic tank and/or leach line facilities, etc., which may be adjacent to the jobsite, and payment to the Contractor for any special construction required shall be made per the Extra Work Provisions of the General Conditions herein. Said special construction shall be approved by the District and the State Health Department.

12. FIELD HYDROSTATIC TEST AND LEAKAGE TEST

Upon completion of laying, joining, and backfilling, and after pipe lengths comprising the line ARE NOT LESS THAN 14 DAYS OLD, and prior to resurfacing, pipeline**,** including all appurtenances (e.g. fire hydrants, services, air valves, etc.…) shall be hydrostatically tested. Prior to performing the test, the section of pipeline to be tested shall be filled with water and placed under a slight pressure for at least 48 hours. Required test pressure shall then be applied and maintained for a 4-hour period. Water required to maintain test pressure shall be measured by meter or other means acceptable to District. Contractor shall provide all necessary thrust restraint required for the hydrostatic testing.

THE MEASURED LEAKAGE SHALL NOT EXCEED 10 GALLONS PER INCH DIAMETER PER MILE PER 24 HOURS. Should leakage exceed this amount, the section being tested will be considered defective and Contractor shall determine points of leakage, make necessary repairs, and conduct a second test. This procedure shall be continued until leakage equals or is less than the allowable minimum. Note: No leakage is allowed for welded steel pipe with fully welded joints.

Contractor shall provide calibrated meters for measurement of leakage, necessary bulkheads, piping, gauges, pumps, power, and labor, and do and furnish everything necessary for making all tests required, at the Contractor’s own expense, and shall furnish to District copies of all tests performed. The District will provide the pressure gauge to be utilized for pressure testing purposes.

All pipe shall be pressure tested to at least 150% of the pipe class rating; i.e. Class 150 = 225 psi test pressure, as measured near the low point of the section of pipe being tested.

The hydrostatic test shall be conducted on sections of pipeline as directed by District. CONTRACTOR SHALL RECEIVE NO ADDITIONAL COMPENSATION OTHER THAN THAT STATED IN BIDDING SHEET FOR TESTING LINES. CONTRACTOR SHALL PAY THE DISTRICT FOR INSPECTION TIME FOR ALL RETESTS.

Care shall be taken to see that all air vents are open during filling. After section has been completely filled, it shall be allowed to stand under slight pressure for a sufficient length of time to allow escape of air from any air pockets. During this period all fittings, specials, manholes, and connections shall be examined for leaks. If any are found, they shall be stopped, using a method approved by District. REQUIRED TEST PRESSURE SHALL THEN BE APPLIED AND MAINTAINED FOR THE 4-HOUR PERIOD. Contractor, at the Contractor's own expense, shall do all excavation necessary to locate and repair leaks or other defects which may develop under test, including removal of backfill already placed and shall replace such excavated material and shall make all repairs necessary to meet the required water tightness, after which test shall be repeated until pipe meets test requirements. ALL TESTS SHALL BE MADE IN THE PRESENCE OF DISTRICT OR THE DISTRICT'S REPRESENTATIVE. After pipe has successfully met test requirements, as specified, entire pipe shall be filled with water and so maintained until completion of the contract, unless otherwise ordered by District.

Pipe manufacturer and Contractor shall be responsible for any defects in materials and workmanship in manufacture and installation of pipe which may be revealed by such test and shall pay all costs of materials, labor, or other costs incidental to making necessary repairs or replacements resulting from such defects, in accordance with these Specifications.

13. DISINFECTING PIPELINES

Contractor shall furnish all equipment, labor, material, and water for proper disinfection of pipelines. Disinfection shall be accomplished by chlorination after lines have been tested for leakage but before they have been connected to existing system. Prior to chlorination, mains shall be thoroughly flushed out. The new mains shall be cleaned and flushed prior to disinfection. The flushing velocity to be obtained for pipes 12-inches and smaller in diameter shall not be less than 2.5 feet per second. The Contractor shall make the necessary arrangements to attain the minimum velocity. The Contractor shall take due precaution in providing for adequate drainage from the site.

Contractor shall submit filling, disinfection and flushing procedures to District for review. It is the responsibility of the Contractor to dispose of the flushed water from the project area. The Contractor is responsible for any damage as a result of flushing operations. This includes but not limited to: dechlorination of chlorinated water, obtaining written approval from adjacent property owners affected by flushing operations, safety, protection of storm drain inlets, etc. Contractor shall obtain discharge permit for De Minimus water flows from the California Regional Water Quality Control Board as detailed in these specifications.

The flushed water shall have a residual chlorine content not to exceed 0.10 mg/l prior to discharging into the storm drain system. The flushing operation shall be in accordance with the California Regional Water Quality Control Board requirements. Dechlorination prior to flushing is required. The cost of said dechlorination shall be the responsibility of the Contractor.

The Contractor shall provide adequate drainage from the site.

The entire pipeline, including all valves, fittings, hydrants, service laterals, and other accessories, shall be disinfected in accordance with the specifications provided herein.

A five percent (5%) concentration of hypochlorite disinfection solution shall be applied with a State certified chlorine injection device. Chlorinating agent shall be applied at locations selected by District and as prescribed by them. DOSAGE APPLIED TO WATER WITHIN PIPELINE SHALL BE AT LEAST 50 PPM.

Chlorinated water shall be retained in pipeline long enough to destroy all non-spore-forming bacteria. This period shall be at least 24 hours. After chlorine-treated water has been retained for required time, CHLORINE RESIDUAL AT PIPE EXTREMITIES AND AT OTHER REPRESENTATIVE POINTS SHALL BE AT LEAST 25 PPM. Pump bowl assemblies shall <u>not</u> be exposed to harmful chlorine dosages and/or detention times.

Following chlorination, all <u>disinfection</u> water shall be thoroughly flushed from the pipeline.

Should initial treatment fail to produce satisfactory disinfection of the pipeline as evidenced by the chlorine residual <u>and/or</u> the <u>bacteriological test results</u>, the chlorination procedure shall be repeated until acceptable results are obtained. Contractor shall use caution in discharging any highly chlorinated water, and shall be responsible for obtaining any necessary permission and permits from regulatory agencies. If required, the Contractor shall apply a reducing agent to the solution to

neutralize residual chlorine or chloramines remaining in the water at the Contractor's expense.

Bacteriological tests required by the Health Department shall be taken by the District, and conducted by a laboratory selected by and paid by the District (paid for by the Developer for private projects). All costs for any retesting that may be required shall be paid by the Contractor. All retesting shall conform to District requirements.

Unless otherwise specified herein, minimum requirements for disinfection and bacteriological testing of new pipelines shall be in accordance with ANSI/AWWA C651 except as modified herein; and the location and number of all tests shall be determined by the District, with approval by the State Health Department. A minimum of two (2) consecutive passing bacteria samples (absent for Coliform, absent for e. coli, and HPC ≤ 200) are required by the District. The first set of samples shall be taken 24-hours after pipeline is completely flushed and water in said pipeline has been at rest without any water flows. The second set of samples shall be taken 24-hours after first set of samples were taken and water in said pipeline has been at rest without any water flows. No connections to District's existing water system shall be made until certified test results, in writing for both sets of samples are provided to District for review and approval.

Once District provides approval for connections to District water system, Contractor can make connections. One sample will be taken immediately following completion of connection and energizing of existing line and connection within the vicinity of the connection and second sample taken 24 hours later in same location. This procedure shall be repeated at all proposed connection locations.

14. CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD, SANTA ANA REGION PERMIT

Contractor shall channel (using sandbags or other means) flushing flow. Contractor shall protect all property from flooding and other damage during flushing operations. Contractor shall post "flooding ahead" signs in streets as required and as directed by the District. Because of demand on existing water system, the District may require Contractor to flush the pipeline over several days, in the evenings, weekends, or holidays.

Contractor shall not allow any discharges from the construction site which may have an adverse effect on receiving waters of the United States.

Discharged water shall meet chlorine residual levels established by the appropriate State Water Quality Control Board. Dechlorination prior to flushing may be required, the cost of which shall be paid by the Contractor.

15. CORROSION PROTECTION

Where indicated on the Drawings, cathodic protection test stations and/or flange insulation kits with test stations shall be constructed in accordance with the applicable District Standards. Payment for installation of cathodic protection test stations and/or flange insulation kits with test station shall be per the unit bid price indicated on the Bidding Sheet for each installation, and no additional compensation shall be made therefore.

16. TAPPING

Connections to existing pipelines shall be made with the installation of tees or wrappers as designated on the plans. The connection sequence shall be as follows: The existing pipeline shall be drained; the tee or wrapper with valving shall be installed; and District approval of the connection shall occur prior to the re-filling of the existing pipeline.

In certain instances, and only where approved in writing by the District, wet tapping will be allowed as follows:

A. Water Mains

Where connections to existing water mains are made by wet tapping, the Contractor shall perform all required excavation and shall furnish the tapping saddle and gate valve. The District, or a District authorized contractor (Kopel or approved equal), will install the tapping saddle and gate or plug valve and make the wet tap. The Contractor shall pour the thrust block, backfill, complete all compaction of backfill, make closure, set the gate "can" and cover, make all necessary pavement repairs and complete the installation in accordance with the Plans and these Standards.

B. Water Laterals

Where connections to existing water mains are made by wet tapping, the Contractor shall furnish and install all necessary material and perform all required hand and machine excavation, backfill and pavement repair. The District or a **District** authorized Contractor will perform the actual wet tapping only.

17. VIDEO INSPECTION (CML/CMC WATERLINES)

Upon completion of the installation and backfill of the water pipeline, appurtenances, services, etc. and prior to filling the pipeline with water for the pressure test, the Contractor shall notify the District that the pipeline system is ready for video inspection. Said notification shall be made at least five (5) working days in advance of the actual video inspection date. The video inspection will be made by a video inspection company approved by the District and hired by the Contractor. Video Inspection shall be made in the presence of the District or the District's representative. Prior to the video inspection, the contractor shall be responsible to provide the following items:

A. Clean water pipelines free of all dirt, rock, debris, etc.

B. Labor and equipment necessary to excavate the pipeline and provide camera access ports. Access ports shall not exceed 1000 feet in spacing and shall be located at all bends in excess of 22°. Also, labor and equipment necessary to repair the access ports to the satisfaction of the District.

C. Drivable truck access to each access port within the system to be videoed.

D. Provide all traffic control methods required.

Should any of the aforementioned items not be in compliance by the time the video inspection is to occur, the Contractor shall be subject to compensating the District for all costs incurred.

Full compensation to the Contractor for complying with the above requirements shall be considered as included in the contract lump sum provided for such work and no additional allowance will be made therefore.

Upon completion of the video for the subject waterlines, the Contractor shall reconnect the piping and backfill all access ports. The video inspection company will provide the District with the DVD (video file format to be viewable on a standard DVD player/computer and/or as approved by the District) and a written report detailing the condition of the interior of the mainline and joints. Subsequent to review of the DVD and report by the District, the District will notify the Contractor that the Contractor may then proceed with the filling, testing, and disinfection of the pipeline; or the District will provide a list of corrective measures that must occur prior to acceptance.

Should remedial activities be necessary, the reconstruction methodology shall be approved by the District prior to commencement of the work. Upon completion of the remedial construction, the Contractor shall once again notify the District that the waterlines are ready for a video inspection. The District reserves the right to re-video any portions of the water system they determine may have been affected by the reconstruction work activities. Further, all related costs including but not limited to reconstruction materials, labor, equipment, video inspection, District and other agency inspection, and administrative costs shall be borne by the contractor.

VIDEO INSPECTION COMPANY REQUIREMENTS

(Closed Circuit Television Inspection - CCTV)

1. Rotating lens camera with articulating head.
2. Scanning capabilities of 360°.
3. Operative in 100% humidity conditions.
4. Lighting for the camera shall minimize reflective glare.
5. Lighting and camera quality shall be suitable to provide clear, in focus picture of the entire periphery of the pipe for all conditions.
6. Camera focal distance shall be adjustable through a range from 6" to infinity.
7. Remote reading distance (footage) counter shall be accurate to one percent (1%) over the length of the particular section being inspected.
8. The camera, television monitor, and other components of the color video system shall be capable of producing a minimum of 350 line resolution.
9. Documentation consisting of a DVD (video file format to be viewable on a standard DVD player/computer and/or as approved by the District) and a written report detailing the condition of the mainline and joints shall be submitted to the District inspector immediately following the video inspection. Each disc shall be labeled with the project or subdivision name, number and pipe run numbers it contains. Each disc shall be delivered in a plastic case.
10. <u>All video equipment used for domestic water systems shall be certified for domestic waterline inspection only and shall never have been utilized in a non-potable system</u>.
11. The CCTV camera operator shall stop at each defect and pipe joint and televise the entire joint with the pan and tilt feature on the head of the camera, initially, in a complete counterclockwise direction followed by a complete clockwise direction. If a defect is found, the CCTV operator will "home up" the camera prior to defining the defect and determining it's size and location. The CCTV operator will also stop and record <u>any</u> questionable item such as a stain, crack, paint mark, shadow found or character change in a pipe being inspected. In other words, the CCTV operator must stop, record and note anything questionable no matter how minor. The Engineer, as defined by JCSD Standard Specifications, not the CCTV operator, will decide if a questionable items is a "problem event" when that Engineer reviews the video inspection.

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SEWER PIPELINE MATERIALS SPECIFICATIONS

1. GENERAL

Where alternate pipeline materials are allowed by the District, the Contractor shall select such materials and construction methods as will result in a satisfactory completed project. All pipe materials shall be new and unused unless otherwise specified. Materials and strength of pipe shall be as shown on the plans or as specified herein.

2. GRAVITY MAINS

A. Vitrified Clay Pipe (VCP)

(1) General

Vitrified clay pipe and fittings shall not be used for proposed pipelines. However, VCP pipe exists the District's sewer system.

(2) Joints

Existing joints in vitrified clay pipe shall be repaired using a factory-made mechanical compression joint, consisting of a plastic material (Polyurethane), or a factory applied rubber coupling, and shall be produced by a District Approved Manufacturer and shall conform with the requirements of Section 208.2.3 Type "G" Joints of the "Standard Specifications for Public Works Construction", Latest Edition. Note the requirements in Section II.G.2.

B. Polyvinyl Chlorine (PVC) Plastic Pipe (4" to 15" Dia.)

PVC solid wall pipe shall meet the requirements of ASTM Designation D-3034, SDR 26 or 35. Whenever portions of the proposed sewer construction are to be installed on the radius of a curve, the minimum radius and installation of the pipe shall be in accordance with the manufacturer's recommendations.

C. Acrylonitrile-Butadiene-Styrene (ABS) (4" & 6" Dia.)

Acrylonitrile-Butadiene-Styrene (ABS) solid wall pipe shall meet the requirements of ASTM designation D-2751, SDR 23.5 or 35.

D. High-Density Polyethylene (HDPE)

HDPE pipe shall meet the minimum requirements of AWWA C906 and have a minimum thickness of DR 11 and shall be color green. Pipe sizing shall be based on outer diameter (O.D.).

E. Alternate Material for Repair

- CIPP for Lining Gravity Sewer Main
- Folded and Formed PVC Lining System
- Fusible PVC

3. FORCEMAINS

A. Polyvinyl Chloride Plastic Pipe (PVC), (4" to 12" Dia.)

The pipe to be used shall be rubber gasket joint polyvinyl chloride pressure pipe, Class 235 or 305, conforming to AWWA C909 -(latest), outside dimensions of cast-iron pipe, plain end x gasket bell ends.

Fittings shall be ductile iron ANSI/AWWA C153(latest), 250 psi rated working pressure, interior lining with 3M Scotchkote 134, fusion-bonded epoxy, 2 coats at 8 mils each coat for a total of 16 mils, mechanical joint ends (MT) to fit Class 235 and 305 PVC - C909 pipe.

When flanged fittings are specified or required, the fittings shall be ductile iron conforming to AWWA C110/ANSI A21.10, Latest.

Locator wire shall be installed over all PVC force mains. Locator wire shall be 14-1 solid insulated copper wire (UF), in a continuous strand, placed on top of pipe and secured with tape. Locator wire shall be brought to the surface at all appurtenances (i.e. sewer air valves, sewer cleanouts, etc.), thus providing continuous “looping” between the appurtenances and the water main. All splices to locator wire shall be made with direct bury connectors.

B. High-Density Polyethylene (HDPE)

See previous specification under Gravity Mains.

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SEWER PIPELINE CONSTRUCTION SPECIFICATIONS

1. SEWER PIPE INSTALLATION

A. General

The Contractor shall furnish and install all sewer pipeline material required for the construction of the sewer and appurtenances as herein specified and shown on the Drawings. All pipeline material shall be installed per manufacturer's published recommendations and per the applicable published standards for the particular material being installed unless otherwise modified herein. In case of any conflict, the most stringent and highest requirement shall govern, and the Contractor shall adhere to said requirement, all at no additional cost to the District.

B. Installation of Pipelines

Pipe laying shall proceed up-grade with the spigot ends of bell-and-spigot pipe pointing in the direction of the flow. Each pipe shall be laid true to line and grade and in such manner as to form a close concentric joint with the adjoining pipe, following manufacturer's instructions for the specific jointing method being used. Any pipe which exceeds 1/2-inch from true alignment, settlement, or joint offset after laying shall be taken up and relayed at the Contractor's expense. The SAG measuring device shall be approved by the District. The SAG measuring device shall have a scale to measure the depth of flow to the invert of the pipe and shall be placed in front of the camera. The Contractor shall clean the pipe by balling.

Notwithstanding prior factory or yard inspection, the District shall have the right to reject any damaged or defective pipe found on the job which in the District’s opinion will affect the durability of the installation, and the District may order its removal from the work.

C. Sewer Constructed on Radius

Whenever portions of the proposed sewer construction are to be installed on the radius of a curve, the minimum radius and installation of the pipe shall be in accordance with the manufacturer's recommendations.

D. Cleaning

Before final acceptance of sewer facilities or prior to putting any sewer into service, all sewer facilities shall be visually checked and all foreign objects, materials or obstructions removed from the facilities. The District shall require that the facilities be cleaned by flushing, balling, rodding or other means so that the materials may be removed from the system.

E. Plastic Sewer Systems

(1) General

These provisions establish the requirements for the use of plastic pipe (i.e., PVC) for house lateral and main line sewer construction. Use is limited to those projects which are approved in writing by the District.

Plastic pipe may only be used where indicated on plans approved by the District. Where plastic pipe is used, one type shall be used between consecutive manholes and shall include the house laterals in that system. When pipe and fittings are fabricated by the same manufacturer, contractor will not be allowed to use fittings from other manufacturers.

Plastic pipe shall not be used for sewers serving industrial areas, or areas that, in the opinion of the District, are likely to be rezoned to industrial zones.

(2) Care & Handling

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

If pipe is strung along trench prior to installation, string only pipe to be used within a 24-hour period; all pipe is to be laid on a flat surface. The interior as well as all sealing surfaces of pipe, fittings, and other accessories shall be kept free from dirt and foreign matter. Gaskets shall be protected from excessive exposure to heat, direct sunlight, ozone, oil and grease. Solvent cement when used shall be stored in tightly sealed containers away from excessive heat.

(3) Mandrel Test of ABS & PVC Pipe

Following the placement and densification of backfill and prior to the placing of permanent pavement, all main line pipe shall be cleaned and then mandrelled to measure for obstructions (deflections, joint offsets and lateral pipe intrusions). A rigid mandrel, approved by the Engineer, with a circular cross section having a diameter of at least 95% of the specified average inside diameter, shall be pulled through the pipe by hand.

Ninety-five (95%) of the specified average inside diameter for flexible plastic pipe taken from the appropriate ASTM requirements are as follows:

	ABS Solid Wall (ASTM D-2751) SDR		**PVC Solid Wall (ASTM D-3034) SDR**	
Pipe Nominal Dia.	**23.5"**	**35"**	**35"**	**26"**
4"	3.62"	3.69"	3.975"	3.891"
6"	5.33"	5.45"	5.915"	5.793"
8"	N/A	N/A	7.920"	7.754"
10"	N/A	N/A	9.900"	9.692"
12"	N/A	N/A	11.78"	11.538"

(4) High Density Polyethylene (HDPE) Pipe

All laying, slip lining, jointing, testing for defects and for leakage shall be performed in the presence of the District's authorized representative and will be subject to the District’s approval before acceptance.

Installation shall conform to the requirements of ASTM D 2321, ASTM D 2774, ASTM F 585, instructions furnished by the pipe manufacturer and supplementary requirements or modifications specified herein. Wherever the requirements of this Section and the aforementioned requirements are in conflict, the more stringent provision shall apply.

HDPE pipe shall be limited for use in easements at the direction of the District. HDPE pipe may be laid with a horizontal curvature; however,

the curvature radius shall be no greater than 50-percent of the pipe manufacturer's recommendations.

SHIPMENT, STORAGE AND HANDLING

The Manufacturer shall package products for shipment in a manner for safe transport by commercial carrier. The carrier shall use the appropriate methods and intermittent checks to ensure the pipe is properly supported, stacked and restrained during transport such that the pipe is not nicked, gouged or physically damaged.

When delivered, a receiving inspection shall be performed and any shipping damage shall be reported to the Manufacturer.

Pipe shall be stored at the job site in unit package provided by the manufacturer. The Contractor shall take every precaution to avoid compression damage or deformation to the pipe and to the ends of the pipe. The pipe shall be stored in such a way as to prevent sagging or bending and shall be protected from exposure to direct sunlight. Gaskets should be stored in a cool, dark place out of the direct rays of the sun, preferably in the original cartons.

The Contractor shall prevent undue scratching or gouging of the pipe in storage and handling of the pipe. Sections of the pipe with cuts or gouges in excess of 10% of the pipe wall thickness shall be cut out and removed. The undamaged portions of the pipe shall be rejoined using the heat fusion joining method.

When lifting and handling with slings, only wide fabric slings capable of safely carrying the load shall be used to lift, move or lower pipe and fittings. Metal, wire rope or chains shall not be used. Slings shall be of sufficient capacity for the load and shall be inspected before use. Worn or defective equipment shall not be used.

JOINING

HEAT FUSION JOINING: Joints between plain end pipes and fitting shall be made by butt fusion and joints between the main and saddle branch fittings shall be made using saddle fusion using only procedures that are recommended by the pipe and fittings Manufacturer. External beads produced by the heat fusion procedure shall not be removed, but internal beads shall be removed. The Contractor shall ensure that persons making heat fusion joints have received training in the Manufacture's recommended procedure. The Contractor shall maintain records of trained personnel and shall certify that training was received not more than 12 months before commencing construction. The Contractor shall schedule a time to have the pipe Manufacturer provide training to the Contractor's pipe installer and the District's representative.

MECHANICAL JOINING: Polyethylene pipe and fittings may be joined together or to other materials by means of flanged connections (flange adapters and back-up rings) or mechanical couplings designed for joining HDPE pipe or for joining HDPE pipe to another pipe material such as PVC. Mechanical couplings shall be fully pressure rated and fully thrust restrained such that when installed in accordance with the Manufacturer's recommendations, a longitudinal load applied to the mechanical coupling will cause the pipe to yield before the mechanical coupling disjoins. External joint restraints shall not be used in lieu of fully restrained mechanical couplings. When an outside diameter compression mechanical coupling is used, a stainless steel stiffener shall be installed in the bore of the HDPE pipe.

MECHANICAL JOINT AND FLANGE INSTALLATION: Mechanical joints and flange connections shall be installed in accordance with the Manufacturer's recommended procedure. Flange faces shall be centered and aligned to each other before assembling and tightening of the bolts. In no case shall the flange bolts be used to draw the flanges into alignment. Bolt threads shall

be lubricated and flat washers shall be fitted under the flange nuts. Bolts shall be evenly tightened according to the tightening partner and torque step recommendations of the Pipe Manufacturer. The final tightening torque shall be 100 ft-lbs. or less as recommended by the Pipe Manufacturer.

LARGE DIAMETER FITTINGS: Fabricated directional fittings 16 inches IPS and larger shall be butt fused to the end of the pipe. The flange directional outlet connections shall be made up in the trench.

EXCAVATION, BEDDING AND BACKFILL

EXCAVATION: Trench excavations shall conform to the plans and drawings or as otherwise authorized noted. The Contractor shall remove excess groundwater if any encountered. The trench walls shall be shored or reinforced when necessary. The Contractor shall take all the necessary precautions to ensure a safe working environment.

BEDDING: Pipe shall be laid on grade and on stable foundation. Unstable or “mucky” trench bottom soils shall be removed and a 6-inch bedding of compacted material shall be installed to the pipe bottom grade. Excess groundwater shall be removed from the trench before laying the bedding and the pipe. A trench cut in rock or stony soils shall be excavated 6 inches below the pipe bottom grade and brought back to grade with compacted bedding. All ledge rock, boulders and large stones shall be removed.

BACKFILLING: Backfilling shall be performed in accordance with the Manufacturer’s recommendations and with the District's Standard Plans. Compacted material shall be at least 90% R.C. in 6-inch lifts.

FINAL BACKFILLING: Final backfill shall be placed and compacted to finish grade in accordance with the Manufacturer’s recommendations and with the District's Standard Plans. Native

soils without debris, stones, boulders, clumps, clods or the like larger than 8 inches may be used.

FIELD TESTING

BUTT FUSION TESTING: On every day that butt fusions are to be made, the first fusion of the day shall be a trial fusion. The trial fusion shall be allowed to cool completely, then fusion test straps shall be cut out. The test straps shall be 12-inch minimum or 30 times the wall thickness in length with the fusion in the center and 1-inch minimum or 1.5 times the wall thickness in width. Bend the test strap until the ends of the strap touch. If the fusion fails at the joint, a new trial fusion shall be made and the procedure to be repeated. The butt fusion procedure shall not commence until the trial fusion has passed this test.

HYDROSTATIC PRESSURE AND LEAKAGE TESTING: The Contractor shall perform hydrostatic pressure and leakage test in accordance to the District Standards and in strict accordance with the Manufacturer's recommendations. In the event the section of pipe being tested fails, the Contractor shall locate and repair failure at no additional cost to the Contact. Test results shall have the full acceptance of the District prior to passing. No leakage will be allowed for butt fusion joints.

F. Measurement and Payment

Unless specifically otherwise provided for in these Specifications, full compensation for the work required for a complete installation of sewer pipeline shall be considered included in the bid unit price per linear foot of pipe, and no other compensation shall be made therefore.

Measurement for payment of pipe shall be on the basis of the horizontal linear footage constructed by the Contractor, complete in place. Measurement will exclude the space occupied by structures constructed by the Contractor. Pipe stubs of one pipe length or less installed in manholes shall be included in the price for manholes and will not be included in the measurement for pipe.

Where excavation depth breakdowns are indicated on the Bidding Sheet, the depths (sewer invert to ground surface) shall be determined by the cut sheets prepared by the survey crew.

Where the offset stake elevation varies more than 0.5 feet from the pipe centerline elevation (at the ground surface), the survey crew will take elevation shots to determine the actual cut from ground surface to invert of pipe. Using this procedure, the payment depth will be based upon average depth between 25 foot interval stations.

The District reserves the right to revise pipeline grades, and the Contractor shall trench and lay accordingly. Payment for said grade revisions shall be based upon the unit bid price for the appropriate size and depth category, and no additional compensation shall be made therefore.

G. Payments to Contractor for Completed Work

NO PARTIAL PAYMENT SHALL BE GIVEN TO THE CONTRACTOR FOR CONSTRUCTION OF THE SYSTEM UNTIL THE PORTION OF THE SYSTEM FOR WHICH THE PAYMENT IS TO BE MADE HAS BEEN TESTED AND THE ENGINEER HAS CERTIFIED THAT THE SYSTEM IS SUBSTANTIALLY COMPLETED AND READY FOR USE.

Consideration for partial payment may be given prior to the Contractor completing the permanent pavement (excluding AC Cap), provided the delay of placing the permanent paving was, in the opinion of the Engineer, due to causes beyond the control of the Contractor.

The Engineer may establish priorities for completion of certain parts of the work which may be necessary to provide certain services or which the Engineer may deem advisable in the interests of public safety and convenience.

2. MANHOLES

A. General

The manholes shall be constructed in accordance with the Standard Drawing, and at the locations shown on the plans. All concrete used in the manholes shall be Class "A" Concrete, as provided in Section **5** of these Basic Construction Specifications, unless otherwise indicated herein.

B. Precast Concrete Sections

Precast manhole sections shall conform to the size, shape, form and details shown on the Standard Drawing. The precast cylinder units and precast eccentric top sections shall meet the strength requirements for "Precast Reinforced Concrete Manhole Risers and Tops", ASTM C478. The Contractor shall submit shop drawings of the precast manhole Contractor proposes to use. Each manhole section shall be sealed with an approved preformed, permanently flexible gasket to form a watertight joint. Sealed joints shall conform to ASTM C-990; and shall not shrink, harden or oxidize upon aging. Precast concrete rings are to be joined and sealed with CS-102B butyl/bitumen blended sealant as manufactured by ConSeal of New Carlisle, Ohio. Manhole sections shall be set perfectly plumb. Sections of various heights shall be used in order to bring the top of the manhole ring and cover to the elevation shown on the plans.

C. Manhole Bases

Manhole bases shall be constructed of Class "A" concrete poured against native undisturbed material and to the form and dimensions shown on the Standard Drawing. If the Contractor over-excavates beyond the vertical dimensions shown on the Standard Drawing, the depth of concrete below the invert of the pipe shall be increased to greater than the 9" minimum as required to meet undisturbed material; all at no additional cost to the District.

Concrete shall be poured to a level ring-section seating surface, with the base centered over the sewer intersection unless otherwise specified. A metal forming ring shall be used to form a level joint groove in the manhole base. The groove will receive the first precast section to form a watertight joint.

Concrete shall be allowed to reach sufficient compressive strength prior to the installation of the precast manhole sections.

Connections of plastic sewer pipe to a manhole shall be watertight. All PVC or other flexible pipes entering or leaving concrete structures, including manholes, shall have a rubber sealing gasket, as supplied by the pipe manufacturer, firmly seated perpendicular to the pipe axis, around the pipe exterior and cast into the structure as a water stop. Additional requirements may be imposed by the District for manhole connections in projects constructed in areas of high or potentially high groundwater.

Precast manhole bases WILL NOT be allowed.

D. Manhole Frames and Covers

Manhole frames and covers shall be in accordance with the Standard Drawing. All frames and covers shall be traffic strength and shall be monogrammed according to the agency having jurisdiction. All frames and covers shall be composite material, EJ Series per District Standard Drawing No. S-7, Sheet 2 of 2.

The elevations at which manhole frames and covers are to be set shall con-form to the requirements set forth on the plans, but in all cases shall be governed by the District in the field. Manholes shall not be constructed to final grade until final paving has been completed. Where the cover is in existing pavement or in the traveled way of the existing road shoulder, it is to be placed flush with the existing surface. Where the cover is in unpaved areas, it shall be set per the Standard Drawing.

Manhole frames shall be set at the required grade and shall be securely attached to the top precast manhole shaft unit with a grout bed and filled as shown on the Standard Drawing. After the frames are securely set in the place provided herein, covers shall be installed and all necessary cleaning and scraping of foreign materials from the frames and covers shall be accomplished to ensure a fine satisfactory fit. All costs of setting and securing manhole frame and cover sets in place as herein provided, including all necessary concrete work, shall be considered as included in applicable contract unit prices and no additional allowance will be made therefore.

E. Standard Manholes

Standard manholes shall be constructed in accordance with the Standard Drawing and at the locations shown on the plans. Materials and construction of standard manholes shall conform in all respects to the applicable provisions of these specifications.

Standard manholes shall be either four-(4)-foot, five-(5)-foot, or six-(6)-foot diameter as shown on the plans. Full compensation for a complete installation of standard manholes shall be paid for at bid unit price per each and no other compensation will be made therefore.

F. Joint Wrap in Groundwater Conditions

In conditions where groundwater exists (or where the soils report indicates it could potentially exist) external wrap all joints with an approved joint wrap

impermeable to the groundwater. Joint wrap shall be a minimum of 65 mils thickness with width at least four (4) inches either side of concrete section joint. Product shall be ConWrap as manufactured by ConSeal of New Carlisle, Ohio. The external wrap shall be installed in addition to the required joint sealant per Section E.2.B herein.

G. Testing of Manholes

(1) Ground Water Conditions - Infiltration Test

All manholes in areas where ground water exists over the top of the pipe shall be water tested. All pumping of ground water shall be discontinued for at least three (3) days, after which the manhole shall be tested for infiltration. The inlet(s) and outlet of each manhole shall be plugged. Test for a minimum of thirty (30) minutes. No visible leakage shall be allowed.

(2) Vacuum Testing

All manholes shall be vacuum tested. Refer to Section E.12 herein for specific requirements.

H. Lining of Manholes

Utilithane 1600 Polyurethane Coating, 30SPL, as manufactured by Prime Coatings Inc. is ASTM D16, Type V, elastomeric, high build, corrosion and abrasion resistant, 100-percent pure polyurethane and 100-percent solids (no solvents) containing no volatile organic compounds or fillers.

Hydrogen sulfide resistant and tested by City of Los Angeles per SSPWC Greenbook Section 211-2. The service duty to be for new concrete sanitation wastewater structures, minimum of 150 mils thickness. Adhesion strength to concrete substrate per ASTM D4541 elcometer pull test, with primer, adhesion meets or exceeds 200 psi or the cohesive strength of the concrete substrate. The following are the minimum properties:

(1) Shore D Hardness ASTM D2240: D66-70

(2) Tensile Strength ASTM D638 IV: 3,000 psi

(3) Tear Resistance ASTM D624: 191 psi

(4) Elongation at Break ASTM D638 IV: 43 to 50%

(5) Flexibility ASTM D1737: Zero Bend on 1/2” Mandrel at 20 mils

(6) Dielectric Strength ASTM D149: Greater than 350 volts/mil

(7) Abrasion Resistance ASTM D4060, CS-17: 378 mg
Weight Loss 1,000 gms/cycle

(8) Impact Resistance ASTM G14: 140 in-lbs.

Apply Utilithane LTE 900 Primer for use with concrete substrate. Perform surface preparation per manufacturer’s recommendations.

3. SEWER LATERALS

A. General

The sewer laterals shall be constructed as shown on the Standard Drawing. Sewer laterals of the size called for on the plans shall be installed at approximately the locations shown on the plans. The exact location will be determined in the field by the District or private developer. The Contractor shall field reference each lateral connection with a surface marker. The marker shall be as specified on the Standard Drawing.

B. Materials

All sewer laterals shall be constructed using PVC pipe, and shall meet the requirements of ASTM D-3034.

C. Tees and Wyes

Tees and wyes shall be of the same material as the sewer main and the longitudinal barrel of the tee or wye shall be of the same size as the sewer main. Tees or wyes of the size called for on the plans shall be installed at approximately the locations shown on the plans. The exact location will be determined in the field by the District or private developer. A suitable plug shall be provided and installed prior to backfilling operations to ensure a watertight joint.

D. Construction

All sewer laterals shall be installed per the Standard Drawing. In no case shall any lateral be constructed at less than two percent (2%) slope unless shown on plans. The sewer lateral shall be constructed a minimum distance of five (5) feet horizontally from existing water services.

Unless otherwise approved by the District, any required saddle connections to existing mains shall be made with an approved sewer tapping machine. The Contractor shall submit to the District his proposed method for tapping, including manufacturer's tapping equipment descriptions, etc.

E. Payment

Sewer laterals shall be paid for at the unit price per foot bid, measured in a horizontal plane along the centerline of the sewer lateral from the centerline of the main sewer to the property line. Said prices per linear foot shall be considered full compensation for furnishing all pipe and fittings, other materials, equipment and labor necessary to install the pipe; including clearing and grubbing, pavement removal and replacement, placement of bedding in the locations shown on the plans in accordance with the Standard Drawings and specifications, removal and/or replacement of existing interfering improvements; and all other work pertinent to installing the sewer lateral complete in place and for which no additional compensation shall be made therefore.

In payment for tees and wyes, compensation shall be made for each tee and wye installed at the unit price bid, excepting for tees and wyes installed for cleanouts, compensation for which shall be included in the price per cleanout. The portion of the tee or wye covered by such compensation shall be considered to be the branch portion.

4. TESTS FOR LEAKAGE IN SEWER

A. General

All the tests for exfiltration from, and infiltration into the system shall be in accordance with Section 306-1.4 of the "Standard Specifications for Public Works Construction", Latest Edition, except as modified herein. The method of testing and testing equipment shall be approved by the District.

The Contractor shall, at the Contractor’s own expense, furnish all materials for making the tests required under the direction of the District.

If the leakage or infiltration, as shown by the tests, exceeds the standard set forth in said section, Contractor shall, at no additional cost to the District, make the necessary repairs by methods approved by the Engineer to correct the deficiencies. All tests must be completed before the street or trench is resurfaced with permanent pavement replacement, but after complete installation

and trench compaction of all facilities within a particular section between manholes.

Full compensation for testing shall be included in the bid price of various items of work, and no other compensation shall be made therefore.

B. Air Testing (Gravity Sanitary Sewers)

The Contractor shall test all sewers by means of the air test specified herein, unless otherwise directed by the District. The air test shall be in accordance with ASTM C828 Standard Test Methods, Latest Edition, for PVC pipeline installations.

Air shall be introduced into the pipeline until 4.0 psi gauge pressure has been reached, at which time the flow of air to the pipe shall be shut off. After the temperature has stabilized the air pressure shall be permitted to drop and, when the internal pressure has reached 3.5 psi gauge, the time lapse required for the air pressure to drop to 2.5 psi gauge shall be measured. The time lapse required for the air pressure to decrease from 3.5 to 2.5 psi (gauge) shall not be less than that calculated based upon equations from ASTM C828. An alternate method of determining the allowable time lapse is to utilize the tables from the National Clay Pipe Institute (NCPI) publication entitled “Low Pressure Air Test for Sanitary Sewers”. Tables shall be utilized by taking the next highest main line and lateral lengths in the table which exceeds the actual main line and lateral lengths.

If the time lapse exceeds that calculated or shown in the NCPI tables, the pipe shall be presumed to be within acceptable limits; if the time lapse is less, the Contractor shall make the necessary corrections to reduce the leakage to acceptable limits by repair methods approved by the District.

C. Water Infiltration Test (Gravity Sanitary Sewers)

Where ground water conditions are encountered and the water level prior to any pumping or dewatering operations is above the top of the proposed sewer pipe, then the Water Infiltration Test shall be used in lieu of the air test specified in Section 5-B of these Basic Specifications. The Water Infiltration Test shall be in accordance with Section 306-1.4.3 of the Standard Specifications for Public Works Construction, Latest Edition, except as herein modified.

The infiltration shall not exceed 0.0016 gallons per hour per foot of sewer, per inch of pipe diameter. The test shall be run for a minimum period of two (2) hours. The Contractor shall furnish all labor, materials, equipment required for the infiltration test, at no additional cost to the District.

If ground water conditions are such that the ground water level is between the flow line of the proposed sewer pipe and the top of the pipe, both the air test and the water infiltration test shall be conducted at no additional cost to the District. In such a case, the section of pipe being tested shall be deemed acceptable only if it passes both the air test and the water infiltration test.

D. Force Main Pressure Test

Field hydrostatic test and leakage test shall be performed in accordance with all provisions of Section C12, (Water Pipeline Construction Specifications) with the following modifications. Air testing WILL NOT be allowed.

The test pressure at the location of the testing equipment shall be computed on the basis of the relative elevations of the test gauge and the lowest point in the section being tested, and shall result in a pressure of 150 percent of the design pressure at the lowest point in said section. The test pressure at the highest point in the test section shall be not less than 120 percent of design pressure. The test pump and gauge shall be connected to the force main at a location other than the highest point in the line, to facilitate release of air from the high point.

THE MEASURED LEAKAGE SHALL NOT EXCEED 2 GALLONS PER INCH DIAMETER OF PIPE PER 1000 FEET OF PIPE PER 24 HOURS. Should leakage exceed this amount, the section being tested will be considered defective and Contractor shall determine points of leakage, make necessary repairs, and conduct a second test. This procedure shall be continued until leakage equals or is less than the allowable minimum.

5. CONCRETE WORK

A. General

Concrete shall be composed of portland cement, natural aggregates, and water proportioned to produce required strength and well mixed into required consistency, Type II-V for all concrete in contact with wastewater.

Portland cement concrete for manhole bases, cradles, encasements, thrust blocks and structures shall be composed of portland cement, fine

aggregate, coarse aggregate and water proportioned and mixed in accordance with the requirements of Section 90 of the State of California Department of Transportation Standard Specifications, except as may be herein modified.

Concrete for manhole bases, cradles and encasements, and all other concrete structures, shall be constructed to the lines and grades and in accordance with the design shown in the details on the plans.

Prior to placing any concrete, the Contractor shall submit to the District the design mix proposed to be used. Said mix shall set forth the weights of cement, sand, coarse aggregate and the amount of water to be used. (Source of supply shall also be furnished to the District.) The proposed mix shall be approved by the District prior to placing any concrete.

B. Portland Cement Concrete Classification

Concrete Class	Compressive Strength @ 28 days (psi)	Sacks of Cement/CY
“A”	3,500	6
“B”	2,500	5
“C”	2,000	4
“D”	4,000	7

The amount of free water used in concrete shall not exceed 312 pounds per cubic yard, plus 20 pounds for each required 100 pounds of cement in excess of 564 per cubic yard.

Additional cement and a modified concrete mix, as approved by Engineer, will be required for situations requiring pumping of concrete.

C. Class "B" Concrete Encasement

Class "B" concrete shall be used for unreinforced concrete encasements that may be required by unforeseen field conditions. The quantity shown on the proposal is an estimate. The District hereby reserves the right to reduce this item to a small percentage of that shown on the proposal forms, delete it or increase it, without altering the unit price bid for cubic yard of concrete.

The unit price bid for cubic yard of concrete shall include furnishing all materials and labor and equipment to properly place the concrete as may be required, and no other compensation shall be made therefore.

D. Reinforced Concrete Encasement

At the locations shown on the plans, and in accordance with the detail shown on the plans and/or Standard Drawing, and these Basic Specifications, the Contractor shall construct reinforced concrete encasement around the sewer carrier pipe. Concrete for reinforced concrete encasement shall be Class "A". Reinforcing steel (unless otherwise indicated) shall be No. 4 bar, billet steel having minimum yield point of 60,000 psi, formed and spaced as shown on the plans or the Standard Drawing.

Payment for reinforced concrete encasement shall be at the unit price per cubic yard of concrete for the section as shown on the plans or Standard Drawing, and no other compensation will be made therefore.

6. PAVEMENT REMOVAL AND REPLACEMENT

A. General

Pavement removal and replacement for all public roads, including aggregate base and temporary paving where required, shall comply with all the requirements of the agency issuing the Encroachment Permit. In roads established under formation of a special road district, the specifications of the Encroachment Permit shall apply. Any private roads and streets, including driveways in which the surface is removed or damaged, shall be restored to the original grade and crown by the Contractor. Removed or damaged sections shall be restored with the type of improvements (or better) conforming to that which existed at the time the Contractor entered upon the work.

It shall be the responsibility of the bidder to satisfy themself as to the existing pavement sections prior to submitting their bid.

Full compensation for temporary and permanent resurfacing, including the replacement of base material as required, shall be included in the unit bid price for pavement removal and replacement per linear foot of mainline trench. Any required pavement removal and replacement for manholes, house connection laterals, or other appurtenances shall be considered included in the bid price for the various items, and no additional compensation shall be made therefore.

B. Pavement Cutting

Pavement shall be saw cut to a straight edge parallel to the pipe alignment prior to excavation. Method of pavement cutting shall be as specified by the Agency having jurisdiction. Under no circumstances shall excavation be started

prior to scoring of pavement. If the adjacent pavement is disturbed during the Contractor's operation, the pavement shall be recut on a straight line to remove the damaged pavement before resurfacing. Portland cement concrete pavement and sidewalk shall be saw cut. Pavement cutting shall be considered included in the bid price for pavement removal, disposal and replacement, and no additional compensation shall be made therefore.

C. Permanent Trench Pavement

The permanent trench pavement shall be in accordance with the Agency having jurisdiction. If not specifically addressed by the road agency's permit, the existing pavement shall be saw cut and the permanent trench base paving shall be constructed to be flush with existing so that the asphalt concrete is smooth, true to grade and cross section thus providing an even driving surface without undulations. The completed base paving surface shall be provided as described herein whether an asphalt concrete cap is specified on not specified. Should an asphalt concrete cap be required, Contractor shall grind down the base paving prior to placement of the A.C. cap.

D. Asphalt Concrete Cap

Where required by the agency issuing the Encroachment Permit or other agency having jurisdiction, an asphalt concrete cap shall be placed along the length of the trench. The installation of the asphalt concrete cap shall be in accordance with the specifications and policies of the agency having jurisdiction. Where the asphalt concrete cap is not specifically stated in the applicable permit or on the drawings, and when directed by the District, the minimum cap shall be a grinded 0.10-foot thick, 12-foot wide section centered over the center of the trench or the traveled way, and pulled with a "Barber Greene" or equivalent.

Full compensation for placement of asphalt concrete cap, where required, shall be included in the unit bid price per linear foot of mainline trench. Any required asphalt concrete cap for house connection laterals or other appurtenances shall be considered included in the bid price for the various items, and no additional compensation shall be made therefore.

7. CONNECTIONS TO EXISTING MANHOLES

The Contractor shall make connections to existing manholes at the location and elevation shown on the plans and as verified in the field by the Contractor. Where new flow-through channels have to be cut in the existing manhole base, they shall be cut so that the resulting section is smooth and conforms to the intended shape. Deviation from

form and grade shall not be greater than 1/4 inch. The channel surface shall be smoothed with epoxy mortar. The new PVC sewer shall be firmly embedded in epoxy grout where it joins the existing manhole.

Payment for connections to existing manholes shall be included in the contract price paid for the various items of work wherein connections to existing manholes are required, and no additional allowance will be made therefore.

8. TEMPORARY HANDLING OF SEWAGE

Certain work in connection with tying into existing sewers and manholes, may require the temporary handling of sewage either by temporary bypass lines, pumping, bulkheading at low flows, or other means, to be approved by the District. Sewage so diverted shall be handled in a manner such that all sewage shall be contained and properly disposed of so as not to create a public nuisance or health hazard. No extra compensation will be allowed in connection with the temporary diversion of sewage, and all such costs shall be included in the various contract unit prices.

Should the Contractor's operation result in fine(s) from other agency jurisdictions or result in the District's need for cleanup assistance, the payment of such fines and District assistance shall be the responsibility of the Contractor.

9. VIDEO INSPECTION

Upon successful completion of the final leakage test for the sewer including manhole vacuum testing, and after base rock placement and compaction is complete, the contractor shall notify the District that the pipeline system is ready for video inspection. Said notification shall be made at least five working days in advance of the actual video inspection date. The video inspection will be made by a video inspection company approved by the District and hired by the Contractor. Video inspection shall be made in the presence of the District or the District’s representative. Prior to the video inspection, the contractor shall be responsible to provide the following items:

A. Clean sewer pipelines free of all dirt, rock, debris, etc.

B. Water source with an adequate amount water, pipe, hose, etc. to place enough water in the pipelines to evaluate pipeline alignment "SAGS".

C. Driveable truck access to each manhole within the system to be videoed.

D. Provide all traffic control methods required.

Should any of the aforementioned items not be in compliance by the time the video inspection is to occur, the contractor shall be subject to compensating the District for all costs incurred.

Full compensation to the contractor for complying with the above requirements shall be considered as included in the contract lump sum provided for such work and no additional allowance will be made therefore.

Upon completion of the video for the subject sewerlines, the video inspection company will provide the District with the DVD (video file format to be viewable on a standard DVD player/computer and/or as approved by the District) and a written report detailing the condition of the interior of the mainline and joints. Subsequent to review of the DVD and report by the District, the District will notify the Contractor that the Contractor may then proceed with completion of the project; or the District will provide a list of corrective measures that must occur prior to acceptance.

Should remedial activities be necessary, the reconstruction methodology shall be approved by the District prior to commencement of the work. Upon completion of the remedial construction, the contractor shall once again notify the District that the sewerlines are ready for a video inspection. The District reserves the right to re-video any portions of the sewer system they determine may have been affected by the reconstruction work activities. Further, all related costs including but not limited to reconstruction materials, labor, equipment, video inspection, District and other agency inspection, and administrative costs shall be borne by the contractor.

9A. VIDEO INSPECTION COMPANY REQUIREMENTS

(Closed Circuit Television Inspection - CCTV)

1. Rotating lens camera with articulating head.

2. Scanning capabilities of 360°.

3. Operative in 100% humidity conditions.

4. Lighting for the camera shall minimize reflective glare.

5. Lighting and camera quality shall be suitable to provide clear, in focus picture of the entire periphery of the pipe for all conditions.

6. Camera focal distance shall be adjustable through a range from 6" to infinity.

7. Remote reading distance (footage) counter shall be accurate to one percent (1%) over the length of the particular section being inspected. Provide depth gauge for SAG measurement acceptable to District.

8. The camera, television monitor, and other components of the color video system shall be capable of producing a minimum of 350 line resolution.

9. Documentation consisting of a DVD (video file format to be viewable on a standard DVD player/computer and/or as approved by the District) and a written report detailing the condition of the mainline and joints shall be submitted to the District inspector immediately following the video inspection. Each disc shall be labeled with the project or subdivision name, number and pipe run numbers it contains. Each disc shall be delivered in a plastic case. District will also accept the following formats: Thumb Drive and Cloud Service.

10. <u>All video equipment used for domestic sewer systems shall be certified for domestic sewerline inspection only.</u>

11. The CCTV camera operator shall stop at each defect and pipe joint and televise the entire joint with the pan and tilt feature on the head of the camera, initially, in a complete counterclockwise direction followed by a complete clockwise direction. If a defect is found, the CCTV operator will "home up" the camera prior to defining the defect and determining it's size and location. The CCTV operator will also stop and record <u>any</u> questionable item such as a stain, crack, paint mark, shadow found or character change in a pipe being inspected. In other words, the CCTV operator must stop, record and note anything questionable no matter how minor. The Engineer, as defined by JCSD Standard Specifications, not the CCTV operator, will decide if a questionable items is a "problem event" when that Engineer reviews the video inspection. Refer to Appendix P entitled "Closed Circuit Television (CCTV) Inspection Standards for Acceptance of New Sewers" of the District's Standards Manual for additional requirements.

10. VACUUM TESTING OF MANHOLES

A. General

All manholes shall be vacuum tested unless otherwise waived in writing by the District. Vacuum testing shall be performed either pre or post backfilling in

accordance with the criteria stated herein. In all cases vacuum testing shall be performed prior to video inspection.

Contractor shall be solely responsible for safe access to the manholes and all necessary safety measures required for the vacuum testing.

B. Pre versus Post Backfilling Test Criteria

(1) All manholes with depths from rim to pipe flowline less than or equal to twelve (12) feet shall be vacuum tested prior to backfilling.

(2) All manholes with depths greater than twelve (12) feet from rim to pipe flowline shall be vacuum test post backfilling.

C. Reference Standard

Unless otherwise modified herein, vacuum testing shall be in accordance with ASTM C1244-11.

D. Manhole Preparation

(1) Plug and seal all lift holes.

(2) Care shall be taken to affect a seal between the vacuum base and the manhole rim. Pipe plugs shall be secured to prevent movement while the vacuum is drawn.

(3) All pipe entering the manhole shall be temporarily plugged, taking care to securely brace the pipes and plugs to prevent them from being drawn into manhole.

E. Basic Field Testing Procedure

(1) The test head gauge shall be placed at the top of the manhole in accordance with the manufacturer’s recommendations.

(2) A vacuum of 10 inches of mercury shall be drawn on the manhole, the valve on the vacuum line of the test head closed, and the vacuum pump shut off. The time shall be measured for the vacuum to drop to 9 inches of mercury.

(3) The manhole shall pass if the time for the vacuum reading to drop from 10 inches of mercury to 9 inches of mercury meets or exceeds the values indicated in the table under Par. F.

(4) If the manhole fails the initial test, necessary repairs shall be made in accordance with a submitted plan and method approved by the District. The manhole shall then be re-tested until a satisfactory test is obtained. All repairs shall be the sole responsibility of the Contractor.

F. Minimum Test Times – Standard Manholes

(1) Testing Criteria

Depth of Manhole	**Diameter of manhole (feet.)**		
	4	5	6
(feet)	**Time (Sec.)**		
Up to 8 feet	20	26	33
10	25	33	41
12	30	39	49
14	35	46	57
16	40	52	67
18	45	59	73
20	50	65	81
22	55	72	89
24	59	79	97
26	64	85	105
28	69	91	113
30+	74	98	121

For manholes deeper than thirty (30) feet or larger than six (6) feet in diameter contact District for specific requirements.

(2) Testing Form and Certification

Submit testing form to District for approval. Include the following as a minimum:

- Date of Test
- Project Description
- General Contractor
- Agent/Company Performing Test
- Specific Location, Including Station and Manhole Number
- Detailed Test Results
- Certification Signed by Testing Company

G. Inspection and Re-Testing

The Inspector shall be notified when the testing will be performed and by whom. The inspector shall witness testing to verify procedures are being followed correctly, and must be given at least 48 hours notice.

Retesting manholes more than once may result in additional inspection fees chargeable to the Contractor.

H. Approved Vacuum Testing Companies

Vacuum testing shall be performed by Old Castle Precast of Riverside, California or other qualified testing organization approved by the District. Submit qualified testing company along with suitable documentation if alternate is proposed.

13. SEWAGE SPILL CONTAINMENT PLAN AND SEWER BYPASS/PHASING PLAN

A. General

The provisions stated herein shall apply whenever:

1. Existing residential/commercial sewer laterals are specified or indicated on the drawings to be disconnected from the existing sewer line and reconnected to the new line.

2. An existing sewer main is to be removed and replaced with a new sewer main at or near the same location.

Under either of the two cases, flows from the residential/commercial customers shall be contained and bypassed so that service is not interrupted.

B. Sewage Spill Containment Plan and Sewer Bypass Phasing Plan

The Contractor shall generate, and submit to the District at the Pre-Construction Meeting, a “Sewage Spill Containment Plan and Sewer Bypass Phasing Plan” that details the general order of construction, complete with details of where, when, and how the Contractor plans to bypass the existing sewer lateral and mainline flows. Proposed sewer bypass shall only be utilized during normal working hours, and the existing sewer shall be put back into service each day. The temporary bypass will be allowed to operate overnight only with specific written approval by the District. Requests for overnight bypass shall be

detailed in the submitted plan. Unless otherwise approved by the District, residential customers may have their service interrupted for no more than 8 hours. Contractor shall provide sanitary sewer services, in accordance with Section A, to residential customers (services for each home) during construction if their service will be interrupted. Sewer service for commercial customers along the proposed alignment shall not be interrupted by construction. Contractor shall identify all commercial customers in the plan.

C. Sewer Bypass

The Contractor shall arrange for, furnish, install and maintain all required bypass equipment, pumps, generators, piping, fittings, connections, etc. required to bypass the existing sewer flows during construction. All bypass equipment shall be installed and be made immediately operable to provide complete redundancy (primary and backup systems) to handle peak flow. Contractor shall provide for personnel to continuously monitor the bypass system.

D. Existing Sewer Flows

Refer to the Special Requirements section of the specifications for existing sewer flows. If information is not provided in Special Requirements, contact the District.

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TRAFFIC CONTROL SPECIFICATIONS

1. PUBLIC CONVENIENCE AND SAFETY

A. General

It is the Contractor's responsibility to comply with the following requirements and to make any adjustments necessary to provide a route around or through the work area that is clear of obstructions and is signed and delineated in accordance with standard industry practice, applicable County standards, Cities requirements, Caltrans standards, current California Manual on Uniform Traffic Control Devices for Streets and Highways, the Work Area Traffic Control Handbook, Encroachment Permit requirements, and the following requirements.

Failure to comply with these requirements will result in an order to cease all work within the public street. Any deviation from these requirements shall require written approval from the Cities and JCSD.

Maintaining traffic shall conform to the Caltrans provisions in 7-1.02 "Load Limitations", 7-1.06 "Safety and Health Provisions", 7-1.08 "Public Convenience", 7-1.09 "Public Safety", and 12-3.04 "Portable Delineators" of the Standard Specifications, the Manual of Traffic Controls, the Section of these contract documents entitled "Insurance - Hold Harmless", and these Special Provisions.

All existing traffic control signs and street name signs shall be maintained in visible locations as directed by the Engineer. The Contractor shall cover conflicting signs and remove conflicting striping and pavement markings.

All warning lights, signs, flares, barricades and other facilities for the sole convenience and direction of public traffic shall be furnished and maintained by the Contractor. All signs shall conform to and be placed in accordance with the

California Manual on Traffic Control Devices for Street and Highways Supplement latest edition and it's approved changes.

All construction signs shall be either covered or removed when not required by the nature of the work or if no present hazard to the motorist exists.

No payment for extra work will be allowed for work performed as specified in Section 12-2.02 (Flagging Costs) of the Standard Specifications. Flagging costs will be borne entirely by the Contractor.

All temporary travel lanes shall be a minimum of twelve feet in width unless otherwise authorized by the Cities or shown on the JCSD provided Traffic Control Plan. In addition, lane clearance shall be a minimum of five feet from an open excavation with Type II barricades with "OPEN TRENCH" C27 (CA) signs spaced every 150-feet, and two feet from a curb or other vertical obstruction.

The Contractor shall provide access for USPS, refuse collection, and other service providers on regular basis.

When traffic is diverted from the existing pavement, suitable surfacing shall be provided and shall be approved by the Cities.

The Contractor shall provide personnel who will be responsible for the maintenance of all traffic control devices and will be available on a 24-hour basis. The names and telephone numbers of these personnel shall be submitted to District, County, Cities, and Engineer prior to the start of any construction. The job site shall be inspected daily, during weekends and holidays, and any adjustments, corrections or repairs that are determined to be necessary for the proper operation of the traffic control system shall be made immediately.

B. Pavement Striping/Marking

Temporary striping shall be immediately provided any time the existing striping is removed or the effectiveness is reduced. Temporary striping shall also be provided immediately after paving operations are complete and prior to the opening of the roadway or lanes just paved.

Re-striping will be required under the following conditions:

1. When traffic is to be diverted to the left of an existing double yellow centerline for two or more consecutive nights.

2. When the work area is adjacent to an intersection and results in a transition within the intersection.

3. When the traffic lane is continuously obstructed for more than one week on any street that has two or more lanes in a single direction

4. In other unusual situations where traffic and physical conditions, such as speed or restricted visibility, require special treatment.

The Contractor shall notify the Cities if re-striping is required. The City shall determine the extent of striping removal and re-striping. When temporary pavement striping or markers are provided, the existing striping or markers must be removed or covered by the Contractor. The installation of temporary striping or pavement markers will be done by the Contractor.

2. TRAFFIC AND ACCESS

A. General

When driveways are inaccessible due to the Contactor's work they shall be blocked by two Type II barricades or one Type I barricade and two delineators. Driveways that are ramped or planked for temporary access shall be provided with a barricade or delineator at each side. The Contractor shall give a two week notice to affected property owners prior to blocking any driveways. All driveways shall be open and accessible during non-working hours. If driveways or parking lots are inaccessible due to the Contractor's work, the Contractor shall provide temporary parking in the construction zone or offsite. The Contractor shall provide a safe and accessible path from temporary parking location to home or business.

Construction equipment, or vehicles not actively engaged in the work shall not be parked in such a manner as to restrict or obstruct the traffic flow.

Construction spoils or materials may be stored in the same lanes as the work obstruction provided they remain a minimum of two feet from the travel lane and do not restrict or obstruct the traffic flow.

B. Pedestrian Traffic

When the work area encroaches upon a sidewalk, walkway or crosswalk area, the Contractor shall give special consideration to separating the pedestrian from the work area. The passageway for pedestrians shall be at least four feet in width, free from obstructions, free of abrupt changes in grade, well defined, and meet ADA requirements. Any obstructions in the walkway shall be illuminated during hours of darkness. Minimum vertical clearance to any obstruction within the walkway shall be seven feet.

Where walks are closed by construction, an alternate walkway shall be provided, preferably within the parkway. Where it is necessary to divert pedestrians into the parking lane of a street barricading or delineation shall be provided to separate the pedestrian walkway from the adjacent traffic lane. At no time shall pedestrians be diverted into a portion of the street used for vehicular traffic.

At locations where adjacent alternate walkways cannot be provided, appropriate signs and barricades must be installed at the limits of construction and in advance of the closure at the nearest crosswalk or intersection to divert pedestrians across the street.

3. STREET CLOSURES, DETOURS, BARRICADES

A. General

The Contractor shall not close additional streets except as shown on the Traffic Control Plans within the City without first obtaining the approval of the City. Traffic control and detour diagrams shall be submitted by the Contractor as required by the City and JCSD.

During paving operations, delineators are to be spaced no more than 25-feet apart. At all access points such as intersecting streets, alleys and driveways, barricades and/or delineators shall be provided at five-foot intervals to

prevent vehicular access to the paving area. Where access from an intersecting street is prohibited, a “Road Closed” sign shall be provided at the nearest prior intersection. “No Left Turn” signs shall be provided to prevent traffic from crossing new pavement.

B. Signs

All signs and barricades shall be provided, installed, maintained and removed by the Contractor.

Signs may not be attached to utility poles, public agency sign posts or trees.

The use of any “Regulatory” signs must be approved by the Cities.

Existing “Regulatory” and/or “Warning” signs within or adjacent to the work area must be maintained by the Contractor. Any signs which are damaged or found to be missing during the course of construction shall be replaced by the Contractor. If existing signs are not appropriate for traffic conditions in the work area, the Cities shall be notified to determine if the signs shall be covered, replaced or relocated.

Whenever the Contractor’s operations require that parking be restricted, the Contractor shall notify the Cities, and install temporary “No Parking” signs 48 hours in advance of the restriction. Once the signs are installed the Contractor shall notify the Cities Inspector.

All signs shall be free of any contaminates that reduce the visibility or reflectivity, shall be placed so as to be clearly visible to on-coming traffic and shall resist displacement. The center of signs shall be at least 4-1/2 feet above the roadway. Vertical clearance for signs where pedestrian traffic is permitted shall be seven feet. “Advance Warning” signs shall be located on the right hand side of traffic lanes. On a divided highway, supplemental advance warning signs shall be placed on the divider.

Signs to be used during darkness shall be reflectorized or illuminated.

All signs shall be removed or covered when work is not in progress or the lane/street closure is not in effect.

C. Barricades

Barricades shall not be placed in a moving lane of traffic without advance warning, such as a high level warning device and appropriate delineation. A single barricade shall not be placed alone in the traveled way.

When barricades are used to close a street they should be placed so there is no gap large enough for a vehicle to pass, except where necessary to provide access for local traffic or emergency vehicles.

Type II barricades mounted with flashers shall be installed around work areas in parkways.

Markings on barricade rails shall be alternate orange and white stripes sloping downwardly toward the travel lane at an angle of 45 degrees. The entire area of white and orange shall be reflectorized.

The predominant color for other barricade components shall be white. Owner identification shall not be imprinted on the reflectorized face of any rail.

D. Delineators

Where traffic is diverted to the left of an existing double yellow centerline, into a painted median, or into a left turn lane, delineators shall be utilized beyond the work area to return traffic to normal lanes.

Delineator shall be of a material that will withstand impact without appreciable damage to the device, the striking vehicle or passing traffic.

E. High Level Warning Devices

High level warning devices shall be at least 9-feet high with legs, base or truck mounting designed to resist overturning in brisk winds. Sandbags may be used to add weight to the base or legs. High level warning devices shall be equipped with a yoke at the top to accommodate at least three flags. Flags shall be fabricated of high visibility orange material and equipped with stays to keep the flags extended. Torn or dirty flags shall be immediately replaced.

High level warning devices shall be used at locations where construction or maintenance work is being performed within or immediately adjacent to a traffic lane.

F. Flashers

Flashers shall be used only to outline the work area or to provide advance warning. Flashers shall not be used to channelize traffic, to separate opposing traffic or to delineate the path that traffic is to follow. Flashing yellow lights used for advance warning must be clearly distinguishable from the primary delineation and shall be seen above the normal reflectorized units.

G. Flashing Arrow Signs

Flashing arrow signs are sign panels with a matrix of electric lights, capable of sequential arrow displays.

Flashing arrow signs are required on all lane closures where the street has two or more travel lanes in each direction.

H. Flagger Control

Flaggers are required:

1. Where workers or equipment intermittently block a traffic lane.

2. Where two directions of traffic will be using one lane (one flagger is required for each direction of traffic).

3. Where the absence of a flagger would create an undesirable situation for the public and/or workers.

Flaggers should be alert, intelligent, neat in appearance, having good hearing and eyesight, and be capable of commanding the traveling public. They should be stationed far enough from the work to slow down or stop vehicles before they enter the work area.

A symbol sign of a flagger shall be placed as far ahead of the flagger as practicable.

All flaggers shall be provided with an orange jacket (or vest) for daytime use and a reflectorized belt and suspender harness for use at night. During daylight hours, flaggers shall be equipped with a sign paddle. At night, flaggers shall use a red light.

4. SPECIAL HAZARDOUS SUBSTANCES AND PROCESSES

A. Edison Energized Conductors

Contractor hereby promises and agrees that in the performance of the work specified in this contract, it will employ and utilize only qualified persons, as hereinafter defined, to work in proximity to Edison's secondary, primary and transmission facilities. The term "qualified person" is defined in Title 8, California Administrative Code, Section 2700, as follows:

> "Qualified Person". A person who by reason of experience or instruction is familiar with the operation to be performed and the hazards involved."

Contractor further promises and agrees that the provisions of this paragraph shall be and are binding upon any subcontractor or subcontractors that may be retained by it, and that Contractor shall take such steps as are necessary to assure compliance by said subcontractor or subcontractors with the requirements of this paragraph.

B. Emergency Provisions

Unusual conditions may arise on the work which will require that immediate and unusual provisions be made to protect the public from danger or loss or damage of life and property, due directly or indirectly to the prosecution of the work, and it is part of the service required of the Contractor to make such provisions and to furnish such protection.

5. TRAFFIC CONTROL

A. General

The work to be performed under these items consist of full compensation for furnishing all labor, materials, tools and equipment for constructing temporary signing and striping for construction area traffic control in accordance with these

Special Provisions and the Traffic Control Plans, including but not necessarily limited to the following:

1. Construction area signs
2. Traffic control system
3. Type I, II, III barricades
4. Removal and reconstruction of traffic striping
5. "K-railing"
6. Portable delineator
7. Cover roadside sign; and
8. Flashing arrow boards

In addition to Section 7-10 of the State Standard Specifications, the installation of temporary signing and striping for construction area traffic control shall conform to Section 12, "Construction Area Traffic Control Devices"; Section 56-2, "Roadside Signs"; and Section 84, "Traffic Stripes and Pavement Markings", of the State Standard Specifications. Signs and barricades may be relocated and reused for successive construction phases, however, signs and barricades shall not be relocated until they are no longer necessary for the construction phase where they were originally required.

All traffic control devices must be in place and in proper working condition before the start of work each day. If it is found that traffic control devices are out of place or in a broken or inoperative condition, work will be halted until the necessary corrections are made.

Traffic control at intersections shall be adjusted to allow traffic access to the intersection immediately after construction is complete enough to allow safe use of the roadway.

B. Parking Restrictions

Parking within the areas of improvement may be restricted during construction operations. Temporary "No Parking" signs shall be provided and posted by the Contractor two (2) working days in advance of construction. The "No Parking" signs shall clearly state the date and hours during which the restriction is effective. Permission and requirements shall be obtained from the Project Engineer for any "No Parking" signs to be posted on existing trees, utility poles, and traffic signs.

C. Notification to Businesses and Residences

All adjacent businesses and residences shall be duly notified by the Contractor, in writing (in English and Spanish), of his proposed operation. Notice shall be delivered at least two weeks prior to start of construction. The Contractor shall be responsible for reproduction of the letters. Renotification will be required if the Contractor's schedule is altered, or other delays occur which affect the project's schedule.

D. Street Closures/Full or Partial

In case of full closure, the Contractor shall provide barricades and reflectorized "Road Closed to Through Traffic" signs at the intersections immediately in advance of all such closures at entrances to the closure, and all detour route signing. Access to local residences shall be maintained at all times as well as access for emergency and other service vehicles. Detour signs shall be posted on wood or metal posts. Signs shall not be posted on any tree, utility pole, or traffic sign.

E. Drive Approaches and Pedestrian Access

At least one driveway must remain open to commercial establishments at all times. The Contractor shall make provisions to interrupt the construction to allow access to existing driveways in the event such access is determined necessary by the Cities.

Access to all driveways in the area of construction shall be open and accessible during nonworking hours. The Contractor shall keep open all

driveways except for short periods of time as outlined in Section 7-10, "Public Convenience and Safety".

Adequate provisions for pedestrian access shall be the responsibility of the Contractor at all locations.

F. Observation of Job Site

The Contractor shall appoint a person responsible to drive, observe, and maintain the job site during weekends and holidays to ensure that the safety of the public, both motoring and pedestrian, is preserved.

The name and telephone number of the person appointed by the Contractor to drive and maintain the site during weekends and holidays shall be supplied to the Project Engineer and Owner prior to start of any work.

6. DETECTORS

The Contractor shall install temporary or permanent detector loops within 24 hours after temporary or permanent pavement installation.

Detector loops' configuration shall be Type E unless otherwise shown on the construction plan, in the Special Provisions or as directed by the Engineer.

Limit Line detector loop configuration shall be modified Type E with diagonal saw cuts and wire winding conforming to Type D loop configuration.

Detector loops' wire shall be Type 2.

Detector loops' lead-in cable shall be Type B.

Detector loops' curb terminations shall be Type A in accordance with Standard Plans ES-5D.

Loop sealant shall be the Hot-Melt Rubberized Asphalt sealant type, unless otherwise directed by the Engineer. Loop conductors and sealant shall be installed on the same day the loop slots are cut.

All detector loops shall be tested sequentially by the following methods:

- impedance (measured by mega ohms)
- resistance (measured by ohms)

- inductance (measured in microhenries)

7. PAYMENT

Full compensation, except as otherwise provided herein, for conforming to the requirements of this article, Traffic Control Plans, Transportation Management Plan, and furnishing, installing and maintaining all traffic control devices, additional wireless detection related equipment, temporary and permanent detector loops, temporary pavement markings, construction signs, traffic directing services, and all the other items shall be paid for on a lump sum basis, and no additional compensation will be allowed therefore.

Progress payments for work under this Section will be computed at the percentage of the total Contract work completed as of the progress payment, excluding contract change orders. The total payments not-to-exceed the total cost for each item. Payment for these Items at the price bid per lump sum (all inclusive) shall be considered as full compensation for doing all work as specified herein and no additional compensation will be allowed therefore.

SECTION 02738

MANHOLE REHABILITATION

PART 1 - GENERAL

1.01 WORK INCLUDED

A. This section covers repair, structural restoration and rehabilitation of existing manholes as required to eliminate leakage into the structures and provide protection against biogenic corrosion by providing a structural, monolithic liner on the manhole inside walls.

B. The CONTRACTOR shall provide all labor, materials, equipment, services necessary for bypass pumping of sewage flows in mains and services, cleaning and pre-inspection of manholes, complete installation of manhole restoration and apparatus not specifically mentioned herewith or noted on the plans, but which are incidental and necessary to complete the work specified.

C. Construction Photographs: The CONTRACTOR shall provide the District with preconstruction and post construction digital photo files of the manholes indicated for rehabilitation. Provide a list correlating the photo file number with manhole's approximate location. All photographs shall have sufficient detail of the interior of each manhole to reveal conditions of existing defects and rehabilitated features.

D. The manhole rehabilitation work details include, but not limited to:

1. Manhole structural restoration is achieved by spraying the manhole walls and bench surfaces with cementitious materials (mortar) or other approved materials to create a monolithic wall with no joints. This process provides a uniform liner, forming an impervious, monolithic liner with physical properties that exceed those of the existing structure.

2. The equipment must be specially designed to mix, pump and spray or apply the liner material in a uniform controlled manner.

3. The applicator, approved and trained by the manufacturer, shall furnish all labor and equipment and materials for applying a corrosive resistant cementitious or other material to form the structural liner. All aspects of the installation shall be in accordance with the manufacturer's recommendation and per the following specifications which includes:

    a. The removal of any loose and unsound substrate.
    b. Cleaning of the area to be sprayed with high pressure water.
    c. The repair and filling of voids.
    d. Removal of manhole steps as specified by the ENGINEER.
    e. The repair and sealing on the inverts and benches.
    f. The elimination of active infiltration prior to making the application.
    g. Finally, the spay application of an acid resistant cementitious material to form a structurally enhanced corrosion resistant monolithic liner.

E. Flow bypass shall conform to Section E and the Special Requirements of these specifications.

F. Traffic Control shall conform to Section F and the applicable sections of these specifications.

1.02 APPLICABLE PUBLICATION

A. The following documents form a part of these specifications to the extent stated herein and shall be the latest edition thereof. Where differences exist between codes and standards, the one affording the greatest protection shall apply.

C78 Standard Test Method for Flexural Strength of Concrete

C109 Standard Test Method for Compressive Strength of Hydraulic Cement Mortars

C157 Standard Test Method for Length Change of Hardened Hydraulic-Cement Mortar and Concrete

C307 Standard Test Method for Tensile Strength of Chemical-Resistant Mortar, Grouts, and Monolithic Surfacings

C580 Standard Test Method for Flexural Strength and Modulus of Elasticity of Chemical-Resistant Mortars, Grouts, Monolithic Surfacings, and Polymer Concretes

C596 Standard Test Method for Drying Shrinkage of Mortar Containing Hydraulic Cement

C882 Standard Test Method for Bond Strength of Epoxy-Resin Systems Used with Concrete By Slant Shear

D638 Standard Test Method for Tensile Properties of Plastics

D792 Standard Test Methods for Density and Specific Gravity (Relative Density) of Plastics by Displacement

1.03 QUALITY ASSURANCE

A. Sanitary sewer manholes shall be subject to final cleaning and testing.

B. The CONTRACTOR shall carry out the operations in strict accordance with all applicable OSHA regulations. Particular attention is called to those safety requirements involving work on an elevated platform and entry into a confined space.

C. Delivery, Storage and Handling

1. Transport, handle, and store materials as recommended by manufacturer.

2. If materials become damaged before or during installation, it shall be repaired as recommended by the manufacturer or replaced as required by the ENGINEER at the CONTRACTOR's expense, before proceeding further.

3. Deliver, store, and handle other materials as required to prevent damage.

D. Only those tools designed for the aforementioned procedures, and approved by the manufacturer or supplier and the ENGINEER, shall be used for assembly of manhole lining to ensure proper installation.

1.04 SUBMITTALS

A. Shop drawings, catalog data and manufacturer's technical data showing complete information on material composition, physical properties, and curing of lining materials and resins. Include manufacturer's recommendation for handling, storage, and repair of materials if damaged. Include also documents containing product (i.e. mortar and water-stop patching compound) technical information, ASTM test results and certification, application procedures and specifications for approval.

B. A list of locations and references for other projects in which the products was used successfully shall be furnished to the Engineer prior to commencing work.

C. Certifications and Testing:

1. Certification from the Manufacturer(s) that the CONTRACTOR or installer is licensed to perform the work.

2. Certification from the lining manufacturer that the material complies with the required application, meets the intended service condition and complies with the physical requirements set forth in this specification. Information from the manufacturer shall include specifications, characteristics and properties of the resin, methods of application, curing temperatures, and duration of temperature (step cooking temperatures/hours at each and final stages).

D. The CONTRACTOR shall submit to the ENGINEER a detailed plan of construction including the installation procedures, equipment set-up, and the locations of the proposed access points for approval. The CONTRACTOR shall have an approved plan of construction prior to commencing any construction

E. Grout and concrete design mixes and testing reports.

F. The CONTRACTOR shall submit a sewage bypass pumping and/or diversion plan for review by the ENGINEER at least 10 days prior to pipe installation where sewage flows must be interrupted to carry out the work. The sewage bypass pumping and/or diversion plan shall include an emergency response plan to be followed in the event of a failure of the bypass pumping and/or diversion system. The CONTRACTOR shall notify the ENGINEER 24 hours prior to commencing the bypass pumping operation. The Contractor will plan his work in order to maintain flows and not interrupt sewer service. This may include night work. The cost of any

night work required will be included in the contract price of the applicable item.

G. As-built drawings: The CONTRACTOR shall indicate and draw, with clear and accurate dimensions, on plans the as-built locations of newly rehabilitated sewer mains, laterals and cleanouts.

H. A copy of the manufacturer's written guarantee for all materials furnished under this section.

1.05 JOB CONDITIONS

A. The CONTRACTOR shall conduct operations and schedule cleanup in a manner to cause the least possible obstruction and inconvenience to traffic, pedestrians and to adjacent property owners or tenants.

PART 2 - PRODUCT

2.01 MATERIALS

A. Cementitious material (i.e. spray-able mortar) shall be SewperCoat as manufactured by Kerneos Aluminate Technologies or SP15 Spray Mortar as manufactured by ThoRoc or Strong-Seal MS-2A as manufactured by Strong-Seal Systems Group or Drycon - SM as manufactured by IPA Systems Inc. or approved equal. The minimum thickness shall be ½" in depth.

1. The mortar must be designed for this particular use and shall have:

    - A minimum tensile strength of 500 psi (ASTM C 496)
    - A minimum 28 days flexural strength of 600 psi (ASTM C78)
    - A minimum 28 days compressive strength of 5000 psi (ASTM C109)
    - A minimum 28 days bond strength of 2300 psi (ASTM C 882)

B. Polyurethane coating material shall be Utilithane 1600 Polyurethane Coating as manufactured by Prime Coatings Incorporated. The minimum liner shall be 3mm (125 mils) thick.

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From latest edition of the Green Book, Table 500-2.7.5

	Polyurethane
Tensile Strength ASTM D 638, Type IV, MPa (psi) (min)	13.8 (2,000)
Elongation at Break, % ASTM D 638, Type IV	40
Wear Resistance, mg. wt. Loss Taber abrasion, ASTM D4060	60[1]
Hardness, Shore D, Durometer ASTM D 2240	55
Tear Resistance, kg/mm (ppi) ASTM D 624	2.7 (150)
Peel Strength, Concrete, g/mm (pli) ASTM D 903	125 (7)[2]
Weight Change[3]	± 1.5%

[1.] Abrasive wheel No. CS-17, maximum value.

[2.] Tested as a system. Test results shall be verified on a per job basis or as specified by the Engineer

[3.] Test in conformance with 211-2 (Chemical Resistance Test).

C. Other applicable crack repair materials such as patching material, infiltration control material, and grouting material shall be obtained from the same manufacturer of the mortar for consistency in material used.

2.02 EQUIPMENT

A. Progressive cavity pumps are preferred because of their ability to provide a consistent volume of material to the spray head. High-pressure cleaning system and water storage tank are also required. A water metering system should be provided on the equipment to allow the application to properly control the volume of water added.

PART 3 - EXECUTION

3.01 GENERAL

A. Comply with all relevant provisions of the Safety and Health Regulations for Construction, promulgated by the Secretary of Labor, as set forth in Title 29 C.F.R., and with all provisions of the California Occupational Safety and Health Act of 1973.

B. Specific attention is directed to OSHA safety rules, regulations and precautions to be taken by the CONTRACTOR before entering sanitary sewer manholes, and sanitation structures with respect to physical and chemical hazards which may be present.

C. Prior to the installation of the lining system, the host structure shall be prepared to produce a concrete surface suitable for application and adhesion of the specified lining system. Cleaning and surface preparation shall include the inspection of the

host structure for any damage or leaks, and the removal of any protrusions on the surface of the host structure that could interfere with the installation of the lining system. Any damage or leaks shall be reported to the Engineer. Cleaning methods may include high pressure water cleaning at a minimum of 34.5MPa (5,000 psi), abrasive blast, or a method recommended by the manufacturer of the lining system, or another cleaning method submitted to the Engineer for approval. The CONTRACTOR shall protect the host structure from damage by the cleaning equipment, water and air pressure.

D. Debris from the cleaning operation shall not be allowed to enter the sewer system. The CONTRACTOR shall furnish, install and remove any necessary debris containment devices while maintaining sewer flow. The CONTRACTOR shall remove and dispose of all debris collected from the cleaning operation. If reinforcing steel is exposed, either before or after removing deteriorated concrete, it shall be thoroughly cleaned to remove all contamination and rust particles. Immediately after the cleaned reinforcing steel is inspected and accepted by the Engineer, the CONTRACTOR shall place a protective, corrosion inhibitor coating on the exposed reinforcing steel. The protective coating shall be approved by the Engineer in accordance with the manufacturers' specifications.

E. Existing manhole frames and covers shall be removed and replaced with new frame and cover.

F. In addition to sealing and lining the existing manhole structure, the CONTRACTOR shall apply liner to all interior surfaces of the manhole including but not limited to the flow channel, benches, and trough and any other additional exposed cementitious surfaces.

3.02 SANITARY SEWER MANHOLE WALL REPAIR

A. Manhole walls shall be sealed where shown or specified, or as directed by the Engineer.

B. Prior to the sealing operation, the manhole walls shall be thoroughly cleaned using a high pressure water blast with a minimum nozzle pressure of 5,000 psi or higher as required to remove all surface debris and loose materials. All cracks, openings, active water infiltration, and deteriorated joints in the manhole walls shall then be repaired in accordance with the sealing product manufacturer's recommendations.

C. Where occur, seal crack openings greater than 1/8 inch on inside of existing manholes by chipping out a minimum depth and width of ¾" to provide mechanical key for mortar.

D. Where occur, remove any loose bricks or pieces of brick, mortar or concrete and fill all voids and joints with mortar compatible with the lining system.

E. Where occur, seal all active water infiltration using rapid setting, water stop patching compound manufactured for this purpose.

F. Sealing manhole walls shall mean that the entire wall surface and the base are sealed with the new liner coating. The manhole wall seal shall extend from the top of the cone to the base. This seal will include the area where the walls join the base and the location where the pipes enter and exit the manhole, even if through the manhole base.

3.03 SANITARY SEWER MANHOLE INVERT AND BENCH REPAIR

A. The existing bench and trough area shall be thoroughly cleaned. Remove loose and unsound materials such as mortar, brick, clay pipe and concrete. Care shall be taken to avoid damage to other parts of the manhole structure. Loose materials shall be prevented from entering into the sewer lines and shall be properly disposed by the CONTRACTOR.

B. Repair manhole inverts and rebuild benches that have visible damage or infiltration present. Contractor shall repair all manhole benches using fast setting concrete (by Pre-Blend Products, Inc., or approved equal). Bench shall be sloped so that water will flow back into the channel.

C. Trowel mix uniformly onto damaged invert and bench at a minimum thickness of ½ inch, extending out onto base of manhole sufficiently.

D. Finished invert and bench surfaces shall be smooth and free of ridges.

3.04 SPRAY-ABLE MORTAR INSTALLATION

A. The mortar system consists of three primary components; (1) materials consisting of pre-blended, fiber-reinforced mortar, (2) specialized equipment designed to mix and convey the material, and (3) proper application techniques.

B. Rehabilitation of the manhole walls shall be accomplished by applying a structural, spray-able repair mortar coating to the original surface plane or a minimum of 0.5 inch. The manufacturer's recommendations shall be strictly followed for the entire operation including cleaning and preparing the manhole walls, storing and preparing the products, and sealing the manholes. The product must be specifically formulated for use in the sewer system and bear the manufacturer's certification that it will fulfill the requirement described herein when applied in accordance with the manufacturer's recommendations.

3.05 POLYURETHANE LINER INSTALLATION AND CURING

A. Lining material shall be applied to all prepared surfaces from 25mm (1 inch) below the low-flow water level to the base of the ring and cover unless otherwise specified. All termination points of the lining material to the existing subsurface shall be keyed into the subsurface by mechanically scoring a minimum 6mm x 6mm (1/4 inch x 1/4 inch) keyway. Prior to application of the polyurethane, the subsurface shall be primed with the epoxy primer to a thickness of 7.6µm (3 mils) minimum to 12.7µm (5 mils) maximum. Polyurethane shall be applied to a thickness of 3.2mm (125 mils) immediately prior to the epoxy primer becoming tack-free Lining material shall be uniform in color, fully cured, free of holidays,

surface imperfections, blisters and sags and adequately adhered to the subsurface.

3.06 TESTING OF THE SPRAY-ABLE MORTAR

A. The CONTRACTOR shall provide the Engineer for approval, with certified test results of the short term properties of the structural mortar material from the actual installed grout liner at a minimum of 4 samples taken at random from different batch of material.

Initial grout samples shall be submitted to a certified laboratory hired by the ENGINEER, paid by the DISTRICT and tested to confirm that the liner pipe conforms to the minimum ASTM requirements stated in Section 1.01-B.2. However, if the work should fail to pass the tests, it is the CONTRACTOR's responsibility to correct the work and re-test at the CONTRACTOR's expense. The DISTRICT shall not pay for these re-installations and re-tests.

3.07 TESTING OF THE POLYURETHANE LINER

A. The initial testing costs are to be paid by the District. However, if the work should fail to pass the tests, it is the CONTRACTOR's responsibility to correct the work and re-test at the CONTRACTOR's expense. The District shall not pay for these re- installations and re-tests.

B. **Spark Test:** The cured lining system shall be spark tested for holidays with the high voltage holiday detector instrument specified by the coating manufacturer or as specified in the Special Provisions. The voltage shall be set at a minimum of 15,000 volts. For thicknesses greater than 3.81mm (150 mils), the voltage shall be set at 100 volts per 25.4µm (1 mil) of thickness of the applied lining material. Identified holidays shall be marked without contaminating the lining surface and repaired.

C. **Mil Gauge Test:** During installation, a mil gauge shall be used to verify that the minimum thickness of the lining meets and/or exceeds the minimum thickness as specified herein.

D. **Adhesion Testing:** Adhesion testing shall be performed on a minimum of 1 structure or 15 percent of all rehabilitated structures, whichever is greater. Adhesion testing shall be conducted after the liner system has cured in accordance with the manufacturer's specifications. Adhesion testing shall be in accordance with ASTM D4541.

E. **Liner Repairs:** Holidays, uncured lining material, blisters, surface imperfections and damage to the liner resulting from the adhesion test shall be repaired to a point 25mm (1 inch) minimum beyond the limits of the damaged area. The repair shall be 3mm (125 mils) thick. Holidays shall be primed and recoated with the same lining system to a minimum additional thickness of 30 mils unless otherwise specified by the liner manufacturer or approved by the Engineer. Blisters, uncured lining and surface imperfections shall be completely removed and the areas recoated with appropriate lining material to 25 mm (1 inch) minimum beyond the repair areas at a minimum thickness of 100 mils. Additional spark testing shall be performed after repairs are completed.

3.08 FINAL ACCEPTANCE

A. Visually verify the absence of leaks. Manholes will also be inspected after completion and within the guarantee period. Leakage and other defects that were a result of the CONTRACTOR's work shall be eliminated and repaired by the CONTRACTOR as required by the Engineer, at the CONTRACTOR's expense.

B. Manhole testing (exfiltration or vacuum test) to be conducted per applicable manhole testing section of these specifications.

3.09 CLEANUP

A. Upon completion of sanitary sewer construction operations, all lines, manholes, and other structures shall be thoroughly cleaned of dirt, rubbish, debris and obstructions of any kind to the satisfaction of the ENGINEER, and the entire work site shall be cleaned of all waste, rubbish, and construction debris of any nature.

END OF SECTION

LOCATION MAP

JCSD FY23/24 ANNUAL WATERLINE AND SEWER REPLACEMENT PROJECT
(44TH STREET AREA) PROJECT NO. C245118

FIGURE 2

Water Pipeline Replacement

\\brkpan01.webb.lan\WO4\2023\23-0192\GIS\ES_ProjectLocation.aprx Map created 19 Sep 2024

LEGEND

- Existing Waterline
- Proposed Waterline
- Abandoned Waterline
- Impacted Meters

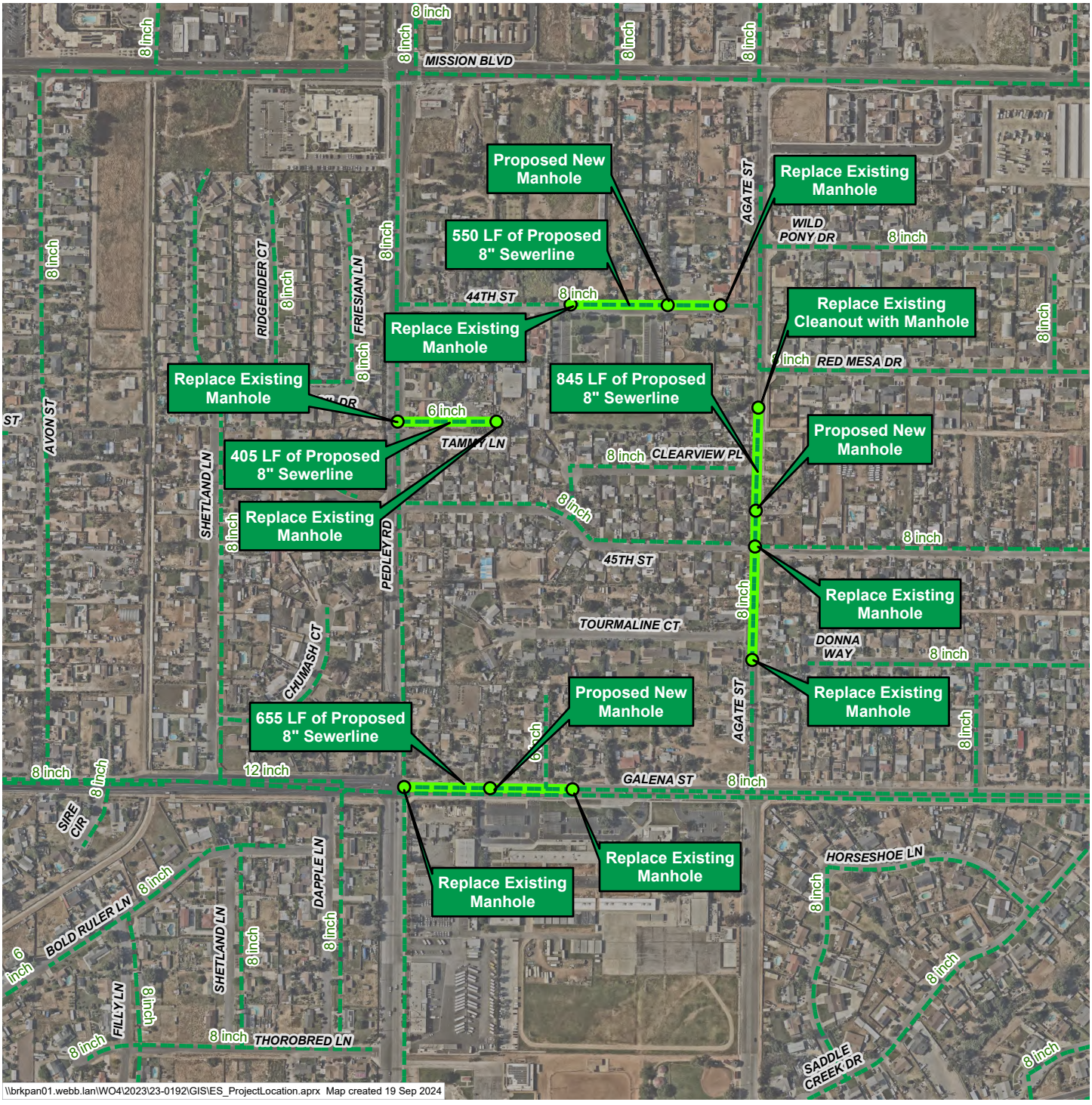
0 287.5 575 Feet

Sources: JCSD GIS, 2019; NearMap Imagery, 2023.

ALBERT A. WEBB ASSOCIATES

FIGURE 3

Sewer Pipeline Replacement



LEGEND

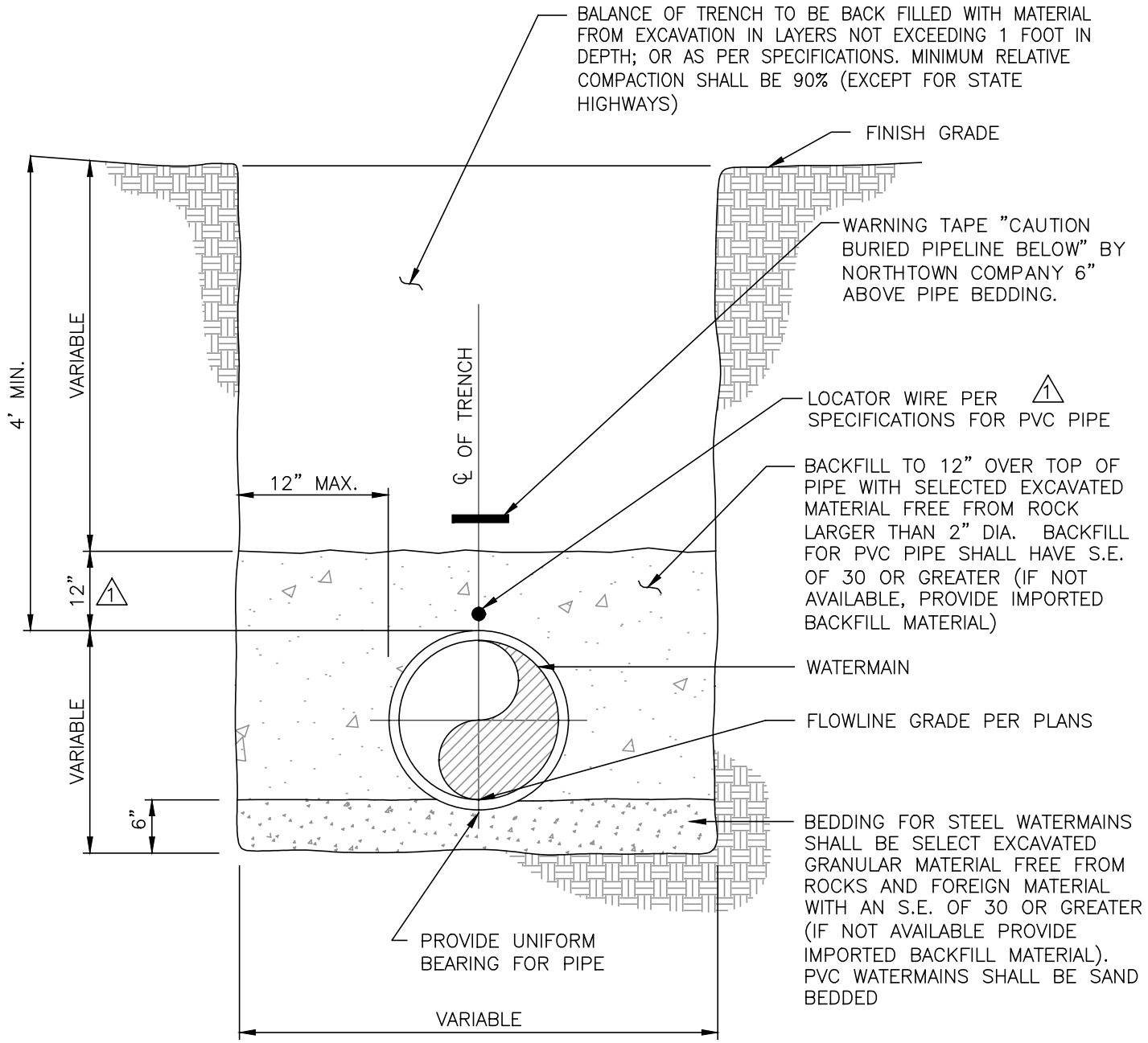
- Existing Sewerline
- Proposed Sewerline
- Proposed Manhole

0 285 570 Feet

Sources: JCSD GIS, 2019; NearMap Imagery, 2023.

ALBERT A. WEBB ASSOCIATES

STANDARD DRAWINGS



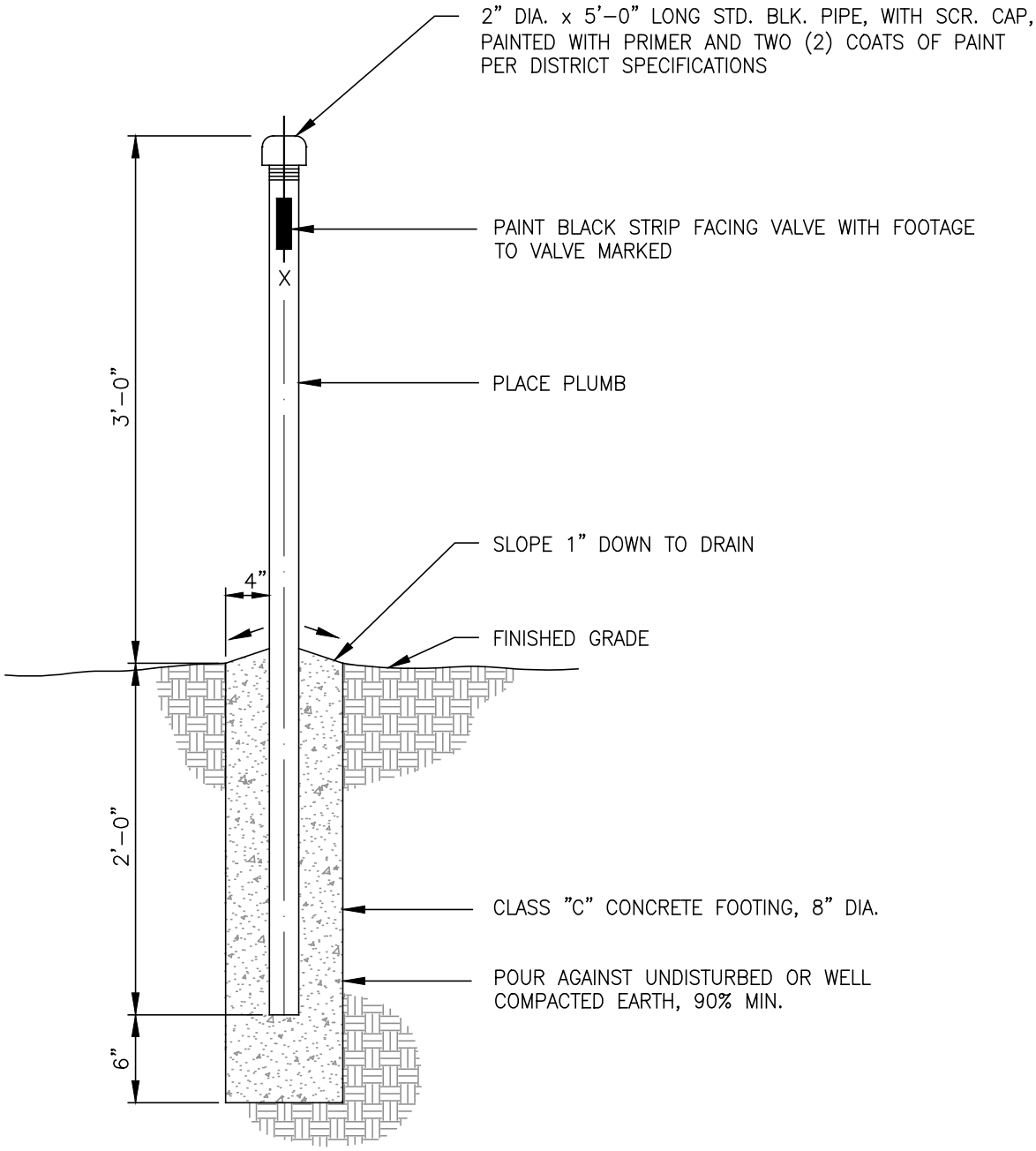
NOTES:

1. WHERE BOTTOM OF EXCAVATION IS IN ROCK WHICH CANNOT BE EXCAVATED TO PROVIDE UNIFORM BEARING FOR THE PIPE, OVEREXCAVATE 6" MINIMUM BELOW DESIGN GRADE, AND REFILL IN 3" THICK COMPACTED LAYERS WITH SELECTED EXCAVATED MATERIAL OR PROVIDE IMPORTED BACKFILL MATERIAL PER SPECIFICATIONS.

REV. 1 4/2024 STD. DETAIL REVISION

JURUPA COMMUNITY SERVICES DISTRICT

SCALE: NONE	TYPICAL TRENCH DETAIL	DRAWING NO. A-1
DATE: SEPTEMBER 2020		
APPROVED BY: _____ Sinnaro Yos, P.E. C68607	ALBERT A. WEBB ASSOCIATES CONSULTING ENGINEERS RIVERSIDE CALIFORNIA	W.O. 2023-3229



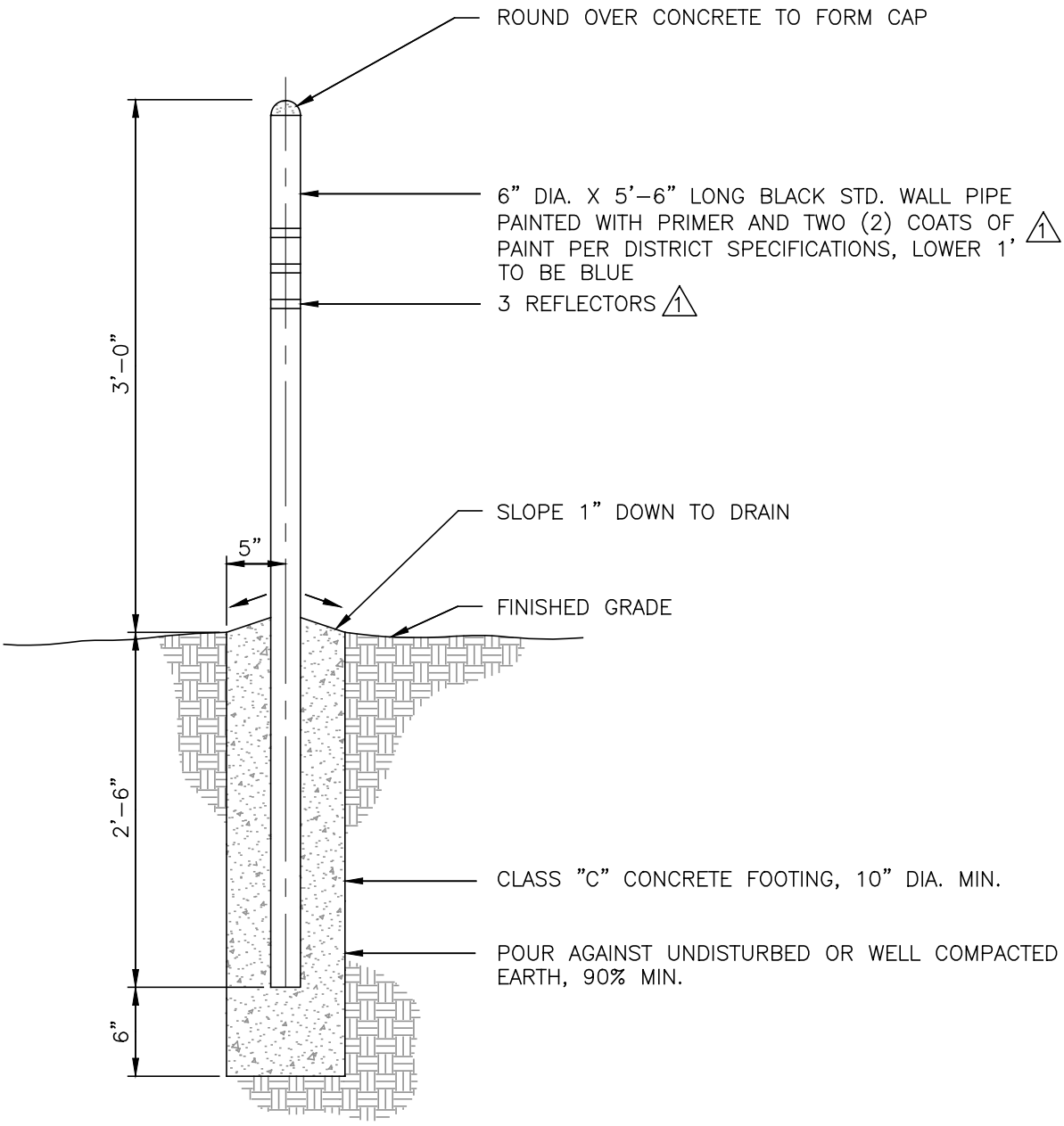
NOTE:

MARKERS TO BE INSTALLED AS DIRECTED IN THE FIELD BY THE DISTRICT, TO INDICATE THE LOCATION OF VALVES OR MANHOLES. TYPICAL FOR VALVE LOCATED WITHIN UNIMPROVED AREAS, LAWN AND PARKWAY AREAS, AS WELL AS AREAS WITHIN NON-PAVED OR NON-CONCRETE SURFACES AREAS.

JURUPA COMMUNITY SERVICES DISTRICT

SCALE: NONE	STANDARD VALVE AND SEWER MANHOLE MARKER INSTALLATION	DRAWING NO. A-3
DATE: SEPTEMBER 2020		
APPROVED BY: _____ Sinnaro Yos, P.E. C68607	ALBERT A. WEBB ASSOCIATES CONSULTING ENGINEERS RIVERSIDE CALIFORNIA	W.O. 2023-3229

REV.



NOTES:

LOCATION SHALL BE AS SHOWN ON PLAN VIEW, OR AS DIRECTED IN THE FIELD BY INSPECTOR OR ENGINEER.

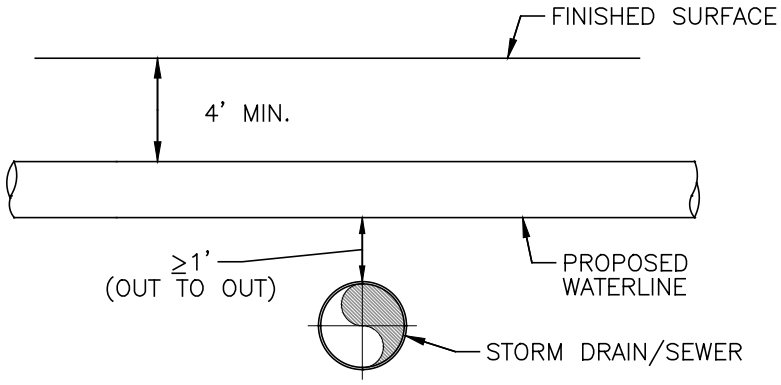
MINIMUM OF 2 GUARD POSTS ARE TO BE PLACED ON ALL APPURTENANCES (UNLESS DIRECTED BY JCSD), LOCATION TO BE DETERMINED BY INSPECTOR

REV. 1 4/2024 STD. DETAIL REVISION

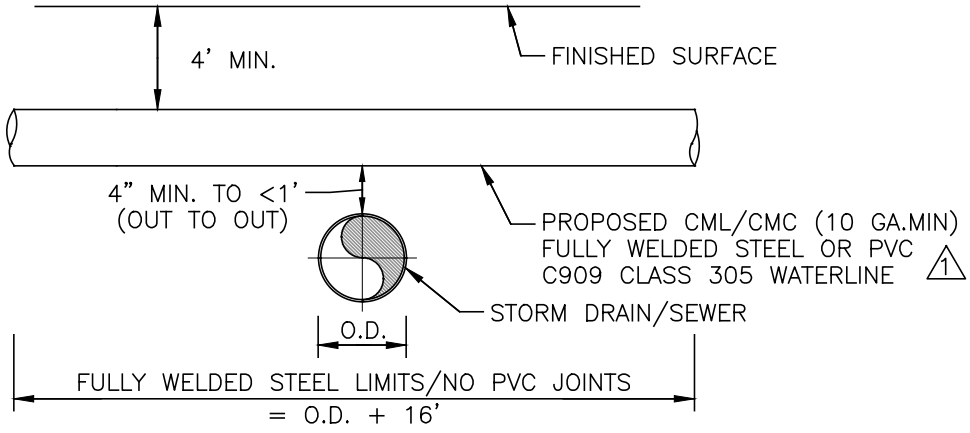
JURUPA COMMUNITY SERVICES DISTRICT

SCALE: NONE	STANDARD GUARD POST INSTALLATION	DRAWING NO. A-4
DATE: SEPTEMBER 2020		
APPROVED BY: _____ Sinnaro Yos, P.E. C68607	ALBERT A. WEBB ASSOCIATES CONSULTING ENGINEERS RIVERSIDE CALIFORNIA	W.O. 2023-3229

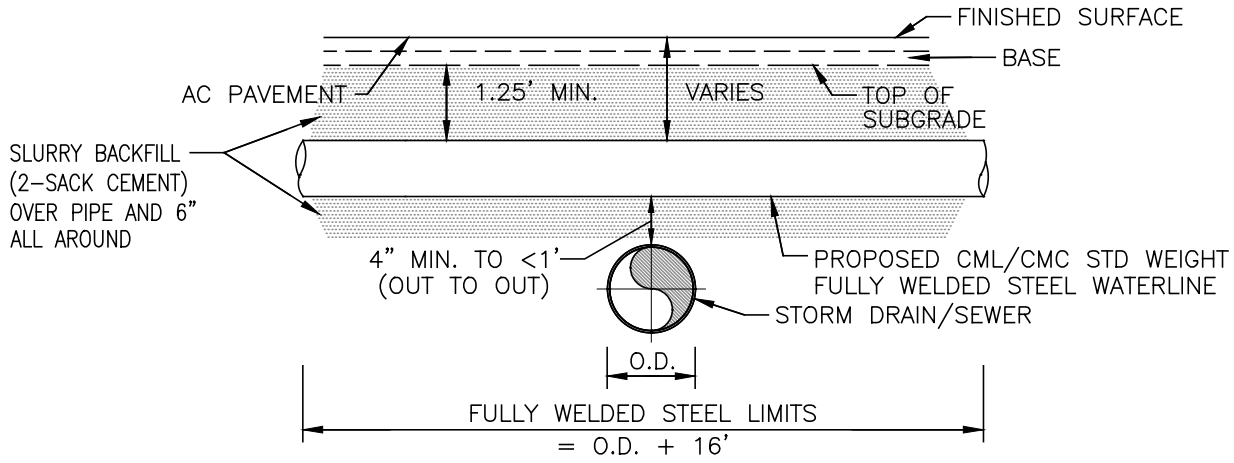
TYPE – 1 STANDARD COVER AND STANDARD SEPARATION



TYPE – 2 STANDARD COVER AND MINIMUM SEPARATION



TYPE – 3 SHALLOW COVER AND MINIMUM SEPARATION



NOTES:

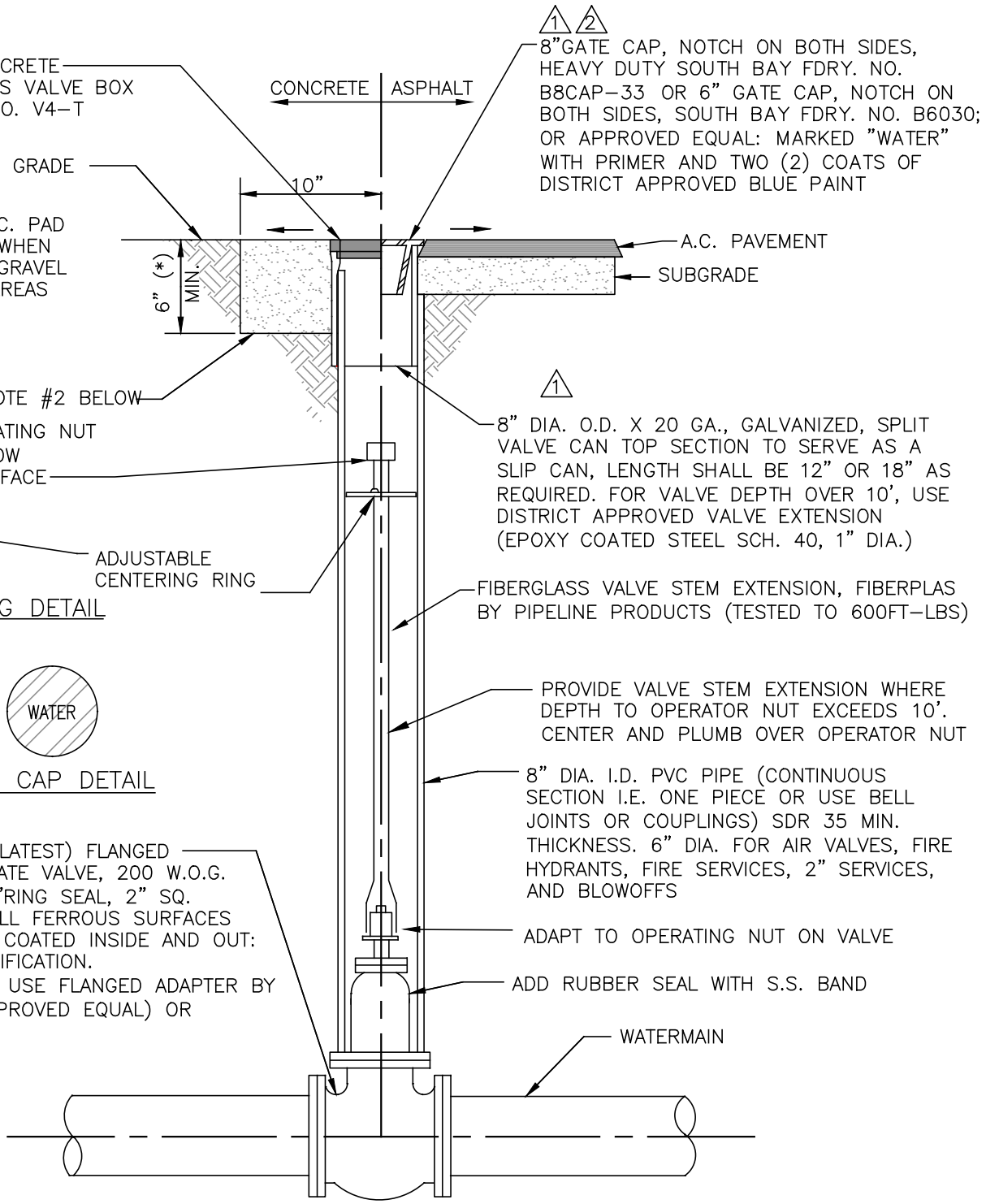
1. WHEN A HIGHPOINT OVER THE STORM DRAIN/SEWER IS CREATED, FOR TYPE–3, A SPECIAL CONSTRUCTION CALLOUT WILL BE NECESSARY ON THE PLANS TO PROTECT IN PLACE THE AIR VALVE DURING CONSTRUCTION.

2. WHEN A CROSSING OCCURS NEAR A TEE OR CROSS, FOR TYPE–3, THE USE OF A BUTTERFLY VALVE IN LIEU OF A GATE VALVE MAY BE REQUIRED, PER DISTRICT APPROVAL.

JURUPA COMMUNITY SERVICES DISTRICT

SCALE: NONE	WATERLINES CROSSING OVER STORM DRAINS/SEWERS	DRAWING NO. A–11
DATE: SEPTEMBER 2020		
APPROVED BY: _____ Sinnaro Yos, P.E. C68607	ALBERT A. WEBB ASSOCIATES CONSULTING ENGINEERS RIVERSIDE CALIFORNIA	W.O. 2023–3229

REV. 1 4/2024 STD. DETAIL REVISION



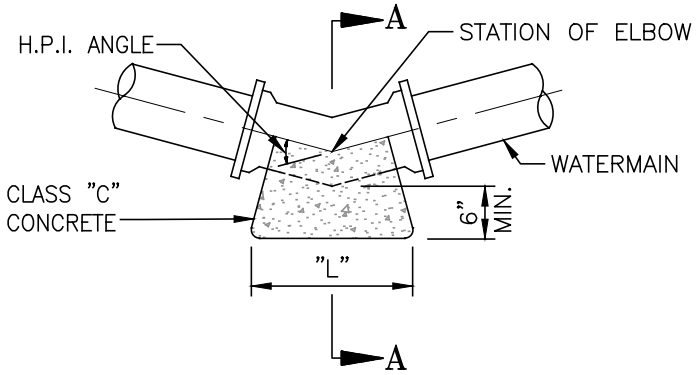
NOTES:

1. VALVE MARKER PER STD. NO. A-3 TO BE INSTALLED AS DIRECTED BY THE DISTRICT.
2. CLASS "B" CONCRETE PAD, 20" SQ. POURED AGAINST WELL COMPACTED EARTH, 90% MIN. RELATIVE COMPACTION AT FINISHED GRADE IN NON-PAVED AREAS.
3. UNLESS OTHERWISE SPECIFIED USE 8" DIA. VALVE COVER. 2

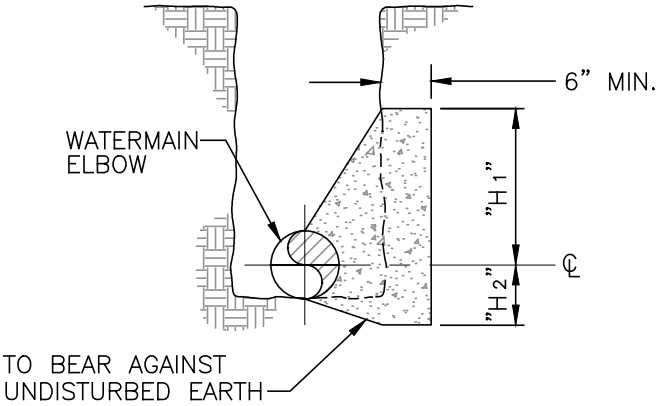
JURUPA COMMUNITY SERVICES DISTRICT

SCALE: NONE	GATE VALVE INSTALLATION	DRAWING NO. B-1
DATE: SEPTEMBER 2020		
APPROVED BY: _____ Sinnaro Yos, P.E. C68607	ALBERT A. WEBB ASSOCIATES CONSULTING ENGINEERS RIVERSIDE CALIFORNIA	W.O. 2023-3229

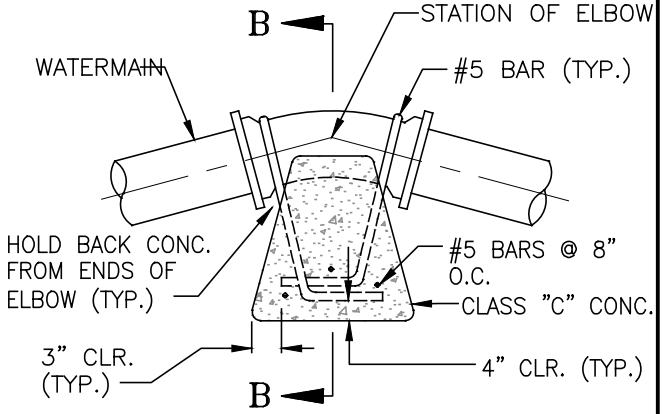
REV.
1 7/2021 STD. DETAIL REVISION
2 4/2024 STD. DETAIL REVISION



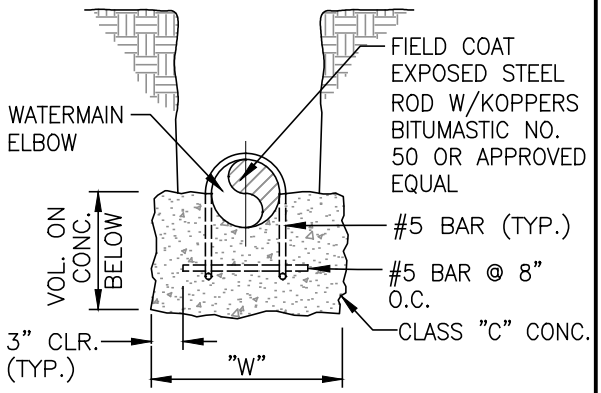
SECTIONAL PLAN



SECTION A–A



SECTIONAL ELEVATION



SECTION B–B

HORIZONTAL THRUST BLOCK

PIPE DIA.	"H1"	"H2"	"L"	H.P.I. ANGLE
4"	1/2" OD	1/2" OD	4'–0"	5° TO 41°
4"	4"	4"	4'–0"	42° TO 83°
4"	10"	5"	4'–0"	84° TO 104°
6"	1/2" OD	1/2" OD	4'–0"	5° TO 27°
6"	6"	6"	4'–0"	28° TO 51°
6"	1'–6"	9"	4'–0"	52° TO 90°
8"	1/2" OD	1/2" OD	4'–0"	5° TO 20°
8"	8"	8"	4'–0"	21° TO 36°
8"	1'–8"	10"	4'–0"	37° TO 54°
8"	2'–2"	13"	4'–0"	55° TO 78°
8"	2'–8"	16"	4'–0"	79° TO 111°
10"	1/2" OD	1/2" OD	4'–0"	5° TO 16°
10"	10"	10"	4'–0"	17° TO 28°
10"	1'–10"	11"	4'–0"	29° TO 39°
10"	2'–4"	14"	4'–0"	40° TO 53°
10"	2'–10"	17"	4'–0"	54° TO 70°
10"	2'–10"	17"	6'–0"	71° TO 120°
12"	1/2" OD	1/2" OD	4'–0"	5° TO 13°
12"	12"	12"	4'–0"	14° TO 22°
12"	2'–0"	12"	4'–0"	23° TO 30°
12"	2'–6"	15"	4'–0"	31° TO 40°
12"	3'–0"	18"	4'–0"	41° TO 52°
12"	3'–0"	18"	6'–0"	53° TO 83°

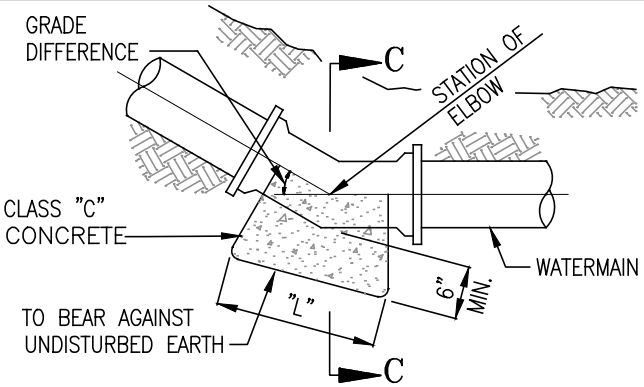
VERTICAL ANCHOR BLOCK

PIPE DIA.	"W"	VOLUME OF CONC. CF	GRADE% DIFFERENCE
4"	1'–6"	4 : 3	5 TO 15
4"	1'–6"	6 : 5	16 TO 25
4"	1'–6"	8 : 6	26 TO 35
4"	1'–6"	10 : 8	36 TO 45
4"	1'–6"	13 : 0	46 TO 55
4"	1'–6"	15 : 1	56 TO 65
6"	2'–0"	7 : 6	5 TO 10
6"	2'–0"	11 : 4	11 TO 25
6"	2'–0"	15 : 2	26 TO 40
6"	2'–0"	22 : 8	41 TO 55
8"	2'–0"	10 : 3	5 TO 10
8"	2'–0"	15 : 5	11 TO 20
8"	2'–0"	20 : 6	21 TO 30
8"	2'–0"	31 : 0	31 TO 40
8"	2'–0"	41 : 3	41 TO 55
10"	2'–6"	20 : 9	5 TO 15
10"	2'–6"	27 : 8	16 TO 25
10"	2'–6"	41 : 7	26 TO 35
10"	2'–6"	55 : 6	36 TO 45
10"	2'–6"	69 : 5	46 TO 55
12"	2'–6"	27 : 6	5 TO 15
12"	2'–6"	36 : 8	16 TO 25
12"	2'–6"	55 : 3	26 TO 35
12"	2'–6"	73 : 7	36 TO 45
12"	2'–6"	92 : 1	46 TO 55

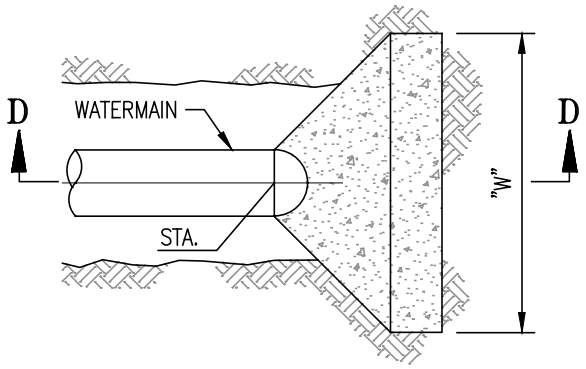
REV. 1 4/2024 STD. DETAIL REVISION

JURUPA COMMUNITY SERVICES DISTRICT

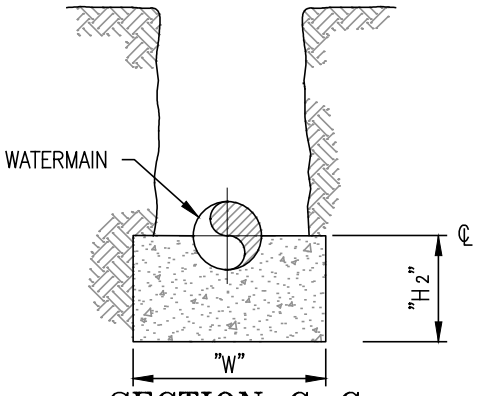
SCALE: NONE	THRUST BLOCKS W/O JOINT RESTRAINTS FOR D.I.P./PVC PIPELINES, CLASS 200 P.S.I. MAX.	DRAWING NO. C–1
DATE: SEPTEMBER 2020		SHEET 1 OF 2
APPROVED BY: Sinnaro Yos, P.E. C68607	ALBERT A. WEBB ASSOCIATES CONSULTING ENGINEERS RIVERSIDE CALIFORNIA	W.O. 2023–3229



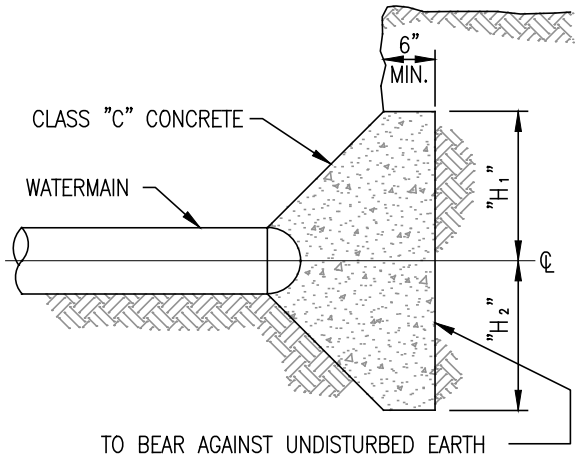
SECTIONAL ELEVATION



SECTIONAL PLAN



SECTION C–C



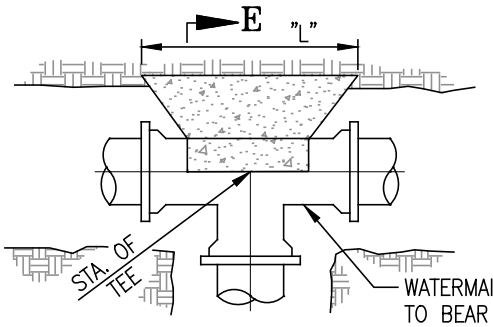
SECTION D–D

VERTICAL BEARER BLOCK

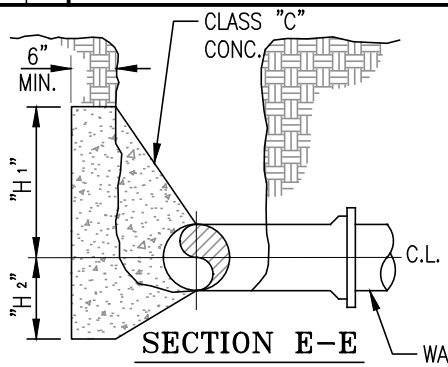
PIPE DIA.	"W"	"H 2"	"L"	GRADE % DIFF.
4"	1'–6"	8"	12"	5 TO 60
6"	2'–0"	9"	12"	5 TO 40
6"	2'–0"	9"	1'–6"	41 TO 55
8"	2'–0"	10"	12"	5 TO 25
8"	2'–0"	10"	1'–6"	26 TO 40
8"	2'–0"	10"	2'–0"	41 TO 55
10"	2'–6"	14"	12"	5 TO 10
10"	2'–6"	14"	2'–0"	11 TO 40
10"	2'–6"	14"	3'–0"	41 TO 60
12"	2'–6"	15"	2'–0"	5 TO 25
12"	2'–6"	15"	3'–0"	26 TO 45
12"	2'–6"	15"	4'–0"	46 TO 60

END THRUST BLOCK

PIPE DIA.	"H 1"	"H 2"	"W"
4"	9"	6"	3'–6"
6"	1'–6"	9"	4'–0"
8"	2'–2"	13"	4'–0"
10"	2'–10"	17"	4'–0"
12"	3'–0"	1'–6"	5'–0"



SECTIONAL PLAN



SECTION E–E

PIPE DIA.*	"H 1"	"H 2"	"W"
4"	9"	6"	3'–6"
6"	1'–6"	9"	4'–0"
8"	2'–2"	13"	4'–0"
10"	2'–10"	17"	4'–0"
12"	3'–0"	1'–6"	5'–0"

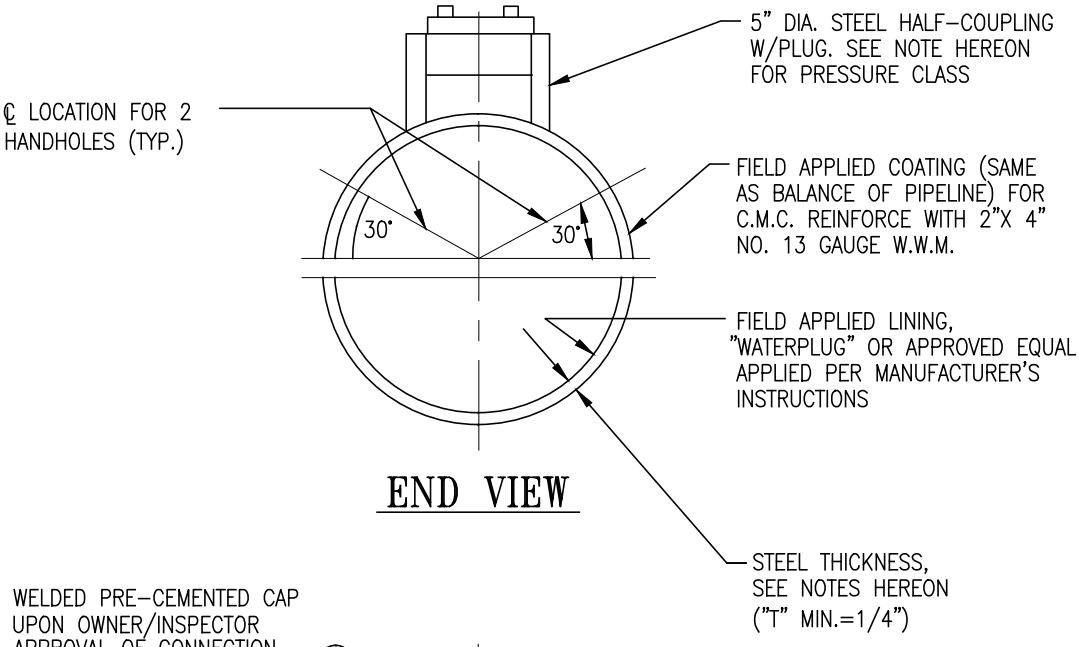
* USE OUTLET PIPE DIAMETER

TEE THRUST BLOCK

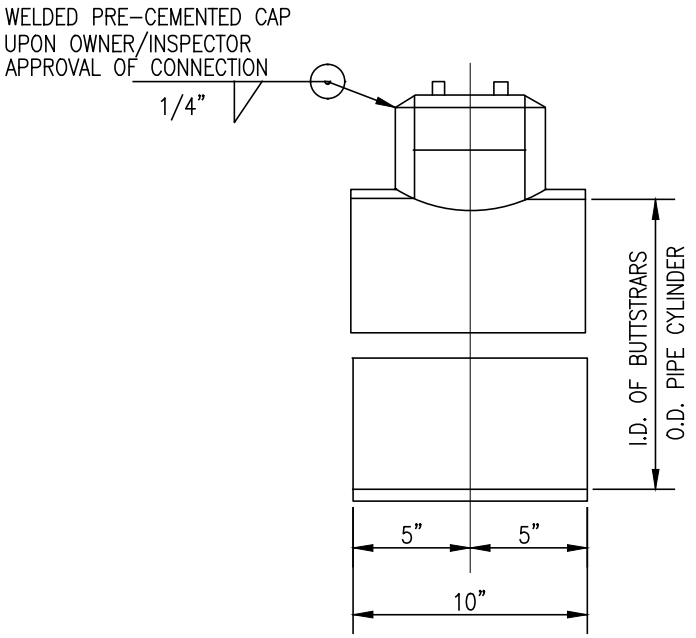
JURUPA COMMUNITY SERVICES DISTRICT

SCALE: NONE	THRUST BLOCKS W/O JOINT RESTRAINTS FOR D.I.P./PVC PIPELINES, CLASS 200 P.S.I. MAX.	DRAWING NO. C–1
DATE: SEPTEMBER 2020		SHEET 2 OF 2
APPROVED BY: Sinnaro Yos, P.E. C68607	ALBERT A. WEBB ASSOCIATES CONSULTING ENGINEERS RIVERSIDE CALIFORNIA	W.O. 2023–3229

REV. 1 4/2024 STD. DETAIL REVISION



END VIEW



SIDE VIEW

NOTES:

① 1 HANDHOLE REQUIRED FOR 4"ø PIPE THROUGH 14"ø PIPE.
② 2 HANDHOLES REQUIRED FOR 20"ø PIPE THROUGH 30"ø PIPE.
③ UP TO CLASS 200 PIPELINES:

"T" =1/4" FOR 4" DIA. THROUGH 30" DIA.
"T" = 5/16" FOR 36" DIA.
5" – BLACK, HALF-COUPLING, STD. WT.
5" – BLACK, CORED, BAR PLUG, STD. WT.

④ GREATER THAN CLASS 200 THROUGH CLASS 350 PIPELINES:

"T" = 1/4" FOR 4" DIA. THROUGH 20" DIA.
"T" = 5/16" FOR 24" DIA.
"T" = 3/8" FOR 30" DIA. & 36" DIA.
5" – BLACK, HALF-COUPLING, EXTRA HEAVY
5" – BLACK, SOLID, BAR PLUG, EXTRA HEAVY

⑤ 4 HANDHOLES REQUIRED FOR PIPE SIZES GREATER THAN 30" DIA.

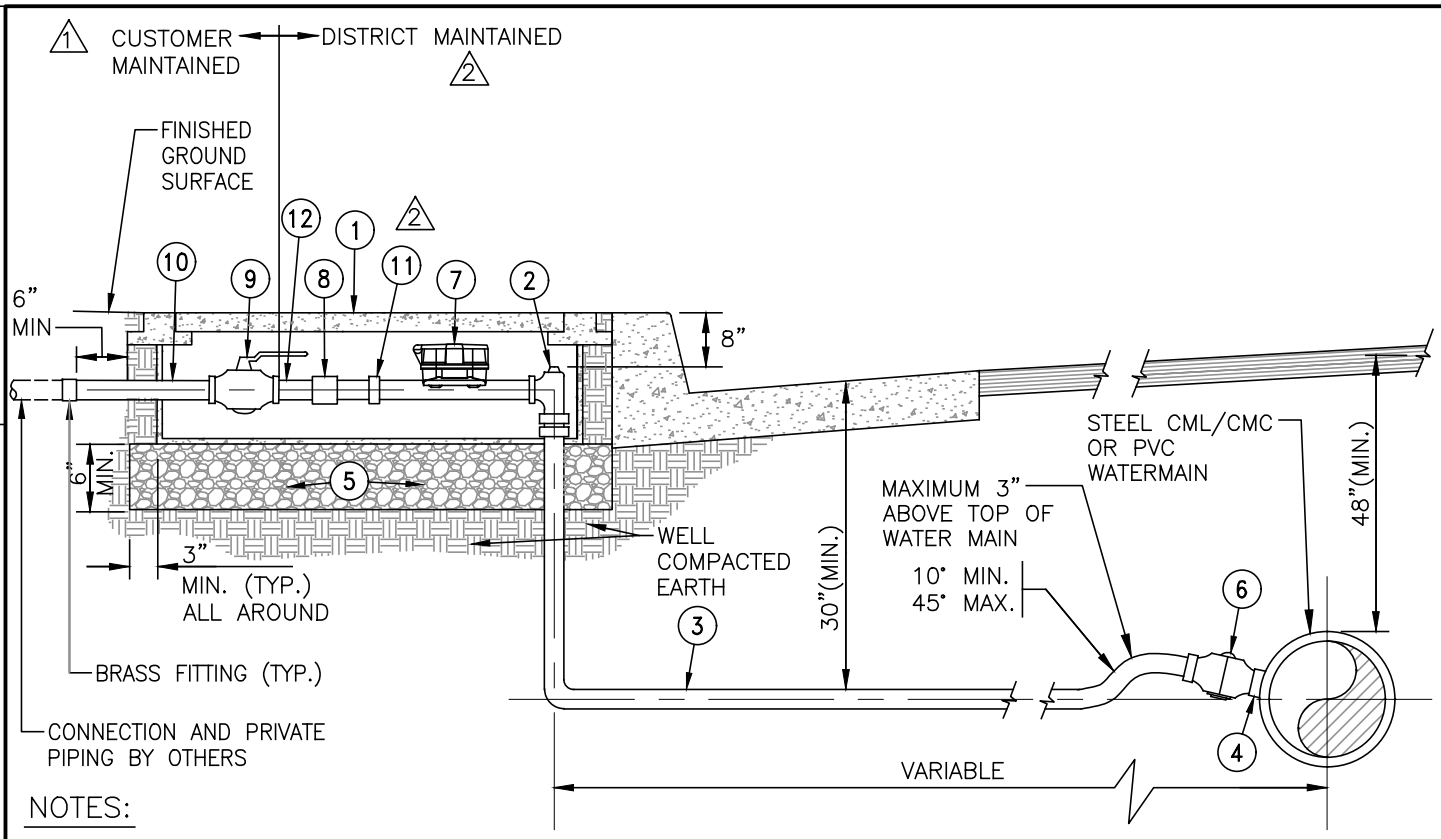
⑥ 4 HANDHOLES REQUIRED FOR PIPE SIZES GREATER

⑦ WEDDING BAND NOT ALLOWED

JURUPA COMMUNITY SERVICES DISTRICT

SCALE: NONE	TYPICAL BUTT STRAP CONNECTION CML/CMC PIPE	DRAWING NO. C-3
DATE: SEPTEMBER 2020		
APPROVED BY: _____ Sinnaro Yos, P.E. C68607	ALBERT A. WEBB ASSOCIATES CONSULTING ENGINEERS RIVERSIDE CALIFORNIA	W.O. 2023-3229

REV.



NOTES:

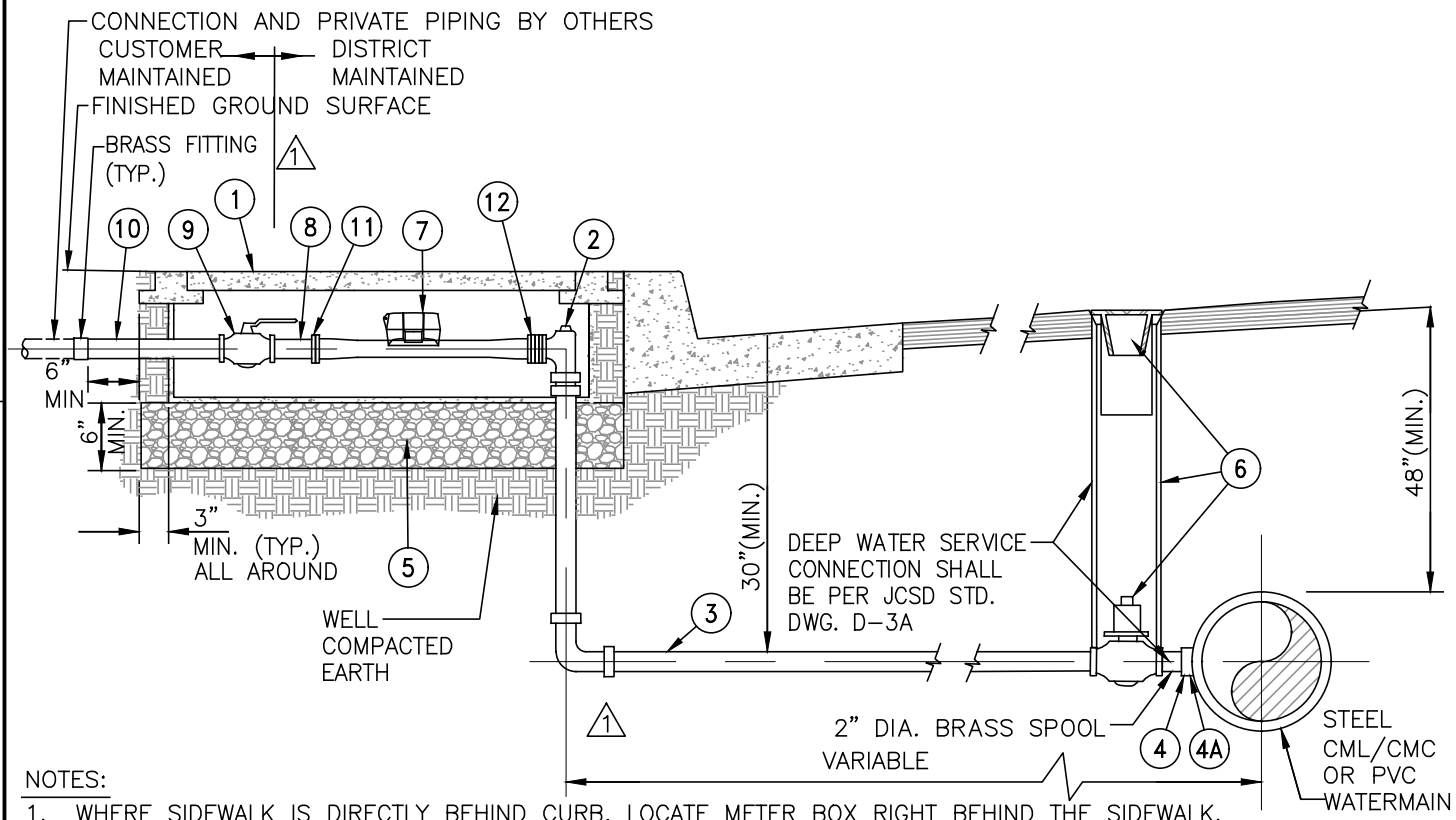
1. WHERE SIDEWALK IS DIRECTLY BEHIND CURB, LOCATE METER BOX RIGHT BEHIND THE SIDEWALK.
2. WHERE PARKWAY IS DIRECTLY BEHIND CURB, LOCATE METER BOX RIGHT BEHIND THE CURB
3. PIPE THREADS SHALL BE CLEAN AND SHARP AND SEALED WITH AN APPROVED JOINT COMPOUND.
4. METER SHALL NOT BE PLACED IN DRAINAGE AREA, DEPRESSIONS OR WITHIN TWO FEET OF A DRIVEWAY APPROACH.
5. DISTRICT MAINTAINED: ANGLE METER, METER, CHECK VALVE 2
6. CUSTOMER MAINTAINED: BRASS BALL VALVE.
7. FOR 1" METER INSTALLATION, SUBSTITUTE 1" DIMENSION WHERE 3/4" IS INDICATED.

ITEM	DESCRIPTION
1	J & R POLYMER CONCRETE METER BOX P–W 6B WITH TWO PIECE COVER OR APPROVED EQUAL. USE METER BOX P–W 6B–20K FOR INCIDENTAL TRAFFIC CONDITIONS, CHECK FOR H20 RATED (FOR E–METER READ, THE METER BOX LID SHALL HAVE QUICK READ PORT, BADGER METER ENDPOINT: ORION CELL–C).
2	1" x 3/4" BALL ANGLE METER STOP W/ LOCK WING
3	1" PLASTIC COATED COPPER TUBE, TYPE K, COPPER SHALL BE CONTINUOUS WITH NO JOINTS FROM SERVICE CONNECTION TO RISER.
4	BLK. STL. STD. COUPLING TO PIPE W/COLLAR PER STD. D–6 (FOR STEEL WATERMAIN) OR WATERMAIN DIA. X 1" SERVICE SADDLE PER DISTRICT SPECIFICATIONS (FOR PVC WATERMAIN)
5	3/4" DIA. CRUSHED ROCK
6	1" DIA. BALL CORP. STOP, I.P.T. INLET X PACK JOINT
7	3/4" OR 1" AMI ULTRASONIC METER, FURNISHED BY THE DISTRICT
8	1" DIA. BRASS PIPE W/ 1" DIA. BRONZE SPRING CHECK VALVE 1
9	1" BRASS BALL VALVE W/ HANDLE (1" X 12" BRASS PIPE), NOT REQUIRED WITH BACKFLOW SERVICE 1 2
10	MIN. 12" BRASS SPOOL WITH PROTECTIVE WRAP
11	3/4" x 1" METER TAIL FOR 1" METER ONLY
12	2" NIPPLE

JURUPA COMMUNITY SERVICES DISTRICT

SCALE: NONE	3/4" OR 1" METER, 1" WATER SERVICE DETAIL (W/OUT RESIDENTIAL FIRE SPRINKLERS)	DRAWING NO. D–1
DATE: SEPTEMBER 2020		
APPROVED BY: Sinnaro Yos, P.E. C68607	ALBERT A. WEBB ASSOCIATES CONSULTING ENGINEERS RIVERSIDE CALIFORNIA	W.O. 2023–3229

REV.
1 7/2021 STD. DETAIL REVISION
2 4/2024 STD. DETAIL REVISION



NOTES:

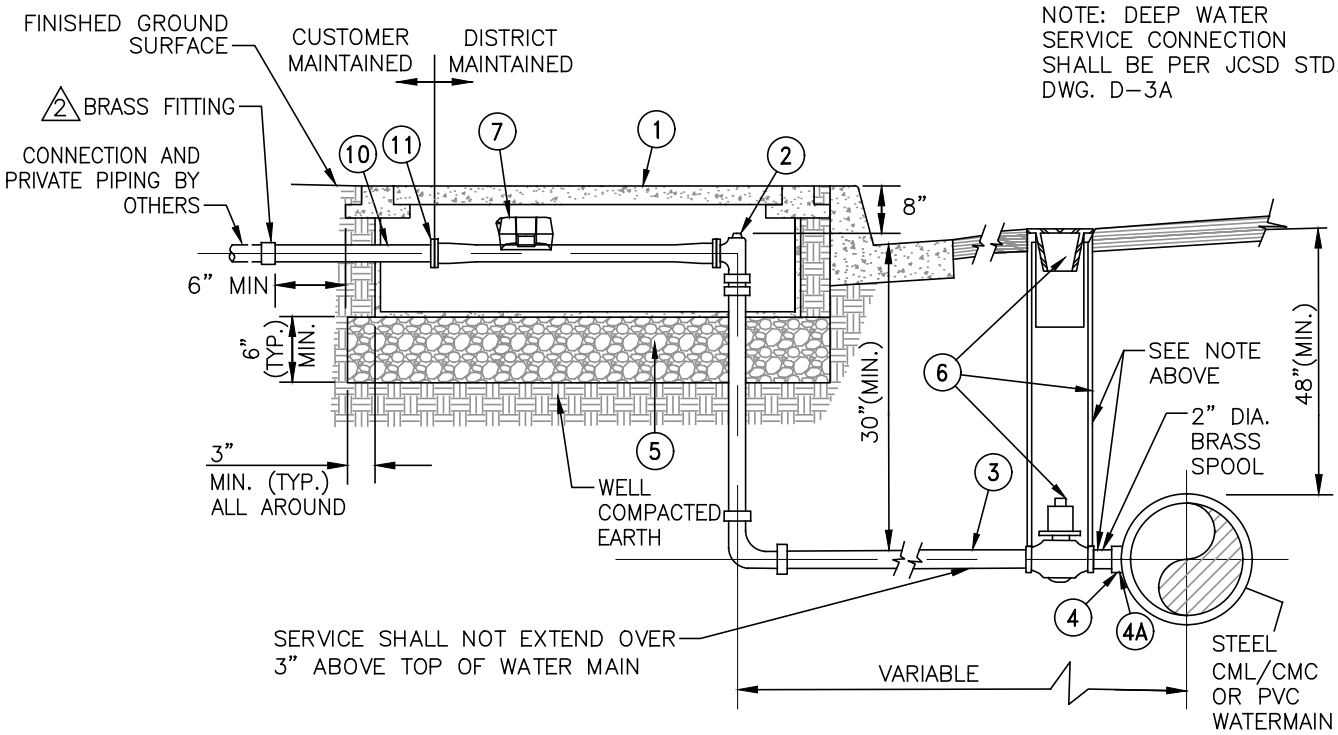
1. WHERE SIDEWALK IS DIRECTLY BEHIND CURB, LOCATE METER BOX RIGHT BEHIND THE SIDEWALK.
2. WHERE PARKWAY IS DIRECTLY BEHIND CURB, LOCATE METER BOX RIGHT BEHIND THE CURB.
3. PIPE THREADS SHALL BE CLEAN AND SHARP AND SEALED WITH AN APPROVED JOINT COMPOUND.
4. METER SHALL NOT BE PLACED IN DRAINAGE AREA, DEPRESSIONS OR WITHIN TWO FEET OF A DRIVEWAY APPROACH.
5. FOR 2" SERVICE INSTALLATION, SUBSTITUTE 2" DIMENSION WHERE 1-1/2" IS INDICATED.
6. DISTRICT MAINTAINED: ANGLE METER, METER, METER TAIL, CHECK VALVE, 2" NIPPLE
7. CUSTOMER MAINTAINED: BRASS BALL VALVE

ITEM	DESCRIPTION
(1)	J & R POLYMER CONCRETE METER BOX P-W 6B WITH TWO PIECE COVER OR APPROVED EQUAL. USE METER BOX P-W 6B-20K FOR INCIDENTAL TRAFFIC (H-20) CONDITIONS (FOR E-METER READ, THE METER BOX LID SHALL HAVE QUICK READ PORT, BADGER METER ENDPOINT: ORION CELL-C)
(2)	2" DIA. BRONZE BALL ANGLE METER STOP W/ LOCK WING AND 2" OVAL FLANGE
(3)	2" DIA. PLASTIC COATED COPPER PIPE, TYPE K, COPPER PIPE WITH BRONZE FITTING (PACK JOINT) FROM SERVICE CONNECTION TO RISER. 1
(4)	BLK. STL. STD. COUPLING TO PIPE W/ COLLAR PER STD. D-6 (FOR STEEL WATERMAIN) 1
(4A)	WATERMAIN DIA. x 2", SERVICE SADDLE PER DISTRICT SPECIFICATIONS (FOR PVC WATERMAIN)
(5)	3/4" DIA. CRUSHED ROCK
(6)	2" DIA. QUARTER TURN BALL VALVE W/ 2" SQ. OPERATING NUT, 6" DIA. VALVE CAN PER STD. DWG. B-1 (M.I.P. X COMPRESSION)
(7)	1-1/2" AMI ULTRASONIC METER, FURNISHED BY THE DISTRICT
(8)	1-1/2" DIA. BRASS PIPE
(9)	1-1/2" BRASS BALL VALVE W/ HANDLE. NOTE: NOT REQUIRED IF BACKFLOW ASSEMBLY IS REQUIRED
(10)	MIN. 12" BRASS SPOOL WITH PROTECTIVE WRAP
(11)	OVAL SHAPED FLANGE TO MATCH METER
(12)	2" OVAL FL. ADAPTER, 2"x1-1/2" BUSHING, 1-1/2" OVAL FL. ADAPTER

JURUPA COMMUNITY SERVICES DISTRICT

SCALE: NONE	1-1/2" METER, 2" WATER SERVICE DETAIL	DRAWING NO. D-2
DATE: SEPTEMBER 2020		
APPROVED BY: Sinnaro Yos, P.E. C68607	ALBERT A. WEBB ASSOCIATES CONSULTING ENGINEERS RIVERSIDE CALIFORNIA	W.O. 2023-3229

REV. 1 4/2024 STD. DETAIL REVISION



NOTES:

1. WHERE SIDEWALK IS DIRECTLY BEHIND CURB, LOCATE METER BOX RIGHT BEHIND THE SIDEWALK.
2. WHERE PARKWAY IS DIRECTLY BEHIND CURB, LOCATE METER BOX RIGHT BEHIND THE CURB.
3. PIPE THREADS SHALL BE CLEAN AND SHARP AND SEALED WITH AN APPROVED JOINT COMPOUND.
4. METER SHALL NOT BE PLACED IN DRAINAGE AREA, DEPRESSIONS OR WITHIN TWO FEET OF A DRIVEWAY APPROACH.
5. PROVIDE 2" BRASS BALL VALVE W/ HANDLE BEHIND METER IN METER BOX IF BACKFLOW DEVICE IS NOT INSTALLED.
6. COMPOUND METER REQUIRES A SEPARATE BOX.

ITEM	DESCRIPTION
(1)	J & R POLYMER CONCRETE METER BOX P-W 6B WITH TWO PIECE COVER OR APPROVED EQUAL. USE METER BOX P-W 6B-20K FOR INCIDENTAL TRAFFIC (H-20) CONDITIONS (FOR E-METER READ, THE METER BOX LID SHALL HAVE QUICK READ PORT, BADGER METER ENDPOINT: ORION CELL-C) 2
(2)	2" DIA. BRONZE BALL ANGLE METER STOP W/LOCK WING AND 2" OVAL FLANGE
(3)	2" DIA. PLASTIC COATED COPPER PIPE, TYPE K, COPPER PIPE WITH BRONZE FITTING (PACK JOINT) FROM SERVICE CONNECTION TO RISER. 1
(4)	BLK. STL. STD. COUPLING TO PIPE W/ COLLAR PER STD. D-6 (FOR STEEL WATERMAIN)
(4A)	WATERMAIN DIA. x 2", SERVICE SADDLE PER DISTRICT SPECIFICATIONS (FOR PVC WATERMAIN)
(5)	3/4" DIA. CRUSHED ROCK
(6)	2" DIA. QUARTER TURN BALL VALVE (MIP X COMPRESSION) W/ 2" SQ. OPERATING NUT, 6" DIA. VALVE CAN PER STD. DWG. B-1
(7)	2" AMI ULTRASONIC METER, FURNISHED BY THE DISTRICT
(8)	NOT USED
(9)	NOT USED
(10)	2" BRASS PIPE WITH PROTECTIVE WRAP, FIELD ADJUST
(11)	OVAL SHAPED FLANGE TO MATCH METER

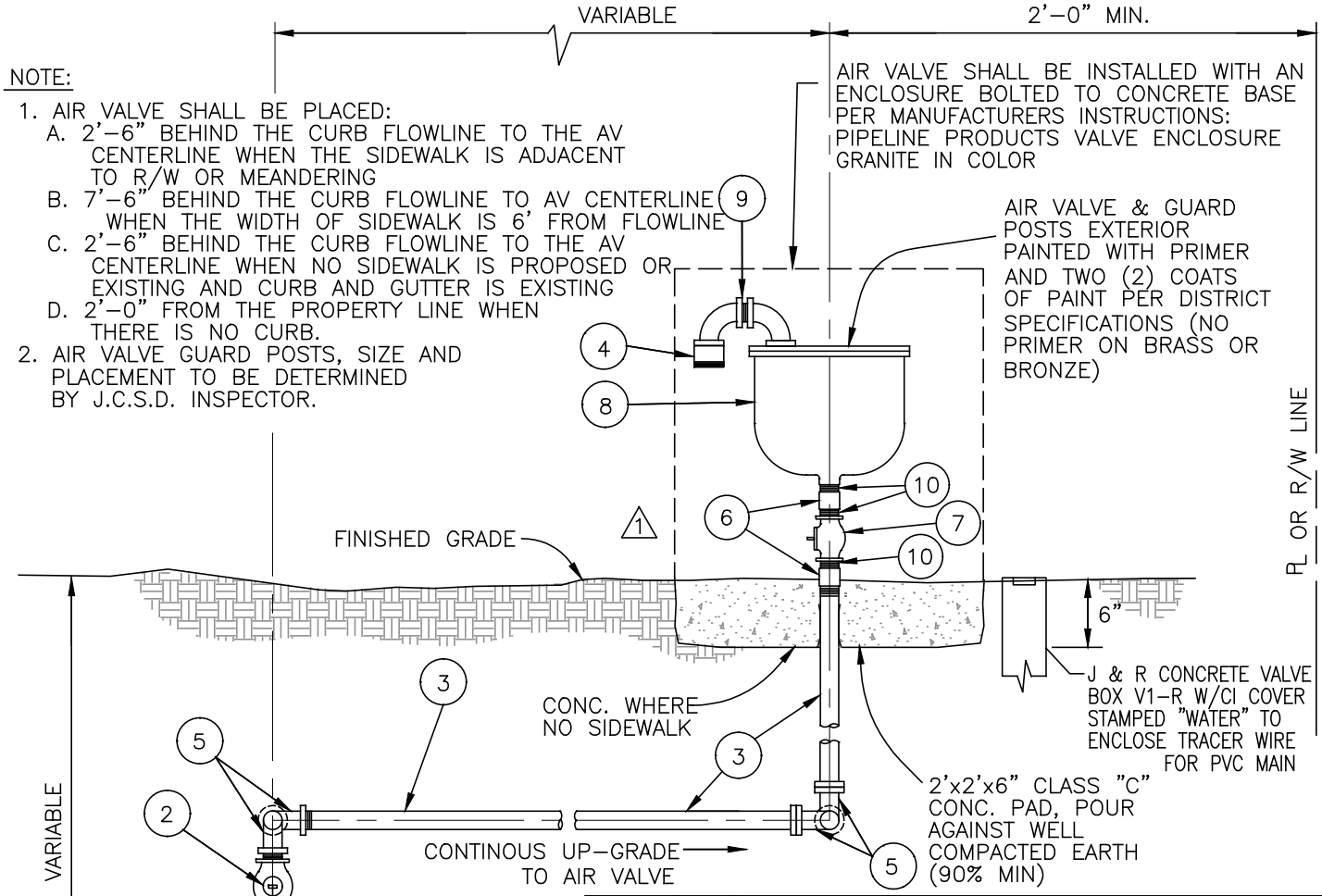
JURUPA COMMUNITY SERVICES DISTRICT

SCALE: NONE	2" METER, 2" WATER SERVICE DETAIL	DRAWING NO. D-3
DATE: SEPTEMBER 2020		
APPROVED BY: _____ Sinnaro Yos, P.E. C68607	ALBERT A. WEBB ASSOCIATES CONSULTING ENGINEERS RIVERSIDE CALIFORNIA	W.O. 2023-3229

REV.
1 7/2021 STD. DETAIL REVISION
2 4/2024 STD. DETAIL REVISION

NOTE:

1. AIR VALVE SHALL BE PLACED:
   A. 2'–6" BEHIND THE CURB FLOWLINE TO THE AV CENTERLINE WHEN THE SIDEWALK IS ADJACENT TO R/W OR MEANDERING
   B. 7'–6" BEHIND THE CURB FLOWLINE TO AV CENTERLINE WHEN THE WIDTH OF SIDEWALK IS 6' FROM FLOWLINE
   C. 2'–6" BEHIND THE CURB FLOWLINE TO THE AV CENTERLINE WHEN NO SIDEWALK IS PROPOSED OR EXISTING AND CURB AND GUTTER IS EXISTING
   D. 2'–0" FROM THE PROPERTY LINE WHEN THERE IS NO CURB.
2. AIR VALVE GUARD POSTS, SIZE AND PLACEMENT TO BE DETERMINED BY J.C.S.D. INSPECTOR.



ITEM	DESCRIPTION
1	STD. BLK. COUPLING WELDED TO TOP OF WATERMAIN PER STD. D–6
2	CORP STOP, JAMES JONES NO. E1943, MUELLER B–20013N OR APPR. EQUAL (FOR SHALLOW COVER CAN BE INSTALLED ON RUN IN LIEU OF RISE)
3	STD. WT. BRASS PIPE IN PLASTIC WRAP
4	NORTHTOWN 10 MESH BUG SCREEN OR APPROVED EQUAL
5	TWO (2) STD. WT. BRASS 90° ELBOWS IN PLASTIC WRAP CONNECTED END–TO–END TO FORM A SWIVEL JOINT
6	EXTRA HEAVY BRASS COUPLING (4" LONG) AT SURFACE AND PARTIALLY RECESSED IN CONCRETE
7	BRASS BALL VALVE AS APPROVED BY DISTRICT
8	AIR RELEASE VALVE AS APPROVED BY DISTRICT
9	STD. BLK. 90° ST. ELBOW, 3" LONG STD. BLK. NIPPLE THREADED TWO ENDS, STD. BLK. 90° ELBOW, & 3" LONG STD. BLK. NIPPLE THREADED ONE END, ORIENTED TO CLEAR AIR VALVE BODY
10	EXTRA HEAVY BRASS PIPE NIPPLE THREADED BOTH ENDS 3"

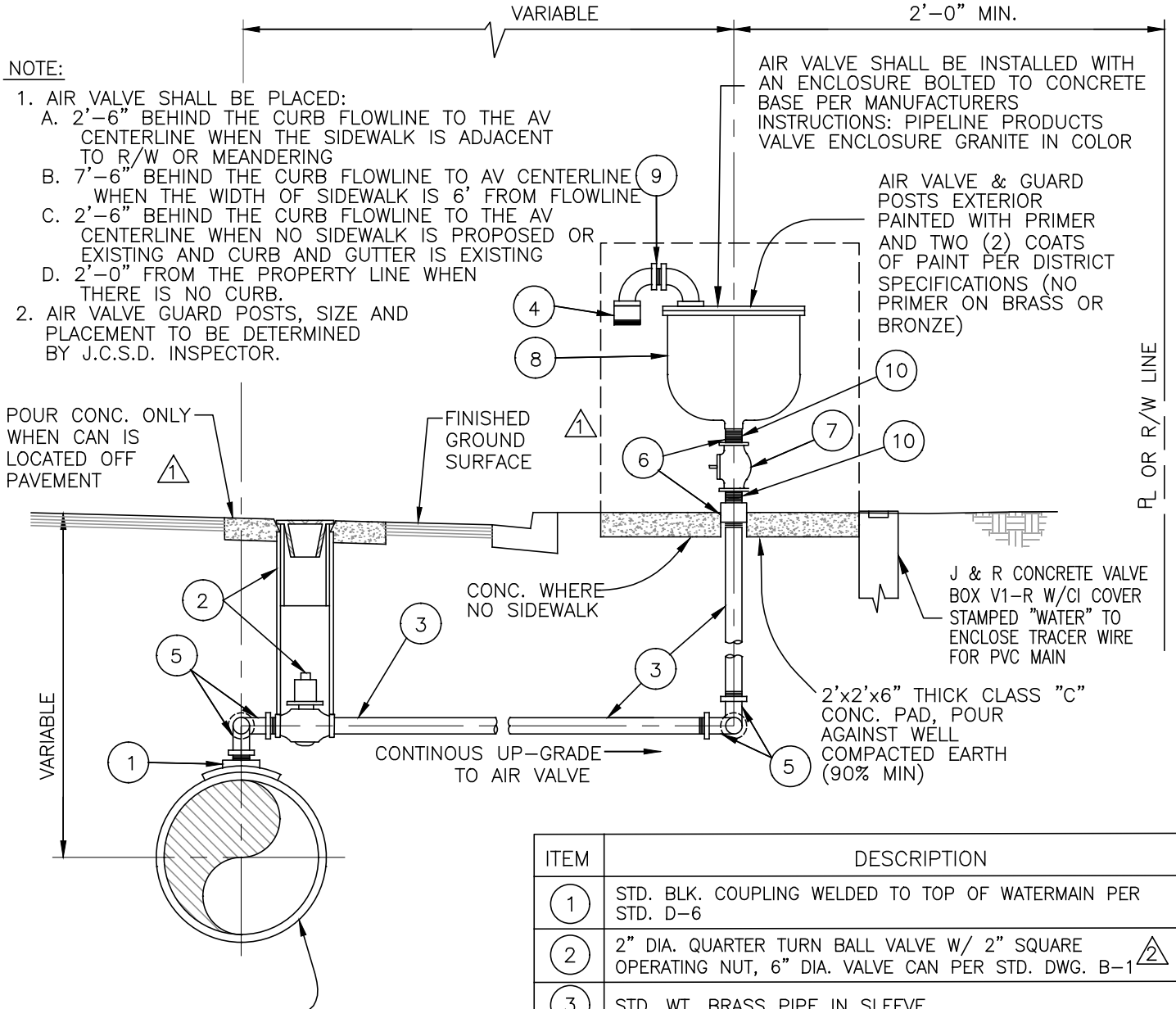
NOTE:

1. ALL PIPE, FITTINGS, AND VALVES SHALL BE SAME DIA. AS AIR VALVE INLET.
2. PIPE THREADS SHALL BE CLEAN AND SHARP AND SEALED WITH AN APPROVED JOINT COMPOUND
3. A.R.I. OR APPROVED EQUAL. △1
4. MINIMUM AIR VALVE ENCLOSURE SIZE FOR A.R.I. VALVES SHALL BE 18"X30". △1

REV. 1 4/2024 STD. DETAIL REVISION

JURUPA COMMUNITY SERVICES DISTRICT

SCALE: NONE	AIR VALVE INSTALLATION 1" DIA.	DRAWING NO. E–1
DATE: SEPTEMBER 2020		
APPROVED BY: _____ Sinnaro Yos, P.E. C68607	ALBERT A. WEBB ASSOCIATES CONSULTING ENGINEERS RIVERSIDE CALIFORNIA	W.O. 2023–3229



NOTE:

1. AIR VALVE SHALL BE PLACED:
   A. 2'-6" BEHIND THE CURB FLOWLINE TO THE AV CENTERLINE WHEN THE SIDEWALK IS ADJACENT TO R/W OR MEANDERING
   B. 7'-6" BEHIND THE CURB FLOWLINE TO AV CENTERLINE WHEN THE WIDTH OF SIDEWALK IS 6' FROM FLOWLINE
   C. 2'-6" BEHIND THE CURB FLOWLINE TO THE AV CENTERLINE WHEN NO SIDEWALK IS PROPOSED OR EXISTING AND CURB AND GUTTER IS EXISTING
   D. 2'-0" FROM THE PROPERTY LINE WHEN THERE IS NO CURB.
2. AIR VALVE GUARD POSTS, SIZE AND PLACEMENT TO BE DETERMINED BY J.C.S.D. INSPECTOR.

ITEM	DESCRIPTION
1	STD. BLK. COUPLING WELDED TO TOP OF WATERMAIN PER STD. D-6
2	2" DIA. QUARTER TURN BALL VALVE W/ 2" SQUARE OPERATING NUT, 6" DIA. VALVE CAN PER STD. DWG. B-1 △2
3	STD. WT. BRASS PIPE IN SLEEVE.
4	NORTHTOWN 10 MESH BUG SCREEN OR APPROVED EQUAL
5	TWO (2) STD. WT. BRASS 90° ELBOWS IN PLASTIC WRAP CONNECTED END-TO-END TO FORM A SWIVEL JOINT
6	EXTRA HEAVY BRASS COUPLING (4" LONG) AT SURFACE AND PARTIALLY RECESSED IN CONCRETE
7	BRASS BALL VALVE AS APPROVED BY DISTRICT
8	AIR RELEASE VALVE AS APPROVED BY DISTRICT
9	STD. BLK. 90° ST. ELBOW, 3" LONG STD. BLK. NIPPLE THREADED TWO ENDS, STD. BLK. 90° ELBOW, & 3" LONG STD. BLK. NIPPLE THREADED ONE END, ORIENTED TO CLEAR AIR VALVE BODY
10	EXTRA HEAVY BRASS PIPE NIPPLE THREADED BOTH ENDS 3"

NOTE:

1. ALL PIPE, FITTINGS, AND VALVES SHALL BE SAME DIA. AS AIR VALVE INLET.
2. PIPE THREADS SHALL BE CLEAN AND SHARP AND SEALED WITH AN APPROVED JOINT COMPOUND
3. A.R.I. OR APPROVED EQUAL. △2
4. MINIMUM AIR VALVE ENCLOSURE SIZE FOR A.R.I. VALVES SHALL BE 18"X30". △2

JURUPA COMMUNITY SERVICES DISTRICT

SCALE: NONE	2" DIA. AIR VALVE INSTALLATION W/ BALL VALVE	DRAWING NO. E-1A
DATE: SEPTEMBER 2020		
APPROVED BY: _____ Sinnaro Yos, P.E. C68607	ALBERT A. WEBB ASSOCIATES CONSULTING ENGINEERS RIVERSIDE CALIFORNIA	W.O. 2023-3229

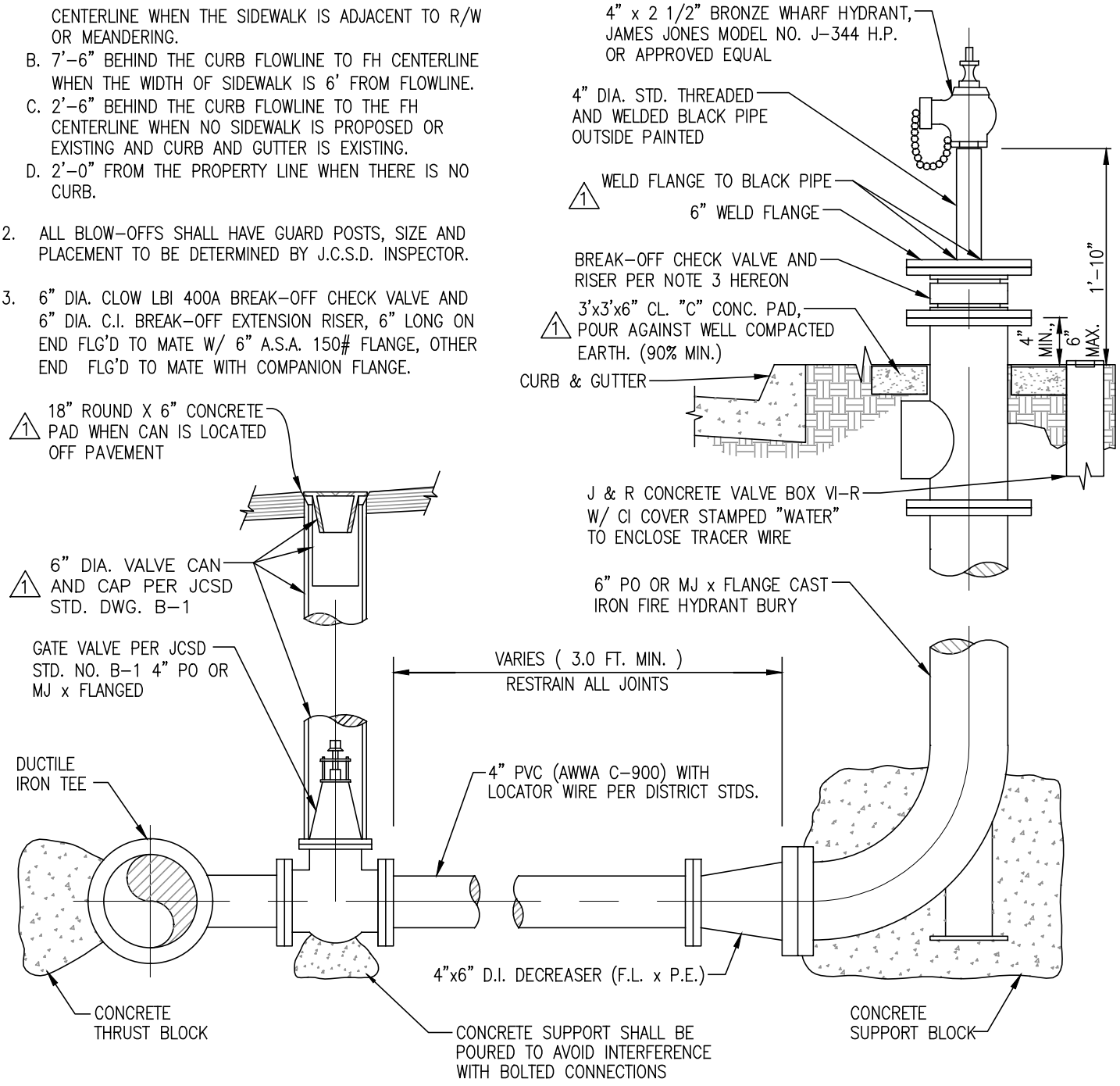
REV.
△1 7/2021 STD. DETAIL REVISION
△2 4/2024 STD. DETAIL REVISION

NOTE:

1. BLOW–OFF SHALL BE PLACED:
   A. 2'–6" BEHIND THE CURB FLOWLINE TO THE FH CENTERLINE WHEN THE SIDEWALK IS ADJACENT TO R/W OR MEANDERING.
   B. 7'–6" BEHIND THE CURB FLOWLINE TO FH CENTERLINE WHEN THE WIDTH OF SIDEWALK IS 6' FROM FLOWLINE.
   C. 2'–6" BEHIND THE CURB FLOWLINE TO THE FH CENTERLINE WHEN NO SIDEWALK IS PROPOSED OR EXISTING AND CURB AND GUTTER IS EXISTING.
   D. 2'–0" FROM THE PROPERTY LINE WHEN THERE IS NO CURB.

2. ALL BLOW–OFFS SHALL HAVE GUARD POSTS, SIZE AND PLACEMENT TO BE DETERMINED BY J.C.S.D. INSPECTOR.

3. 6" DIA. CLOW LBI 400A BREAK–OFF CHECK VALVE AND 6" DIA. C.I. BREAK–OFF EXTENSION RISER, 6" LONG ON END FLG'D TO MATE W/ 6" A.S.A. 150# FLANGE, OTHER END FLG'D TO MATE WITH COMPANION FLANGE.



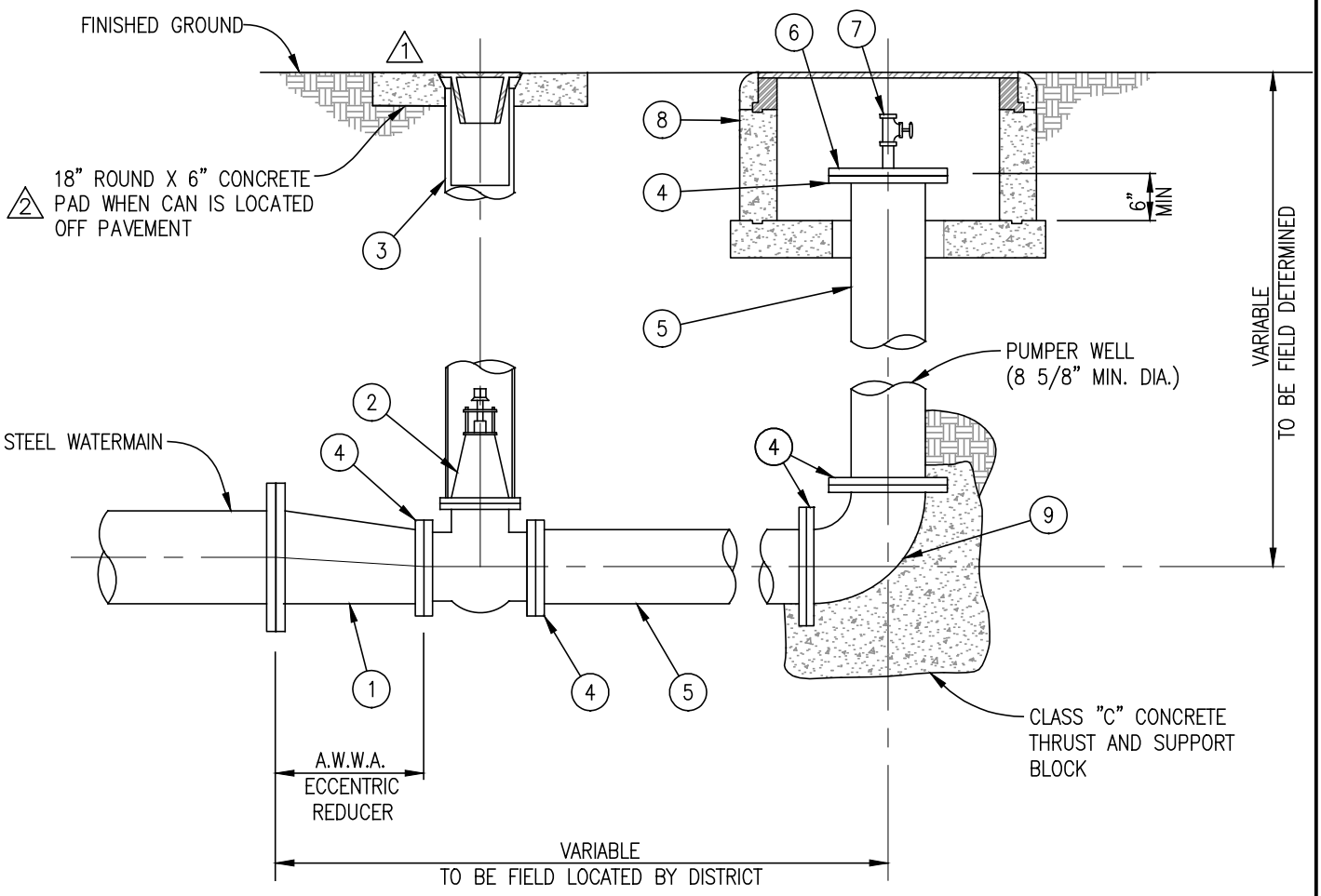
EXTERIOR PAINTED W/ PRIMER AND TWO (2) COATS OF PAINT PER DISTRICT SPECIFICATIONS (NO PRIMER ON BRASS OR BRONZE).

JURUPA COMMUNITY SERVICES DISTRICT

SCALE: NONE	4" BLOW–OFF ASSEMBLY (PVC PIPE)	DRAWING NO. F–1A
DATE: SEPTEMBER 2020		
APPROVED BY: _____ Sinnaro Yos, P.E. C68607	ALBERT A. WEBB ASSOCIATES CONSULTING ENGINEERS RIVERSIDE CALIFORNIA	W.O. 2023–3229

REV.
1 4/2024 STD. DETAIL REVISION

NOTE: DISTRICT DIRECTED USE ONLY



ITEM	DESCRIPTION
1	LINE SIZE x 4" DIA. A.W.W.A. FLGD. REDUCER, 10 GA., CML/CMC
2	4" GATE VALVE PER STD. B-1
3	VALVE BOX INSTALLATION PER STD. B-1
4	A.S.A. 150 LB. SLIP-ON FLANGES (SHIP LOOSE FOR FIELD WELDING)
5	WELDED STEEL PIPE, 10 GA. MIN., CML/CMC
6	A.S.A. 150 LB. REDUCING SCR. COMPANION FLANGE (2" x 9")
7	2-1/2" DIA. SCREWED FIRE PROTECTION G.V. I.P.T. x N.S.T. W/HOSE CAP & SAFETY CHAIN, ALL BRONZE, NRS, W/MAL. IRON HAND WHEEL, 175 PSI MWWP NIBCO MODEL NO T-103-HC OR APPR. EQ.
8	TYPICAL BLOW-OFF MANHOLE PER STD. I-3
9	4" DIA. STD. WT. LONG RADIUS CML/CMC 90° BEND

JURUPA COMMUNITY SERVICES DISTRICT

SCALE: NONE	4" END OF LINE BLOW-OFF INSTALLATION	DRAWING NO. F-4
DATE: SEPTEMBER 2020		
APPROVED BY: _____ Sinnaro Yos, P.E. C68607	ALBERT A. WEBB ASSOCIATES CONSULTING ENGINEERS RIVERSIDE CALIFORNIA	W.O. 2023-3229

REV.
1 7/2021 STD. DETAIL REVISION
2 4/2024 STD. DETAIL REVISION

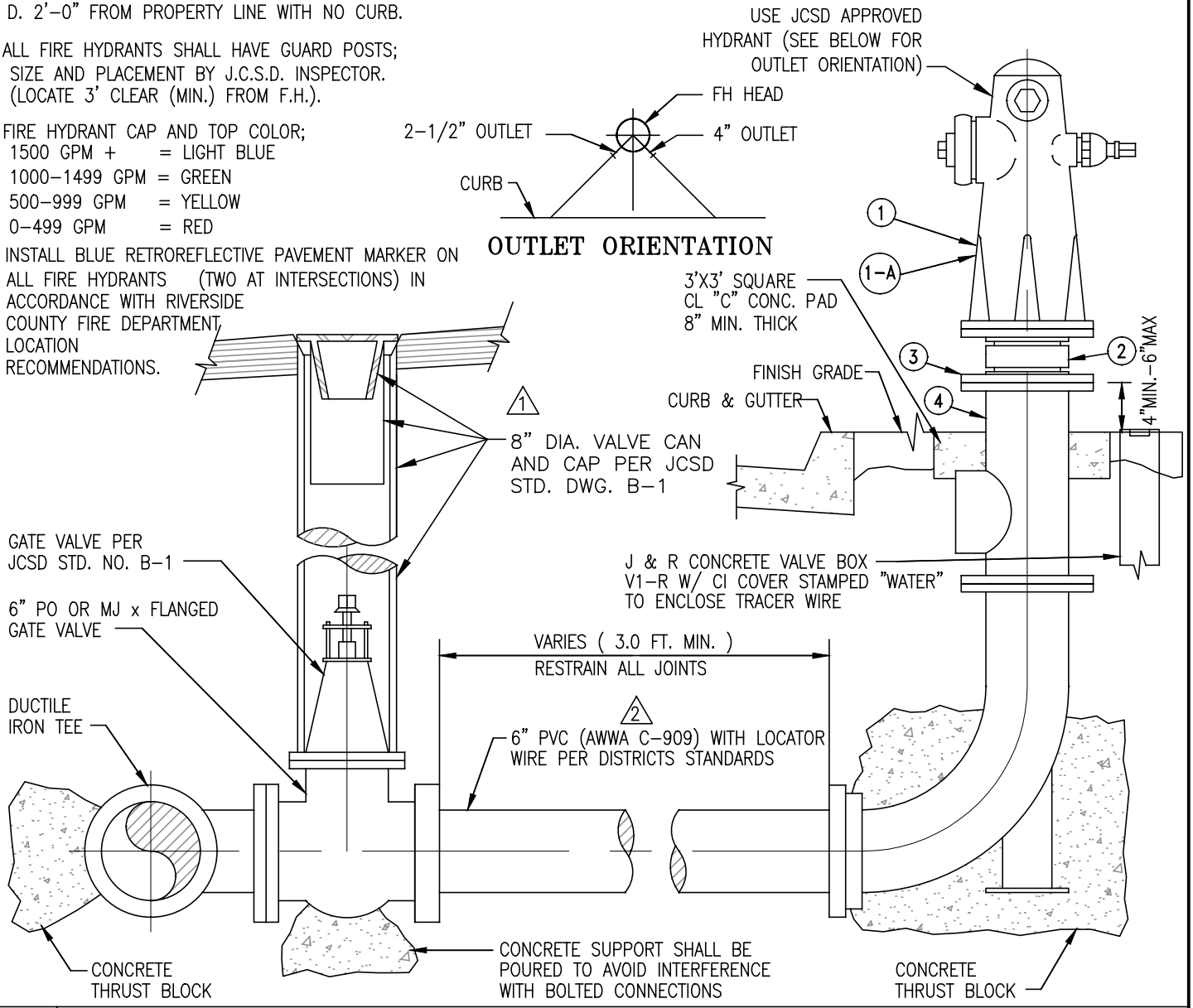
1. FIRE HYDRANT SHALL BE PLACED:
   A. 2'–6" BEHIND THE CURB FLOWLINE TO THE FH CENTERLINE WHEN THE SIDEWALK IS ADJACENT TO R/W OR MEANDERING
   B. 7'–6" BEHIND THE CURB FLOWLINE TO FH CENTERLINE WHEN THE WIDTH OF SIDEWALK IS 6' FROM FLOWLINE
   C. 2'–6" BEHIND THE CURB FLOWLINE TO THE FH CENTERLINE WHEN NO SIDEWALK IS PROPOSED OR EXISTING AND CURB AND GUTTER IS EXISTING
   D. 2'–0" FROM PROPERTY LINE WITH NO CURB.

2. ALL FIRE HYDRANTS SHALL HAVE GUARD POSTS; SIZE AND PLACEMENT BY J.C.S.D. INSPECTOR. (LOCATE 3' CLEAR (MIN.) FROM F.H.).

3. FIRE HYDRANT CAP AND TOP COLOR;
   1500 GPM + = LIGHT BLUE
   1000–1499 GPM = GREEN
   500–999 GPM = YELLOW
   0–499 GPM = RED

4. INSTALL BLUE RETROREFLECTIVE PAVEMENT MARKER ON ALL FIRE HYDRANTS (TWO AT INTERSECTIONS) IN ACCORDANCE WITH RIVERSIDE COUNTY FIRE DEPARTMENT LOCATION RECOMMENDATIONS.

OUTLET ORIENTATION



ITEM	DESCRIPTION
1	STANDARD DUCTILE IRON BODY FIRE HYDRANT, HEAD & FLUTED SPOOL COMPLETE. 1–4" STEAMER HOSE OUTLET & 1–2 1/2 HOSE OUTLET, 6 HOLE PATTERN, JAMES JONES MODEL J–4040, W/BRONZE OR PLASTIC CAPS AND CHAIN. 1
* 1–A	SUPER FIRE HYDRANT, COMPLETE; 1–4" STEAMER HOSE OUTLET AND 2–2 1/2" HOSE OUTLETS, 8 HOLE PATTERN, JAMES JONES MODEL J–4040, W/BRONZE OR PLASTIC CAPS AND CHAIN. 1
2	6" DIA. C.I. BREAK–OFF SPOOL, 6" LONG, ONE END FLG'D. TO MATE W/6" A.S.A. 150# SLIP–ON FLG., OTHER END FLG'D. TO MATE HYDRANT SPOOL. (SHOP FABRICATED).
3	6" A.S.A. 150# SLIP–ON FLG. TO MATE BREAK–OFF SPOOL. SHIP LOOSE FOR FIELD WELDING.
4	6" DIA. CLOW LBIW # 400A BREAK–OFF CHECK VALVE.

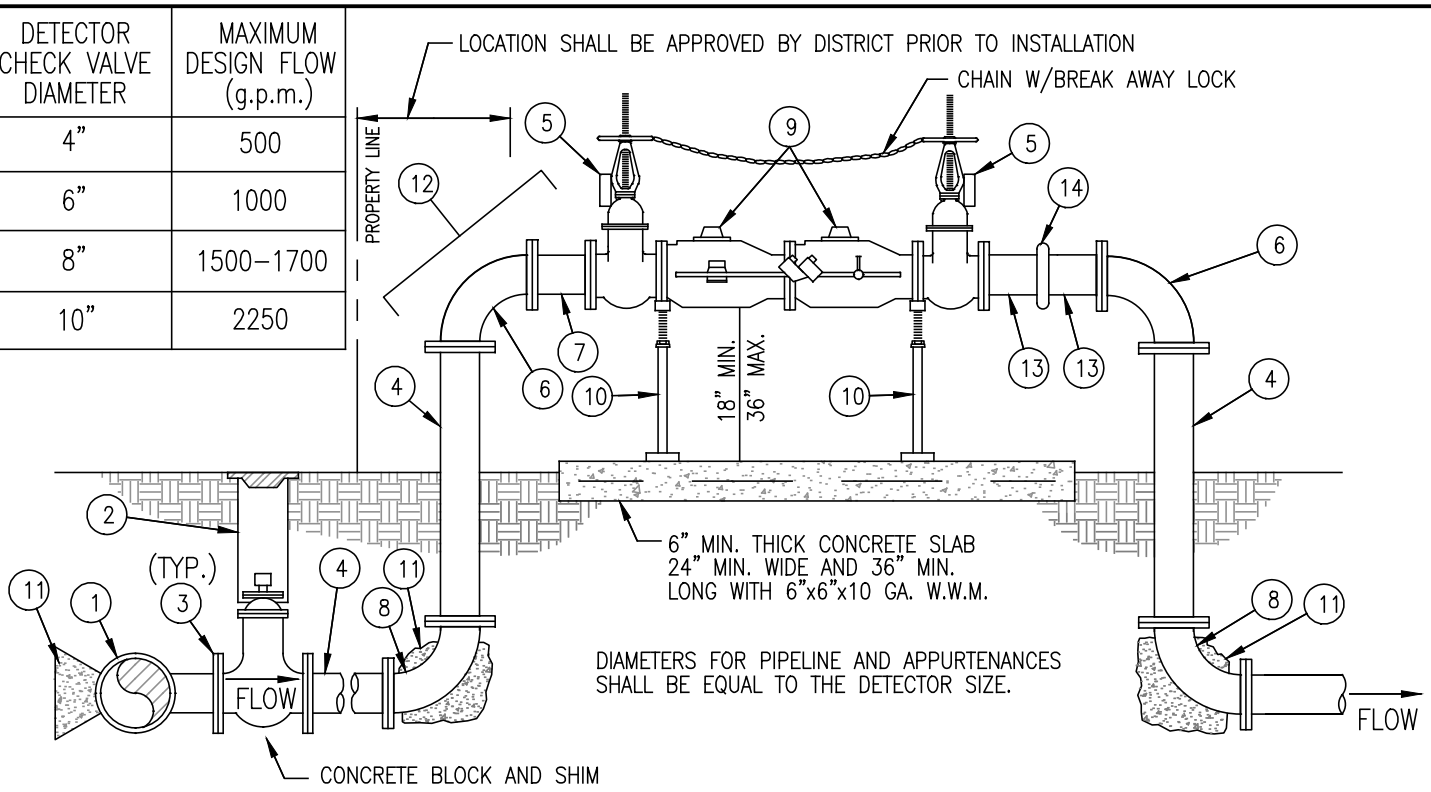
* UNLESS A "SUPER" FIRE HYDRANT IS DESIGNATED ON THE DRAWINGS, FIRE HYDRANT SHALL BE "STANDARD" PER (1) ITEM WHERE A "SUPER" FIRE HYDRANT IS SPECIFIED, HYDRANT SHALL BE PER ITEM. (1–A)

JURUPA COMMUNITY SERVICES DISTRICT

SCALE: NONE	TYPICAL 6" FIRE HYDRANT INSTALLATION – PVC, DI PIPE	DRAWING NO. G–2 G–2A
DATE: SEPTEMBER 2020		
APPROVED BY: _____ Sinnaro Yos, P.E. C68607	ALBERT A. WEBB ASSOCIATES CONSULTING ENGINEERS RIVERSIDE CALIFORNIA	W.O. 2023–3229

REV.
2 4/2024 STD. DETAIL REVISION
1 7/2021 STD. DETAIL REVISION

DETECTOR CHECK VALVE DIAMETER	MAXIMUM DESIGN FLOW (g.p.m.)
4"	500
6"	1000
8"	1500–1700
10"	2250



NOTES:

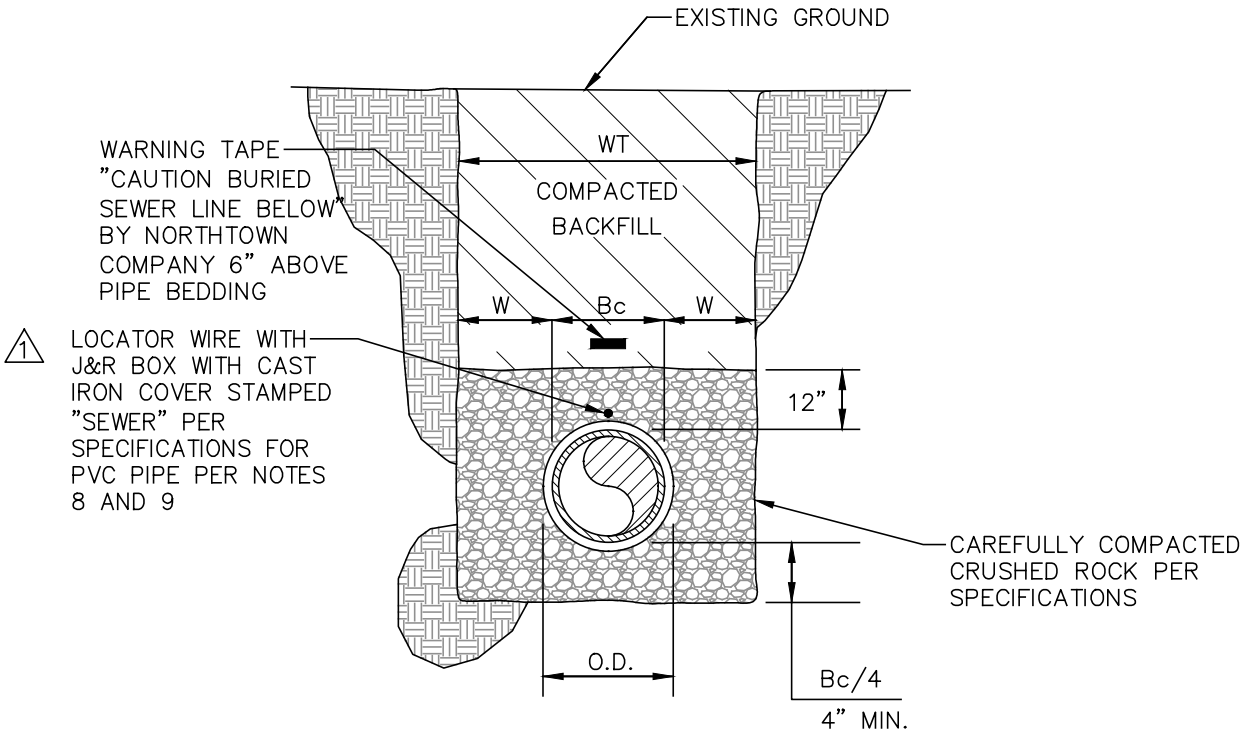
1. THE "APPROVED" FIRE SERVICE SHALL BE LOCATED AND INSTALLED SUBJECT TO THE APPROVAL OF THE DISTRICT.
2. THE FIRE SERVICE MUST BE INSPECTED AND TESTED IMMEDIATELY AFTER INSTALLATION.
3. ALL FIELD JOINTS SHALL BE FLANGED UNLESS OTHERWISE INDICATED. ALL WELDED JOINTS ON EPOXY LINED STD. WT. PIPE SHALL BE SHOP FABRICATED AND ALL EPOXY LINING SHALL BE SHOP APPLIED.
4. PIPE THREADS SHALL BE CLEAN AND SHARP, AND SEALED WITH APPROVED JOINT COMPOUND.
5. PAINT SHALL BE SAFETY RED.

ITEM	DESCRIPTION
1	MAINLINE DIA. x BRANCH DIA. TEE.
2	VALVE BOX & GATE VALVE INSTALLATION PER STD. NO. B–1.
3	ASA 150# SLIP–ON FLG. (TYP.) TO MATE VALVES AND FLANGED FITTINGS.
4	CML & CMC STD. WT. STEEL BELOW GRADE (FLxFL).
5	TAMPER SWITCH CONNECTION SHALL BE TO THE NEAREST BUILDING
6	90° FLANGED STD. WT. LONG RADIUS (FUSION BONDED EPOXY LINED OUTSIDE PAINTED) ELBOW (FLxFL).
7	FUSION BONDED EPOXY LINED, OUTSIDE PAINTED ABOVE GRADE (FLxFL).
8	90° FLANGED CML/CMC STD. WT. LONG RADIUS ELBOW.
9	DOUBLE CHECK DETECTOR W/BY–PASS METER, W/RADIOREAD PURCHASED FROM THE DISTRICT, (INCLUDING O.S. & Y. VALVES–EPOXY LINED). BY–PASS METER FLOW RATE INDICATOR TO REGISTER IN G.P.M., METER TOTALIZER TO REGISTER IN 100'S CU. FT.
10	PIPE SUPPORT PER DISTRICT STANDARDS.
11	CONCRETE THRUST BLOCK PER STD. NO. C–2
12	PAINT EXTERIOR WITH PRIMER AND TWO (2) COATS OF PAINT. COLOR AND MANUFACTURER AS APPROVED BY THE DISTRICT. (NO PRIMER ON BRASS OR BRONZE).
13	FUSION BONDED EPOXY LINED, OUTSIDE PAINTED ABOVE GRADE (FLxGR).
14	GROOVED COUPLING.

JURUPA COMMUNITY SERVICES DISTRICT

SCALE: NONE	4", 6", 8" AND 10" DIA. FIRE SERVICE/ DOUBLE DETECTOR CHECK VALVE INSTALLATION	DRAWING NO. H–1
DATE: SEPTEMBER 2020		
APPROVED BY: _____ Sinnaro Yos, P.E. C68607	ALBERT A. WEBB ASSOCIATES CONSULTING ENGINEERS RIVERSIDE CALIFORNIA	W.O. 2023–3229

REV.



CLASS "I"

DEPTH > 14 FEET

PVC SDR 26 ONLY

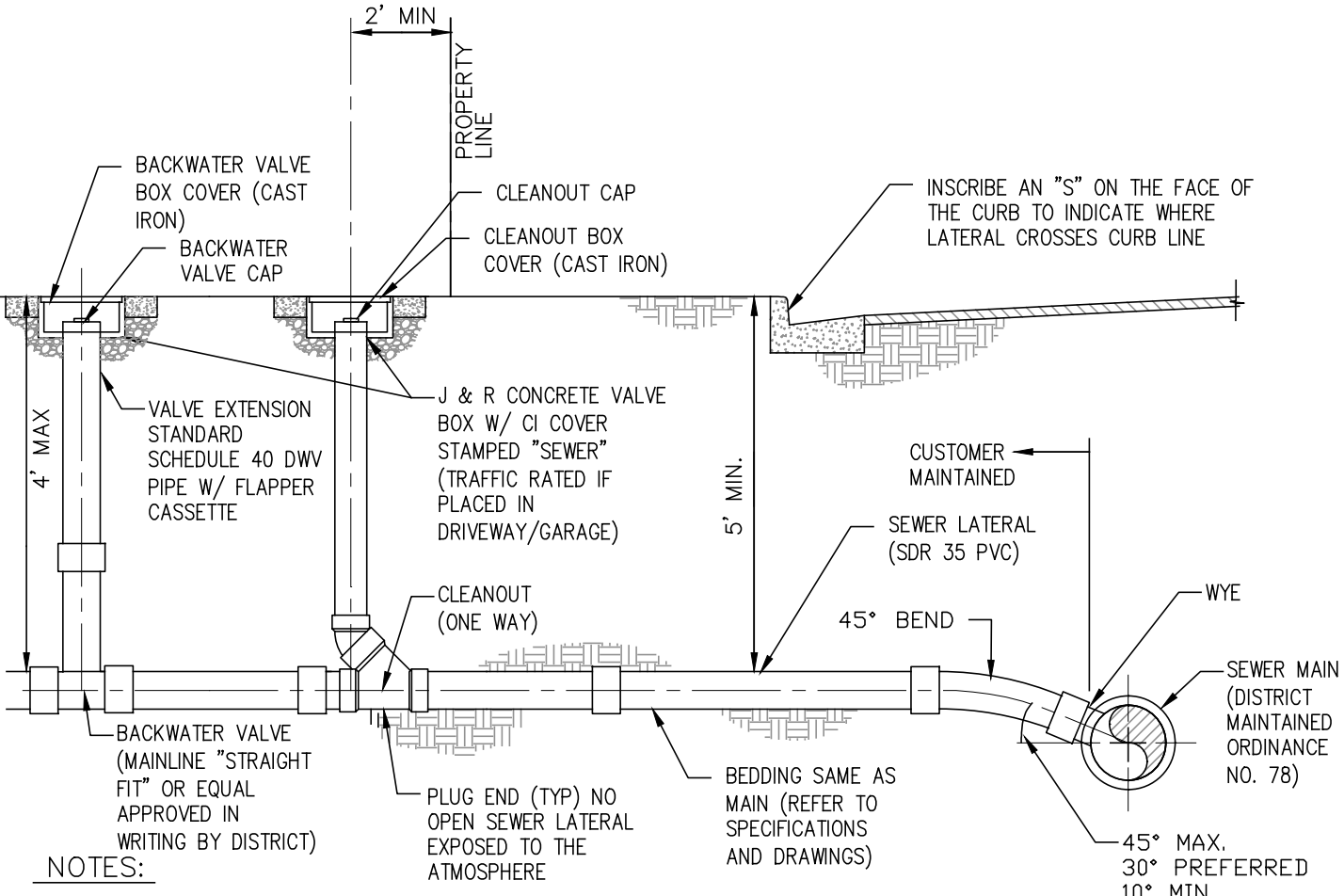
NOTES:

1. ALL BACKFILL SHALL BE PLACED IN ACCORDANCE WITH THE SPECIFICATIONS.
2. O.D. = OUTSIDE DIAMETER OF BELL.
3. Bc = OUTSIDE DIAMETER OF PIPE BARREL.
4. WT = TRENCH WIDTH MEASURED AT TOP OF PIPE.
5. W = 10" MAXIMUM.
6. FOR PIPES DEEPER THAN 8', LOCATOR WIRE SHALL BE INSTALLED ABOVE THE PIPE, AT AN 8' MAXIMUM DEPTH.
7. ENCASE CRUSHED ROCK WITH DISTRICT APPROVED FILTER FABRIC WHEN ENCOUNTERING GROUNDWATER.
1. 8. LOCATOR WIRE AND J&R BOX IS REQUIRED WHEN SEWER GRAVITY PIPE IS INSTALLED WITHIN THE FOLLOWING LOCATIONS:
   A. UNIMPROVED AND CROSS-COUNTRY
   B. DISTRICT EASEMENTS
   C. ALL CURVED PIPELINE ALIGNMENTS (PAVED OR UNIMPROVED)
1. 9. PLACEMENT OF J&R BOX SHALL BE PER THE FOLLOWING CRITERIA:
   A. ADJACENT TO THE MANHOLE OFF THE STREET
   B. WHERE SIDEWALK IS DIRECTLY BEHIND CURB, LOCATE BOX WITHIN THE SIDEWALK
   C. WHERE PARKWAY BETWEEN CURB AND SIDEWALK, LOCATED BOX IN THE PARKWAY WITH 6" THICK BY 6" DEEP CONCRETE PAD AROUND BOX
   D. IN UNIMPROVED, CROSS-COUNTRY, AND EASEMENT LOCATIONS, LOCATE ALONG THE BOUNDARY OF THE EASEMENT WITH 6" THICK BY 6" DEEP CONCRETE PAD AROUND BOX
   E. THE BOX SHALL BE PLACED A MAXIMUM OF 350' SPACING IF DISTANCES BETWEEN MANHOLES ARE GREATER THAN 350'

REV. 1 7/2021 STD. DETAIL REVISION

JURUPA COMMUNITY SERVICES DISTRICT

SCALE: NONE	GENERAL BEDDING DETAILS FLEXIBLE GRAVITY PIPE	DRAWING NO. S-2
DATE: SEPTEMBER 2020		
APPROVED BY: _____ Sinnaro Yos, P.E. C68607	ALBERT A. WEBB ASSOCIATES CONSULTING ENGINEERS RIVERSIDE CALIFORNIA	W.O. 2023-3229



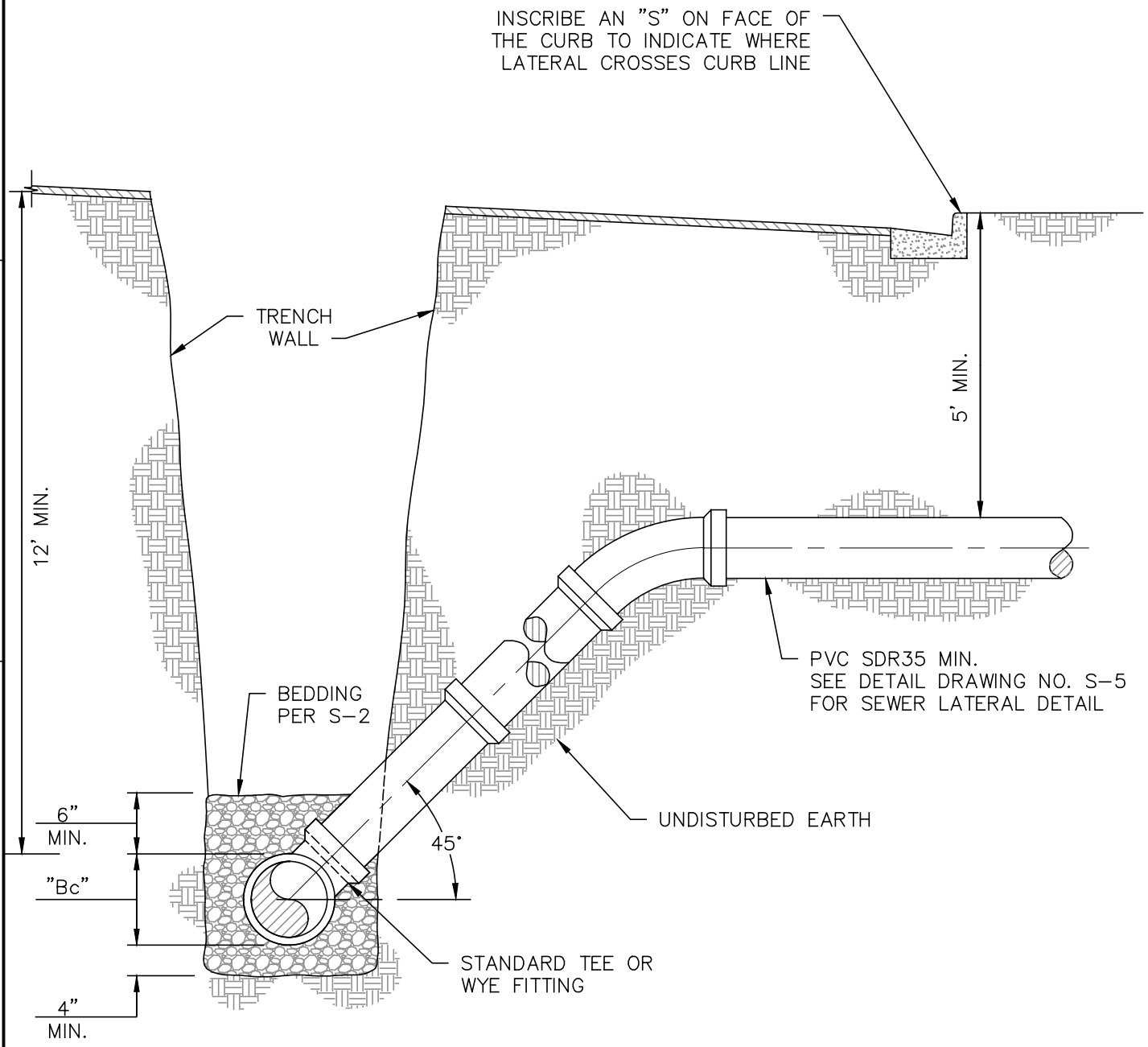
NOTES:

1. 4" PIPE FOR SINGLE DWELLINGS, 6" MIN. FOR ALL OTHER LATERALS.
2. All 8" LATERALS WILL REQUIRE MANHOLE CONNECTION.
3. LATERAL LOCATIONS SHALL BE MEASURED AT RIGHT ANGLES TO STREET CENTERLINE FROM THE CENTERLINE OF THE NEAREST DOWNSTREAM MANHOLE COVER.
4. WHENEVER DEPTH OF COVER OVER LATERAL IS LESS THAN 4'–0", SPECIAL BEDDING OR CONCRETE CRADLE SHALL BE USED.
5. CONTRACTOR SHALL REFERENCE EACH LATERAL IN THE FIELD WITH A SURFACE MARKER. MARKER SHALL BE METAL STAKE PLACED AT TIME OF BACKFILLING. MARKER SHALL BE VERTICAL AND CUT OFF 6" ABOVE GRADE.
6. SEWER LATERALS FOR ALL LOTS WHICH HAVE PAD ELEVATIONS AT OR BELOW STREET GRADE SHALL BE CONSTRUCTED AT 2% SLOPE. IN NO CASE SHALL ANY SEWER LATERAL BE CONSTRUCTED AT LESS THAN 2% SLOPE UNLESS OTHERWISE SHOWN ON DISTRICT APPROVED PLANS.
7. SEWER PLUGS TO BE INSTALLED INTO LATERAL STUBOUTS AND INFLATED WHILE MAKING HOUSE CONNECTIONS TO THE SEWER MAIN. CONNECTIONS TO BE MADE WITH DISTRICT INSPECTOR PRESENT.
8. A MANHOLE PER DISTRICT STANDARD DRAWING NO. S–7 SHALL BE PROVIDED AT THE STREET RIGHT–OF–WAY LINE FOR ALL LATERALS 6" IN DIAMETER AND LARGER UNLESS A WASTEWATER FLOW MONITORING STATION IS PROVIDED OR UNLESS OTHERWISE APPROVED IN WRITING BY THE DISTRICT.
9. A BACKWATER VALVE SHALL BE REMOVABLE TYPE IV WITH INSTRUCTIONS FOR INSTALLATION ON THE REMOVABLE TEE HANDLE.
10. BACKWATER VALVE TO BE INSTALLED AT SHALLOW DEPTH OF THE SEWER LATERAL CLOSE TO THE BUILDING PAD TO PROTECT ALL SEWER FIXTURES DRAINING TO SEWER MAIN.
11. "BACKWATER VALVE DOWNSTREAM" SHALL BE PERMANENTLY MARKED ON THE UPSTREAM CLEANOUTS FROM THE BACKWATER VALVE.
12. BACKWATER VALVE SHALL BE INSTALLED FOR LOTS WHERE CALIFORNIA BUILDING CODE REQUIRES.

JURUPA COMMUNITY SERVICES DISTRICT

SCALE: NONE	TYPICAL SEWER LATERAL	DRAWING NO. S–5
DATE: SEPTEMBER 2020		
APPROVED BY: Sinnaro Yos, P.E. C68607	ALBERT A. WEBB ASSOCIATES CONSULTING ENGINEERS RIVERSIDE CALIFORNIA	W.O. 2023–3229

REV. 1 4/2024 STD. DETAIL REVISION



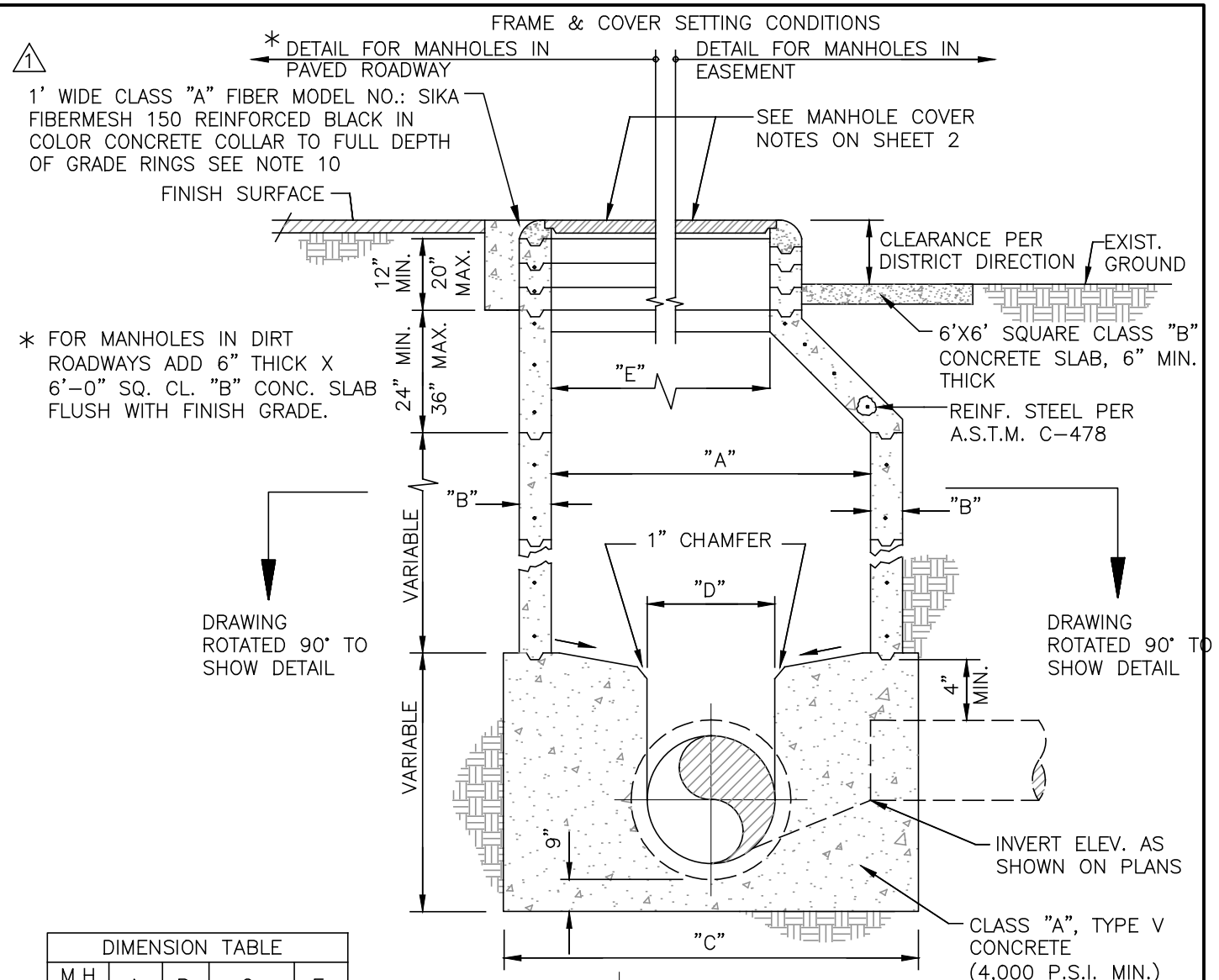
Bc = OUTSIDE DIAMETER OF PIPE BARREL.

JURUPA COMMUNITY SERVICES DISTRICT

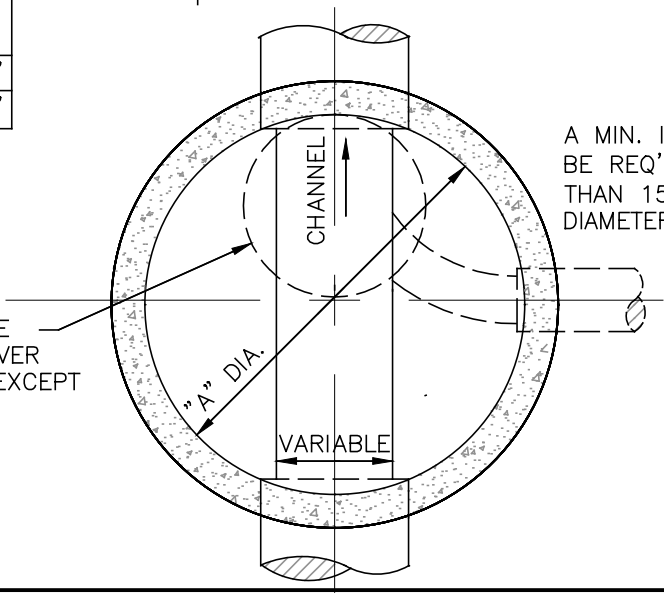
SCALE: NONE	**DEEP LATERAL FLEXIBLE GRAVITY PIPE**	DRAWING NO. S-6A
DATE: SEPTEMBER 2020		
APPROVED BY: _____ Sinnaro Yos, P.E. C68607	ALBERT A. WEBB ASSOCIATES CONSULTING ENGINEERS RIVERSIDE CALIFORNIA	W.O. 2023-3229

REV.

FRAME & COVER SETTING CONDITIONS



DIMENSION TABLE				
M.H. DIA.	A	B	C	E
4'	48"	6"	5'-6"	30"
5'	60"	6"	6'-6"	30"



A MIN. INSIDE DIA. OF 60" SHALL BE REQ'D. FOR PIPELINES DEEPER THAN 15' AND/OR FOR SEWER DIAMETERS 15 INCH AND LARGER

ALL MANHOLE TOPS SHALL BE INSTALLED WITH MANHOLE COVER OVER DOWNSTREAM OUTLET, EXCEPT AS OTHERWISE NOTED.

MANHOLE COVERS SHALL HAVE THE FOLLOWING WRITING ON THE CENTER OF THE COVER :
JCSD
SEWER
MONITORING MANHOLE COVERS SHALL HAVE THE FOLLOWING WRITING ON THE CENTER OF THE COVER:
SEWER

JURUPA COMMUNITY SERVICES DISTRICT

SCALE: NONE	PRECAST CONCRETE MANHOLE	DRAWING NO. S-7
DATE: SEPTEMBER 2020		SHEET 1 OF 3
APPROVED BY: Sinnaro Yos, P.E. C68607	ALBERT A. WEBB ASSOCIATES CONSULTING ENGINEERS RIVERSIDE CALIFORNIA	W.O. 2023-3229

REV. 1 7/2021 STD. DETAIL REVISION

NOTES:

1. ALL SECTIONS TO BE WASHED TO REMOVE ANY LOOSE MATERIAL. PRECAST MANHOLE SECTIONS AND GRADE RINGS SHALL BE SEALED WITH CS-102B BUTYL/BITUMEN BLENDED SEALANT AS MANUFACTURED BY CONSEAL OF NEW CARLISLE, OHIO OR DISTRICT APPROVED EQUAL TO FORM WATERTIGHT JOINTS.

2. CONCRETE FOR MANHOLE SECTIONS SHALL BE 4,000 P.S.I. MIN. USING TYPE V CEMENT.

3. PROVIDE REPAIR BAND COUPLING WITH ADJUSTABLE SHIELDED S.S. SHEAR RING JOINT IN ALL V.C.P. SEWER PIPES OUTSIDE OF MANHOLE BUT WITHIN 12" OF CONCRETE BASE.

4. WHEN INSTALLING REINFORCED CONCRETE GRADE RING(S) 3"-6" THE GRADE RINGS MUST BE CLEAN AND ANCHORED TO BOTH THE FRAME AND GRADE RING(S) OR CONE WITH RAM-NEK JOINT SEALER OR SEALANT AS RECOMMENDED BY MANUFACTURER FOR WATERTIGHT CONNECTION AS APPROVED BY THE DISTRICT. INTERIOR OF GRADE RINGS SHALL BE SMOOTHLY MORTARED.

5. MORTAR AROUND AND UNDER FRAME SHALL BE CURED WITH A PIGMENTED CURING COMPOUND MEETING REQUIREMENTS OF SECTION 90-7 OF STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS, 2006 EDITION.

6. FOR PVC CONNECTIONS TO EXISTING AND NEW PRECAST REINFORCED CONCRETE MANHOLES. A HOLE SPECIFIC TO THE NEW PIPE'S O.D. DIA. SHALL BE CORED INTO THE CONCRETE MANHOLE WALL TO RECEIVE THE PIPE. A KOR-N-SEAL BOOT OR ENGINEER APPROVED EQUAL SHALL BE CLAMPED INTO THE CORED HOLE AND USED TO MAKE THE CONNECTION.

7. SHELF AND GROOVE SHALL BE FORMED MONOLITHICALLY WITH THE MANHOLE BASE. CHANNELS TO BE SMOOTH FINISH.

8. NO FLY ASH ALLOWED ON CONCRETE COLLAR AS ADDED MIXTURE AGENT.

9. MANHOLE SHALL BE VACUUM TESTED PER DISTRICT SPECIFICATIONS.

△1 10. CONCRETE COLLAR SHALL BE COLORED BLACK WITH TRU HUE-INTEGRAL COLOR BY WALTTOOLS.COM (888-263-5895) WHICH IS AN ADMIXTURE COMPOSED OF IRON OXIDE PIGMENTS PER ASTM C 979 FOR INTEGRALLY COLORED CONCRETE. FOR COLOR BLACK PIGMENT A MINIMUM OF THREE (3) BAGS PER CUBIC YARD OF CONCRETE WILL BE REQUIRED. IF MIXING ON-SITE, ONCE COLOR IS ADDED MAKE SURE THE DRUM TURNS FOR 120 REVOLUTIONS BEFORE PLACEMENT. THE FOLLOWING ARE PRECAUTIONS:

- DO NOT USE WITH ADMIXTURES CONTAINING CALCIUM CHLORIDE.
- CERTAIN OXIDE PIGMENTS CAN REDUCE AIR CONTENT.
- DO NOT CHANGE CEMENT BRANDS IN THE MIDDLE OF A JOB.
- WATCH SLUMP CLOSELY AS A WARNING FOR WATER CONTENT CHANGE. CHANGES IN WATER CONTENT WILL CAUSE COLOR VARIATIONS

MANHOLE COVER NOTES: △2

MANHOLE COVER AND FRAME, TO BE COMPOSITE MATERIAL, EJ SERIES, (30") 3200 AND (36") 3800 WITH FOUR (4) TITUS TWISTLIFT TITANIUM STEEL LOCKS (SEE SHEET 3 OF 3 OF S-7 FOR TITUS TWISTLIFT SPECS), PER COVER. "NOTE" AFTER SETTING A COMPOSITE FRAME IN PLACE AND PRIOR TO POURING THE CONCRETE COLLAR AND/OR CONCRETE SLAB, INSTALL ONE (1) #4 REBAR SHAPED INTO A FULL CIRCLE THREE (3") INCHES LARGER IN O.D. THAN THE COMPOSITE FRAME. AFTER FORMING THE #4 REBAR CIRCLE, IT SHALL THAN BE SET TO THREE (3") INCHES BELOW THE FRAME RIM ELEVATION THEN ENCAPSULATED IN THE CONCRETE COLLAR AND/OR CONCRETE SLAB.

SPECIAL MANHOLE COVER CONDITIONS

1. FOR MANHOLES IN EASEMENTS, UNPAVED AREAS, OR ANY AREA WHERE SECURITY IS A DISTRICT CONCERN BUT WATER INFLOW IS NOT AN ISSUE USE EJ SERIES OR APPROVED EQUAL.

2. FOR MANHOLES IN EASEMENTS, UNPAVED AREAS, STREET OR ANY AREA WHERE WATER INFLOW IS A POTENTIAL ISSUE AND/OR WHERE SECURITY IS A DISTRICT CONCERN AND WHEN DIRECTED AND APPROVED BY DISTRICT, USE DISTRICT STANDARD DRAWING NO. S-23.

REV.
△1 7/2021 STD. DETAIL REVISION
△2 4/2024 STD. DETAIL REVISION

JURUPA COMMUNITY SERVICES DISTRICT

SCALE: NONE	PRECAST CONCRETE MANHOLE	DRAWING NO. S-7
DATE: SEPTEMBER 2020		SHEET 2 OF 3
APPROVED BY: _____ Sinnaro Yos, P.E. C68607	ALBERT A. WEBB ASSOCIATES CONSULTING ENGINEERS RIVERSIDE CALIFORNIA	W.O. 2023-3229

FIBERMESH NOTES: △1

SIKA FIBERMESH 150 APPLICATION

1. RECOMMENDED DOSAGE – THE DOSAGE OF THE SIKA® FIBERMESH®–150 WILL VARY ACCORDING TO THE TYPE OF APPLICATION AND PERFORMANCE REQUIREMENTS. STANDARD RECOMMENDED DOSAGE RATIO OF SIKA® FIBERMESH®–150 IS BETWEEN 0.75 TO 1.5 LBS/CU YD OF CONCRETE.

2. MIXING – SIKA® FIBERMESH®–150 IN DEGRADABLE BAG CAN BE ADDED DIRECTLY TO THE CONCRETE MIXING SYSTEM AFTER THE BATCHING OF THE OTHER INGREDIENTS AND MIXED FOR 4 TO 5 MINUTES OR 70 REVOLUTIONS.

3. APPLICATION – THE ADDITION OF SIKA® FIBERMESH®–150 AT THE NORMAL RECOMMENDED DOSAGE RATE DOES NOT REQUIRE ANY MIX DESIGN OR APPLICATION CHANGES. THE FIBER CONCRETE CAN BE MIXED, SPRAYED ORPLACED USING CONVENTIONAL EQUIPMENT.

4. TOOLING & FINISHING – SIKA® FIBERMESH®–150 CAN BE FINISHED BY MOST FINISHING TECHIQUES AS INDICATED IN ACI–302.

TITUS TWISTLIFT LOCK: △2

1. THE TITUS® TWISTLIFT® BOLT SHALL BE MACHINED FROM TITANIUM STEEL.

2. THE BOLT FEATURES A DOMED HEAD WITH 3 EQUALLY SPACED 'J' SLOTS RUNNING HORIZONTALLY AROUND THE BOLT HEAD. A FLAT IS MACHINED ON THE TOP TO EXTEND THE LIFE OF THE DEBRIS PLUGS. AN INDICATOR LINE IS ALSO MACHINED INTO THE HEAD.

3. STANDARD BOLT SIZES ARE ½" 20 THREAD PER INCH (TPI) WITH A FLAT MACHINED ON TWO SIDES TO ENGAGE PADDLE. PADDLE STOP ASSEMBLY AND KNURLED PINS ARE 316 SS. LONG NOSE QUARTER TURN PADDLES ARE 316 SS.

4. THE LOCK STOP IS A 316 SS INVESTMENT CASTING PINNED TO THE COVER WITH A 1/2" HOLE TO ACCOMMODATE THE TWISTLIFT BOLT.

5. THE BOLT AND PADDLE WILL BE ASSEMBLED USING A STANDARD 316 SS ½" X 20 TPI NUT WITH THIN SS WASHER COATED IN ANTI–SEIZE. NUT SHOULD BE TORQUED TO ABOUT 35 FT/LBS. THIS PROVIDES FOR THE CONSISTENT TURNING RESISTANCE OF THE LOCK ASSEMBLY. A SECOND 316 SS LOCK NUT IS USED AS A JAM NUT, AND TORQUED TO 90 FT. LBS. WHILE HOLDING THE BOTTOM NUT STATIONARY. RED LOCKTITE® OR EQUIVALENT SHOULD BE LIBERALLY USED PRIOR TO ASSEMBLY.

6. THE BOLT WILL BE OPERATED BY MEANS OF A SPECIALLY MADE OPENING KEY CONSISTING OF A SPECIAL SOCKET ATTACHED TO A 'T' HANDLE USED TO BOTH TURN THE BOLT, AND LIFT OUT THE COVER.

7. REPLACEMENT OPENING KEYS ARE ONLY AVAILABLE THROUGH TITUS® WASTEWATER SOLUTIONS, INC.

8. THE BOLT HEAD IS PROTECTED BY A WEATHER RESISTANT PLASTIC DEBRIS CAP. THE CAP IS INCLUDED WITH EACH LOCK.

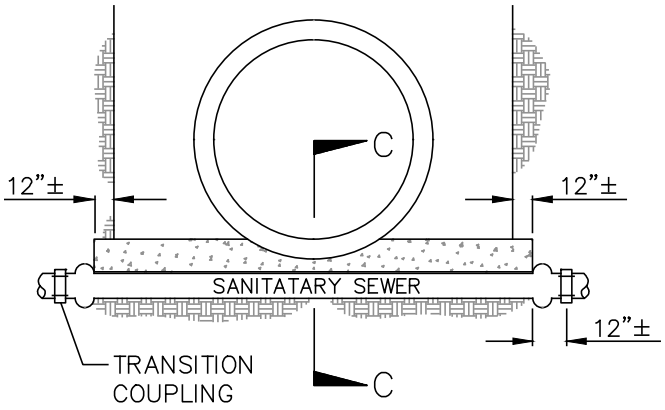
△2 4/2024 STD. DETAIL REVISION

△1 7/2021 STD. DETAIL REVISION

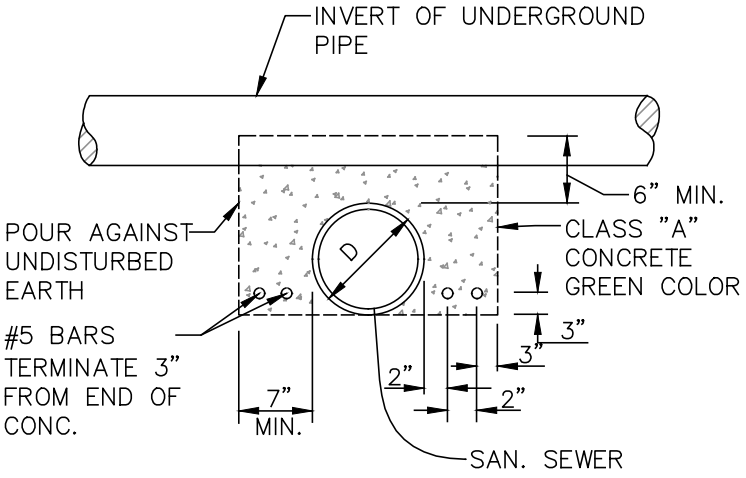
JURUPA COMMUNITY SERVICES DISTRICT

SCALE: NONE	PRECAST CONCRETE MANHOLE	DRAWING NO. S–7
DATE: SEPTEMBER 2020		SHEET 3 OF 3
APPROVED BY: _____ Sinnaro Yos, P.E. C68607	ALBERT A. WEBB ASSOCIATES CONSULTING ENGINEERS RIVERSIDE CALIFORNIA	W.O. 2023–3229

REV.



CASE 1

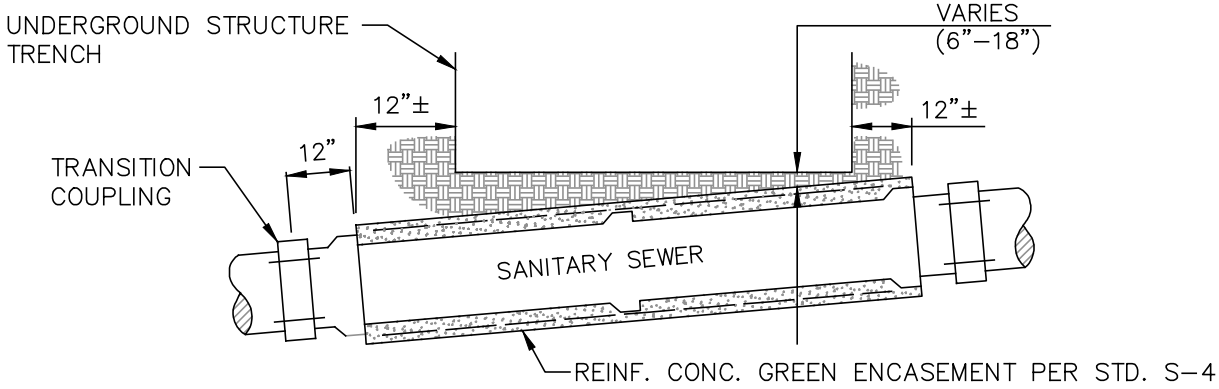


SECTION C–C

CASE 1 NOTES:

1. WHERE CLEARANCE BETWEEN BOTTOM OF UNDERGROUND PIPE OR STRUCTURE AND TOP OF SANITARY SEWER IS LESS THAN 6" CASE 1 APPLIES.

2. SANITARY SEWER SHALL BE IN CONFORMANCE WITH DISTRICT SPECIFICATIONS AS FOLLOWS:
   A. SDR 35 FOR UP TO 8'FT.
   B. SDR 26 FOR UP TO 15'FT.
   C. HDPE WITH EITHER SDR WITH NO JOINTS WITH INNER BEAD REMOVED.



CASE 2

CASE 2 NOTE:

1. WHERE CLEARANCE BETWEEN BOTTOM OF UNDERGROUND PIPE OR STRUCTURE AND TOP OF SEWER IS 6" TO 18", CASE 2 APPLIES.

GENERAL NOTES:

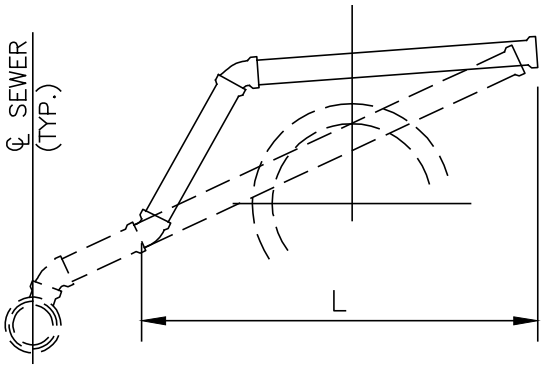
1. THIS STANDARD APPLIES TO LOADING PIPE PROTECTION CASES.

2. NO JOINTS UNDER CROSSINGS AND STRUCTURES.

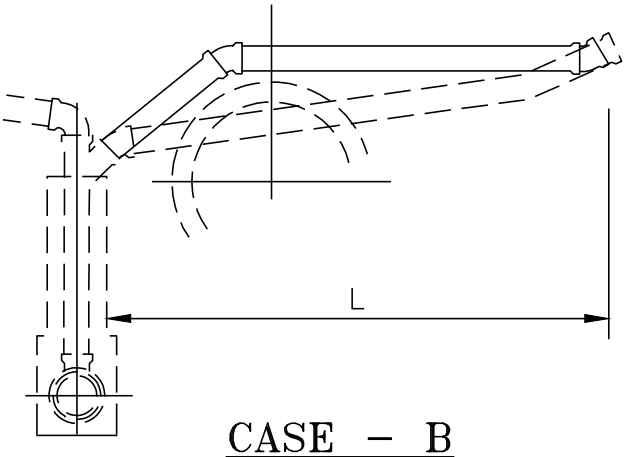
JURUPA COMMUNITY SERVICES DISTRICT

SCALE: NONE	SEWER PROTECTION DETAIL	DRAWING NO. S–16
DATE: SEPTEMBER 2020		
APPROVED BY: Sinnaro Yos, P.E. C68607	ALBERT A. WEBB ASSOCIATES CONSULTING ENGINEERS RIVERSIDE CALIFORNIA	W.O. 2023–3229

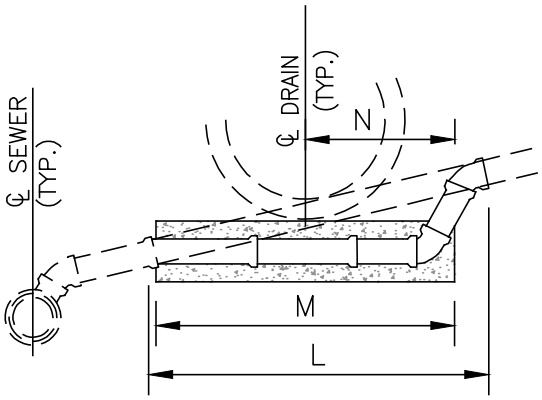
REV.



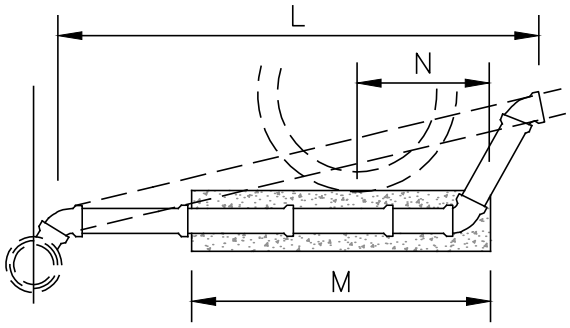
CASE – A



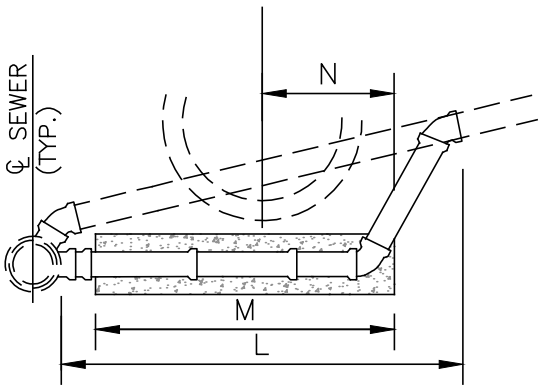
CASE – B



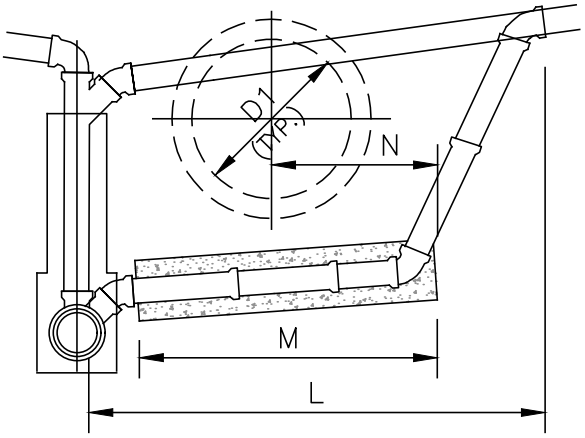
CASE – C



CASE – D

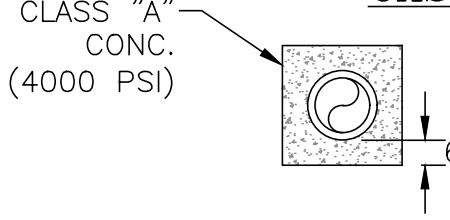


CASE – E



CASE – F

SEE SHEET 2 OF 2 FOR NOTES AND DESCRIPTION OF CASES

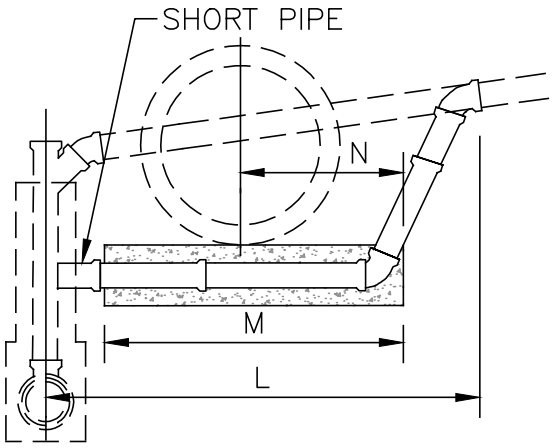


CROSS SECTION OF CONCRETE REINFORCEMENT FOR PIPE, SEE J.C.S.D. STD. NO. S–4

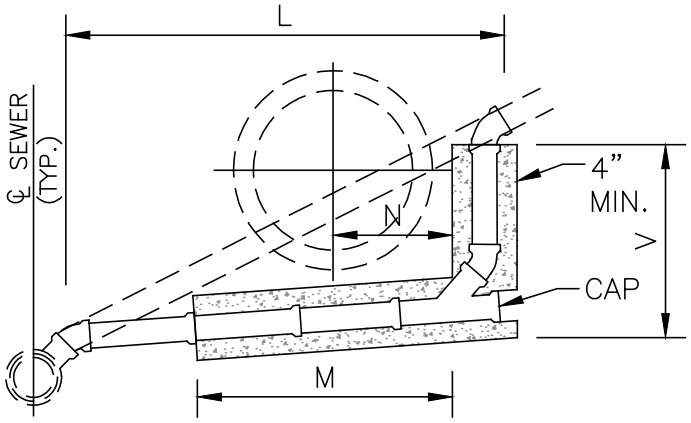
JURUPA COMMUNITY SERVICES DISTRICT

SCALE: NONE	REMODELING DETAILS FOR SEWER LATERALS	DRAWING NO. S–17
DATE: SEPTEMBER 2020		SHEET 1 OF 2
APPROVED BY: _____ Sinnaro Yos, P.E. C68607	ALBERT A. WEBB ASSOCIATES CONSULTING ENGINEERS RIVERSIDE CALIFORNIA	W.O. 2023–3229

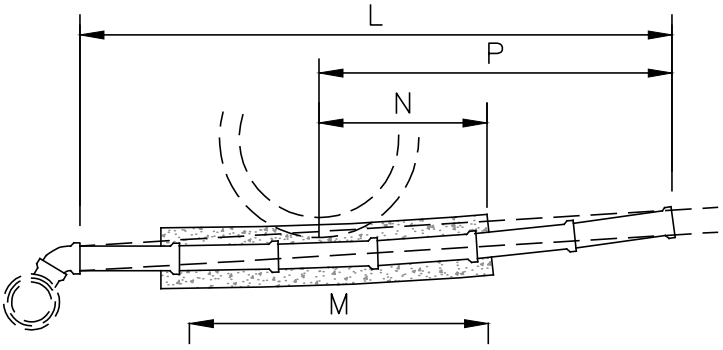
REV.



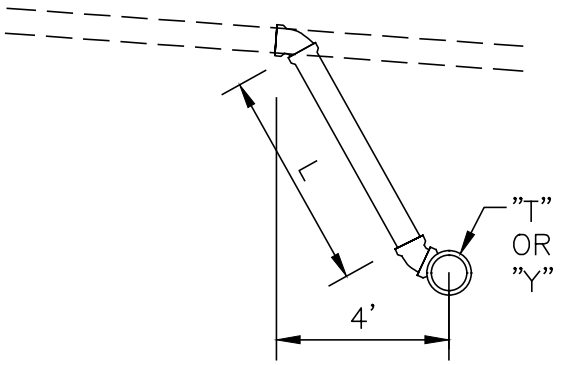
CASE – G



CASE – H



CASE – K



CASE – R

NOTES:

1. THESE DETAILS DO NOT APPLY TO CONFLICTS BETWEEN SEWER LATERALS AND WATERLINES.
2. EXISTING PIPES ARE INDICATED BY BROKEN LINES.
3. PIPES TO BE CONSTRUCTED ARE INDICATED BY SOLID LINES.
4. ALL PIPE DIAMETERS SHALL MATCH EXISTING LATERAL.
5. ALL BENDS SHALL BE 1/8 BENDS UNLESS SPECIFIED OTHERWISE.
6. CONCRETE REINFORCEMENT, CROSS SECTION SHOWN ON SHEET 1, SHALL BE USED ON ALL PIPES TO BE CONSTRUCTED UNDER STORM DRAIN, TOP PORTION WITHIN 1" OF STORM DRAIN TO BE OMITTED.
7. DIMENSIONS:
   - L – IS SPECIFIED ON PLAN AS THE AVERAGE TOTAL LENGTH.
   - M – (d,+ 24") LESS ENOUGH TO AVOID A FRACTION OF A FOOT.
   - N – 1/2 M, EXCEPT WHERE SPECIFIED OTHERWISE ON PLAN.
   - P – (CASE K) IS SPECIFIED WHERE L DOES NOT EXTEND TO THE BEND.
   - V – (CASE H) IS SPECIFIED TO THE NEAREST FOOT AND IN SUMMARY IS ITEMIZED AS CONCRETE REINFORCEMENT FOR 6" PIPE.
8. NEW CONNECTION TO MAIN LINE SHALL CONFORM TO STD. DWG. S–5.

CASES:

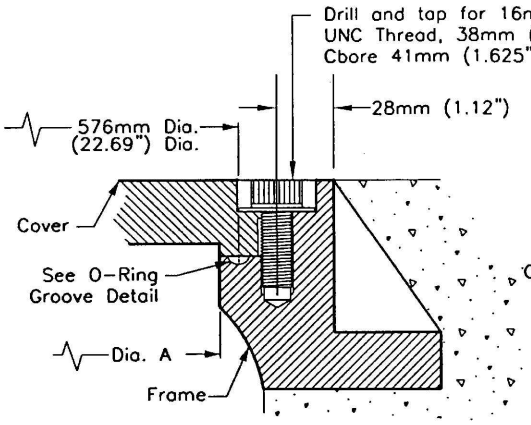
A. ABOVE DRAIN TO HOUSE CONNECTION–SPECIALS REQUIRED: 2 1/8 BENDS.
B. ABOVE DRAIN TO CHIMNEY – 2 1/8 BENDS.
C. BELOW DRAIN TO HOUSE CONNECTION–2 1/8 BENDS.
D. BELOW DRAIN TO "Y" – 3 1/8 BENDS.
E. BELOW DRAIN TO FLAT SADDLE – 3 1/8 BENDS, 1 SADDLE.
F. BELOW DRAIN TO SADDLE – 3 1/8 BENDS, 1 SADDLE.
G. BELOW DRAIN TO CHIMNEY – 2 1/8 BENDS.
H. BELOW DRAIN TO "Y" – 3 1/8 BENDS, 1 "Y".
K. BELOW DRAIN TO HOUSE CONNECTION, SLOPE SLIGHTLY MODIFIED.
R. CONNECTION WITH NEW SEWER – 2 1/8 BENDS WITH "Y" – 14" 1/8 BEND WITH "T".

JURUPA COMMUNITY SERVICES DISTRICT

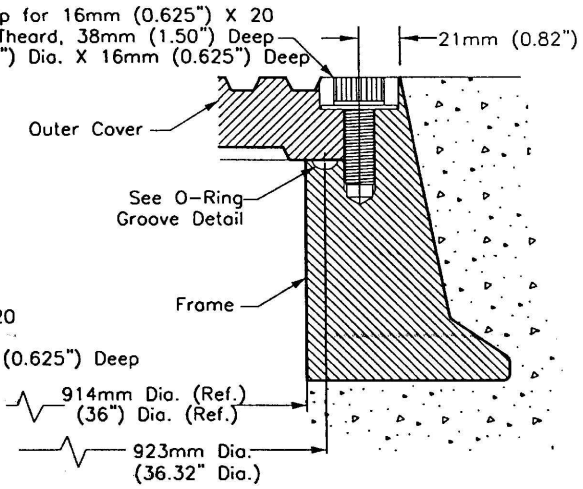
SCALE: NONE	REMODELING DETAILS FOR SEWER LATERALS	DRAWING NO. S–17
DATE: SEPTEMBER 2020		SHEET 2 OF 2
APPROVED BY: _____ Sinnaro Yos, P.E. C68607	ALBERT A. WEBB ASSOCIATES CONSULTING ENGINEERS RIVERSIDE CALIFORNIA	W.O. 2023–3229

REV.

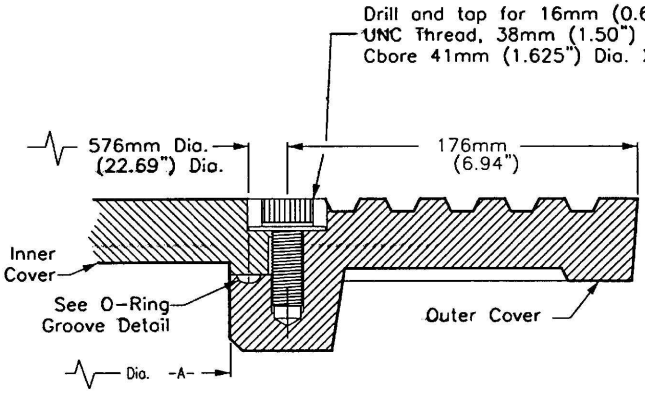
NOTE: DISTRICT DIRECTED USE ONLY



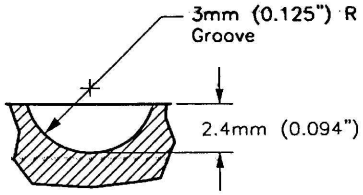
M-1 Detail:
COVER TO FRAME



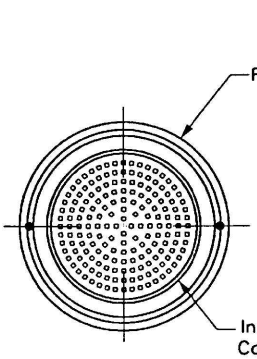
M-3B Detail:
OUTER COVER TO FRAME



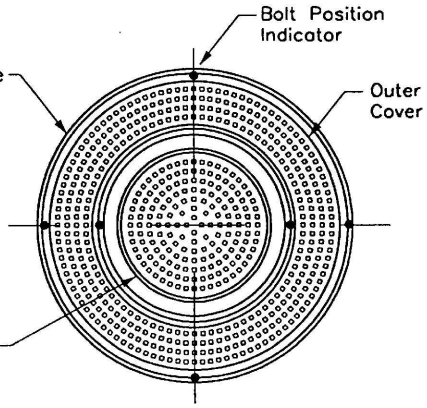
M-3A Detail:
INNER COVER TO OUTER COVER



NEOPRENE O-RING
GROOVE DETAIL



M-1 COVER AND FRAME
BOLT PLACEMENT
(See Note 3)



M-3 CONCENTRIC COVERS AND FRAME
BOLT PLACEMENT
(See Note 3)

NOTES:

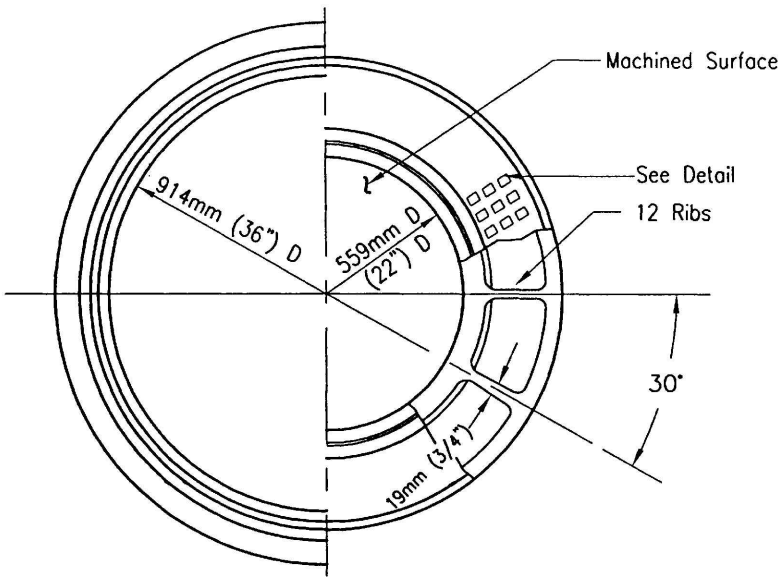
1. 16mm (0.625") X 20 UNC THREAD, 316 STAINLESS STEEL PENTA HEAD SCREW AND 38mm (1.50") O.D. X 17mm (0.687") I.D. X 0.078 THICK 316 STAINLESS STEEL WASHER.
2. 6mm (0.25") NEOPRENE O-RING GASKET SHALL BE GLUED INTO MACHINED GROOVE. GLUE SHALL MEET THE REQUIREMENTS OF MIL-M-81288 (AMEND. 1)
3. BOLTDOWN PATTERNS:
   - M-1 DETAIL (610mm (24") COVER & FRAME): INSTALL TWO (2) BOLTS AT 180 DEGREES.
   - M-3A DETAIL (CONCENTRIC COVERS): BETWEEN INNER AND OUTER COVERS INSTALL TWO (2) BOLTS AT 180 DEGREES.
   - M-3B DETAIL (OUTER COVER & FRAME): BETWEEN OUTER COVER & FRAME INSTALL FOUR (4) BOLTS AT 90 DEGREES.

JURUPA COMMUNITY SERVICES DISTRICT

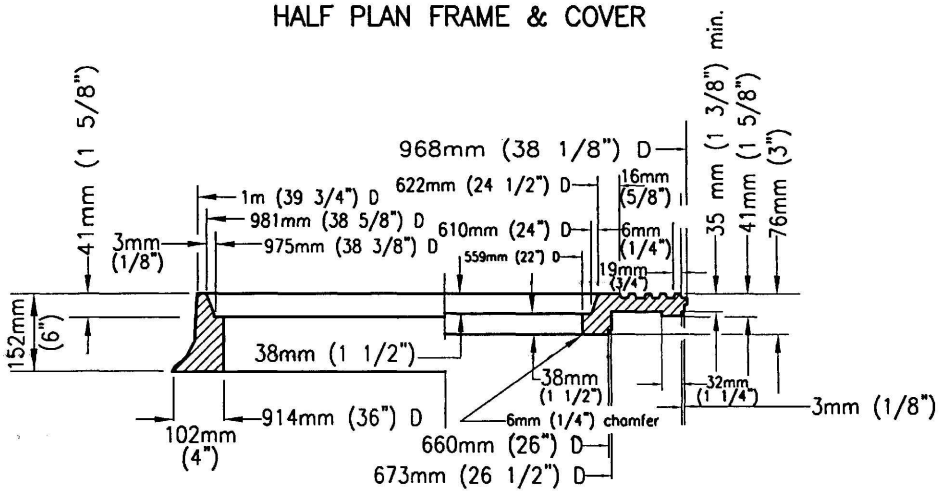
SCALE: NONE	MANHOLE COVER - LOCKING DEVICE	DRAWING NO. S-23
DATE: SEPTEMBER 2020		SHEET 1 OF 3
APPROVED BY: _____ Sinnaro Yos, P.E. C68607	ALBERT A. WEBB ASSOCIATES CONSULTING ENGINEERS RIVERSIDE CALIFORNIA	W.O. 2023-3229

REV.

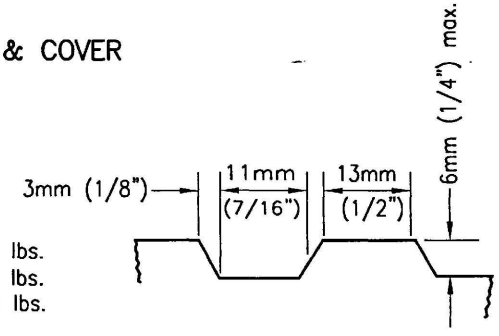
NOTE: DISTRICT DIRECTED USE ONLY



HALF PLAN FRAME & COVER



HALF SECTION FRAME & COVER



DETAIL

NOTES

1. Frame and cover shall be cast iron. Cast iron shall conform to ASTM 48, Class 35B.
2. Weights:

Frame	142.4kg (314) –	164.6kg (363)	lbs.
Outer Cover	129.3kg (285) –	149.7kg (330)	lbs.
Inner Cover	66.7kg (147) –	77.5kg (171)	lbs.

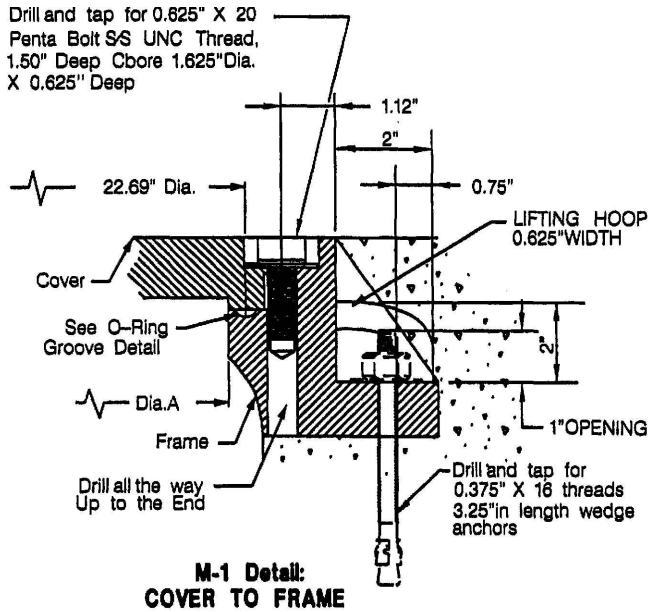
3. Machine all matching surfaces and seats of frame and cover to prevent rocking.
4. Imported frames and covers shall have the country of origin marked in compliance with federal regulations.

JURUPA COMMUNITY SERVICES DISTRICT

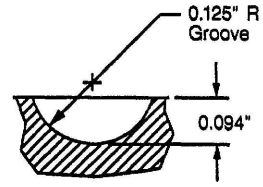
SCALE: NONE	36" MANHOLE FRAME & TWO CONCENTRIC COVERS HEAVY DUTY	DRAWING NO. S-23 (M-3)
DATE: SEPTEMBER 2020		SHEET 2 OF 3
APPROVED BY: _____ Sinnaro Yos, P.E. C68607	ALBERT A. WEBB ASSOCIATES CONSULTING ENGINEERS RIVERSIDE CALIFORNIA	W.O. 2023-3229

REV.

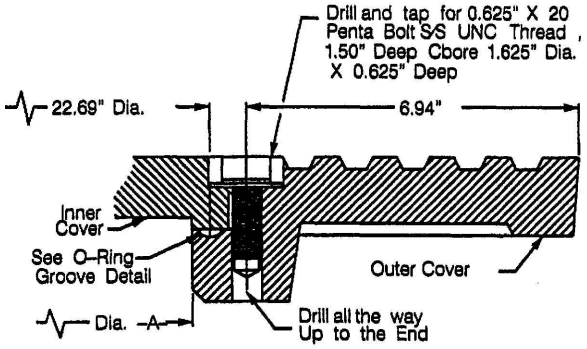
NOTE: DISTRICT DIRECTED USE ONLY



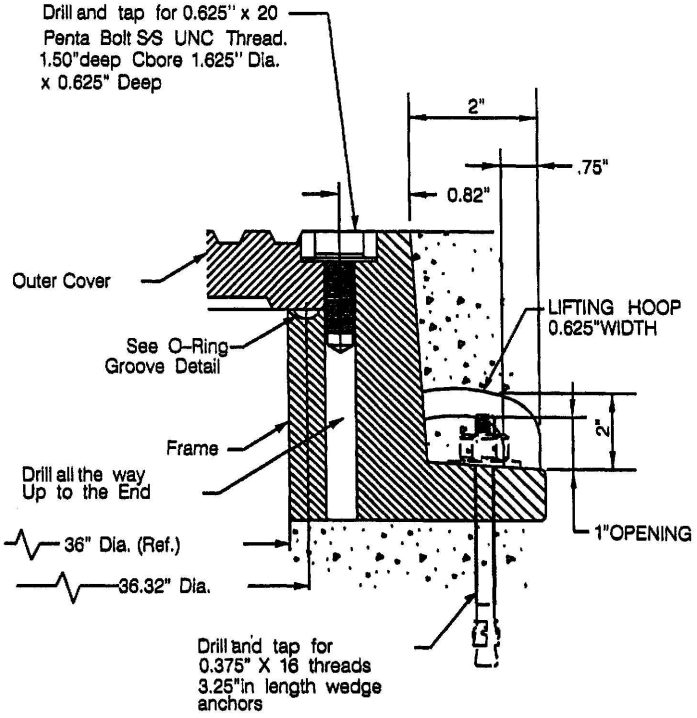
M-1 Detail:
COVER TO FRAME



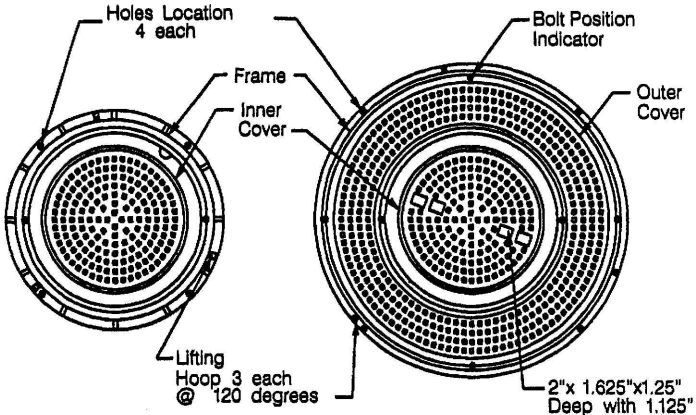
NEOPRENE O-RING GROOVE DETAIL



M-3A Detail:
INNER COVER TO OUTER COVER



M-3B Detail:
OUTER COVER TO FRAME



M-1 COVER AND FRAME BOLT PLACEMENT (See Note 3)

M-3 CONCENTRIC COVERS AND FRAME BOLT PLACEMENT (See Note 3)

NOTES:

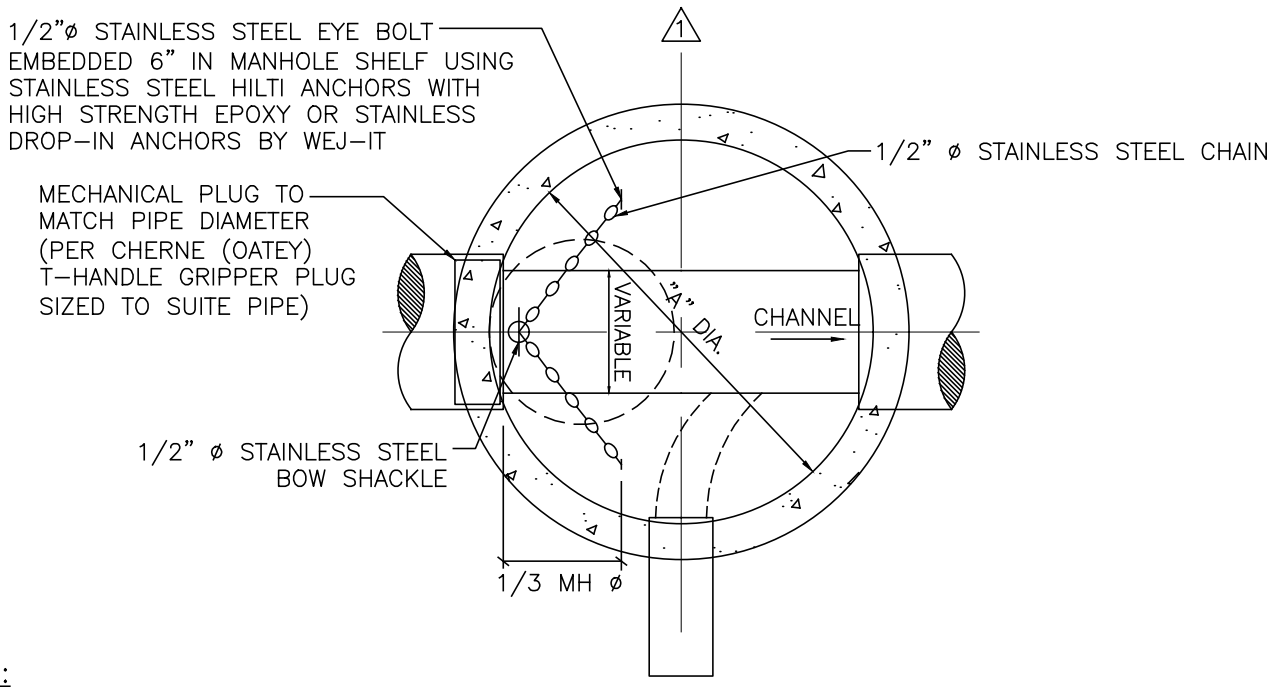
1. 0.625" X 20 PENTA BOLT S/S UNC THREAD, 316 STAINLESS STEEL PENTA HEAD SCREW AND 1.50" O.D. x 0.687" I.D. X 0.078 THICK 316 STAINLESS STEEL WASHER.
2. 0.25" NEOPRENE O-RING GASKET SHALL BE GLUED INTO MACHINED GROOVE. GLUE SHALL MEET THE REQUIREMENTS OF MIL-M-81288
3. BOLTDOWN PATTERNS:
   - M-1 DETAIL (24" COVER & FRAME): INSTALL TWO (2) BOLTS AT 180 DEGREES.
   - M-3A DETAIL (CONCENTRIC COVERS): BETWEEN INNER AND OUTER COVERS INSTALL TWO (2) BOLTS AT 180 DEGREES.
   - M-3B DETAIL (OUTER COVER & FRAME): BETWEEN OUTER COVER & FRAME INSTALL FOUR (4) BOLTS AT 90 DEGREES.

   FOR M-1 AND M-3 OUTER COVER FRAME DRILL 4 HOLES FOR 0.375"x16 STAINLESS STEEL WEDGE ANCHORS 3.75"IN LENGTH AT 90 DEGREES.

JURUPA COMMUNITY SERVICES DISTRICT

SCALE: NONE	MANHOLE COVER – LOCKING DEVICE	DRAWING NO. S-23 (M-4)
DATE: SEPTEMBER 2020		SHEET 3 OF 3
APPROVED BY: _____ Sinnaro Yos, P.E. C68607	ALBERT A. WEBB ASSOCIATES CONSULTING ENGINEERS RIVERSIDE CALIFORNIA	W.O. 2023-3229

REV.

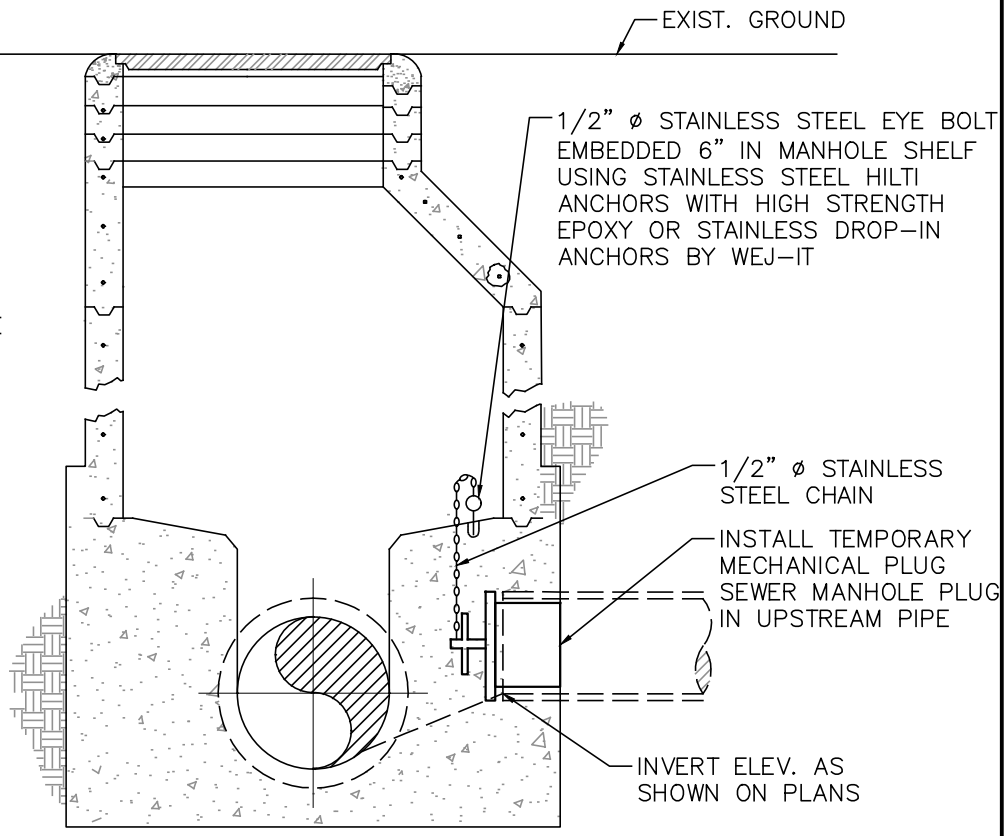


NOTE:

1. SEWER PLUG(S) SHALL BE INSTALLED PRIOR TO COMMENCEMENT OF SEWER CONSTRUCTION AND SHALL BE INSPECTED ON A WEEKLY BASIS TO INSURE THAT SEWER PLUGS ARE IN PLACE. THE LOCATION OF THE SEWER PLUG(S) SHALL BE IDENTIFIED ON THE PLANS

2. SEWER PLUG SHALL BE MECHANICAL T–HANDLE GRIPPER PLUG BY CHERNE (OATEY) MADE OF HEAVY DUTY ALUMINUM SHALL BE MADE FOR LONG–TERM USE, CHEMICAL–RESISTANT NEOPRENE O–RING FOR PIPE SIZE 6" TO 18" DIAMETER

3. ALL ITEMS TO BE REMOVED PRIOR TO SYSTEM GOING LIVE. CUT OFF EYE BOLTS AND PROVIDE EPOXY FILL. EPOXY FILL SHALL BE COMMERCIAL GRADE QUIKRETE FAST SET ANCHORING EPOXY



JURUPA COMMUNITY SERVICES DISTRICT

SCALE: NONE	TEMPORARY MANHOLE PLUG	DRAWING NO. S–24
DATE: SEPTEMBER 2020		
APPROVED BY: _____ Sinnaro Yos, P.E. C68607	ALBERT A. WEBB ASSOCIATES CONSULTING ENGINEERS RIVERSIDE CALIFORNIA	W.O. 2023–3229

REV. 1 7/2021 STD. DETAIL REVISION

APPENDIX A

Geotechnical Report

Converse Consultants
Geotechnical Engineering
Environmental & Groundwater Science
Inspection & Testing Services

GEOTECHNICAL INVESTIGATION REPORT

JCSD's FY 23/24 Annual Water (and Sewer) Repair and Pipeline Replacement (44th Street)

Approximately 8,528 Linear Feet of 8-inch and 12-inh Diameter Water Pipeline (870 PZ) and 1,677 Linear Feet of 8-inch Diameter Sewer Pipeline
City of Jurupa Valley, Riverside County, CA

Converse Project No. 23-81-189-01

Prepared For:
Albert A. Webb Associates
3788 McCray Street
Riverside, CA 92560

Presented By:
Converse Consultants
2021 Rancho Drive, Suite 1
Redlands, CA 92373
909-796-0544

January 10, 2024

Converse Consultants
Geotechnical Engineering, Environmental & Groundwater Science, Inspection & Testing Services

January 10, 2024

Mr. Bradley Sackett, PE
Senior Engineer
Albert A. Webb Associates
3788 McCray Street
Riverside, CA 92560

Subject: **GEOTECHNICAL INVESTIGATION REPORT**
JCSD's FY 23/24 Annual Water (and Sewer) Repair and Pipeline Replacement (44th Street)
Approximately 8,528 Linear Feet of 8-inch and 12-inh Diameter Water Pipeline (870 PZ) and 1,677 Linear Feet of 8-inch Diameter Sewer Pipeline
City of Jurupa Valley, Riverside County, CA
Converse Project No. 23-81-189-01

Dear Mr. Sackett:

Converse Consultants (Converse) is pleased to submit this Geotechnical Investigation Report for the Jurupa Community Services District (JCSD) Annual Water (and Sewer) Repair and Pipeline Replacement, located in the City of Jurupa Valley, Riverside County, California. This report was prepared in accordance with our revised proposal dated May 26, 2023, and your Task Order Agreement No. 2023-0192 dated August 21, 2023.

Based upon our field investigation, laboratory data, and analyses, the proposed project is considered feasible from a geotechnical standpoint, provided the recommendations presented in this report are incorporated into the design and construction of the project.

Please note that due to the large spacings between and beyond the borings the subsurface conditions cannot be established with certainty.

We appreciate the opportunity to be of service to Albert A. Webb Associates and Jurupa Community Services District. Should you have any questions, please do not hesitate to contact us at 909-474-2847.

CONVERSE CONSULTANTS

Hashmi S. E. Quazi, PhD, PE, GE
Principal Engineer

Dist.: 1-Electronic Pdf/Addressee
HSQ/AZ/JC/kvg

PROFESSIONAL CERTIFICATION

This report has been prepared by the following professionals whose seals and signatures appear herein.

The findings, recommendations, specifications and professional opinions contained in this report were prepared in accordance with the generally accepted professional engineering and engineering geologic principle and practice in this area of Southern California. We make no other warranty, either expressed or implied.

Aleksey Zhukov
Staff Engineer

Javier Calzada
Staff Geologist

Hashmi S. E. Quazi, PhD, PE, GE
Principal Engineer

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APPENDICES

1.0 INTRODUCTION

This report presents the results of our geotechnical investigation performed by Converse for the Jurupa Community Services District (JCSD) Annual Water and Sewer Repair and Pipeline Replacement, located in the City of Jurupa Valley, Riverside County, California. The pipeline alignments are shown in Figure No. 1, *Approximate Alignment Locations Map*.

The purposes of this investigation were to determine the nature and engineering properties of the subsurface soils, and to provide preliminary design and construction recommendations for the project.

This report is prepared for the project described herein and is intended for use solely by Albert A. Webb Associates, JCSD, and their authorized agents for design purposes. It should not be used as a bidding document but may be made available to the potential contractors for information on factual data only. For bidding purposes, the contractors should be responsible for making their own interpretation of the data contained in this report.

2.0 PROJECT DESCRIPTION

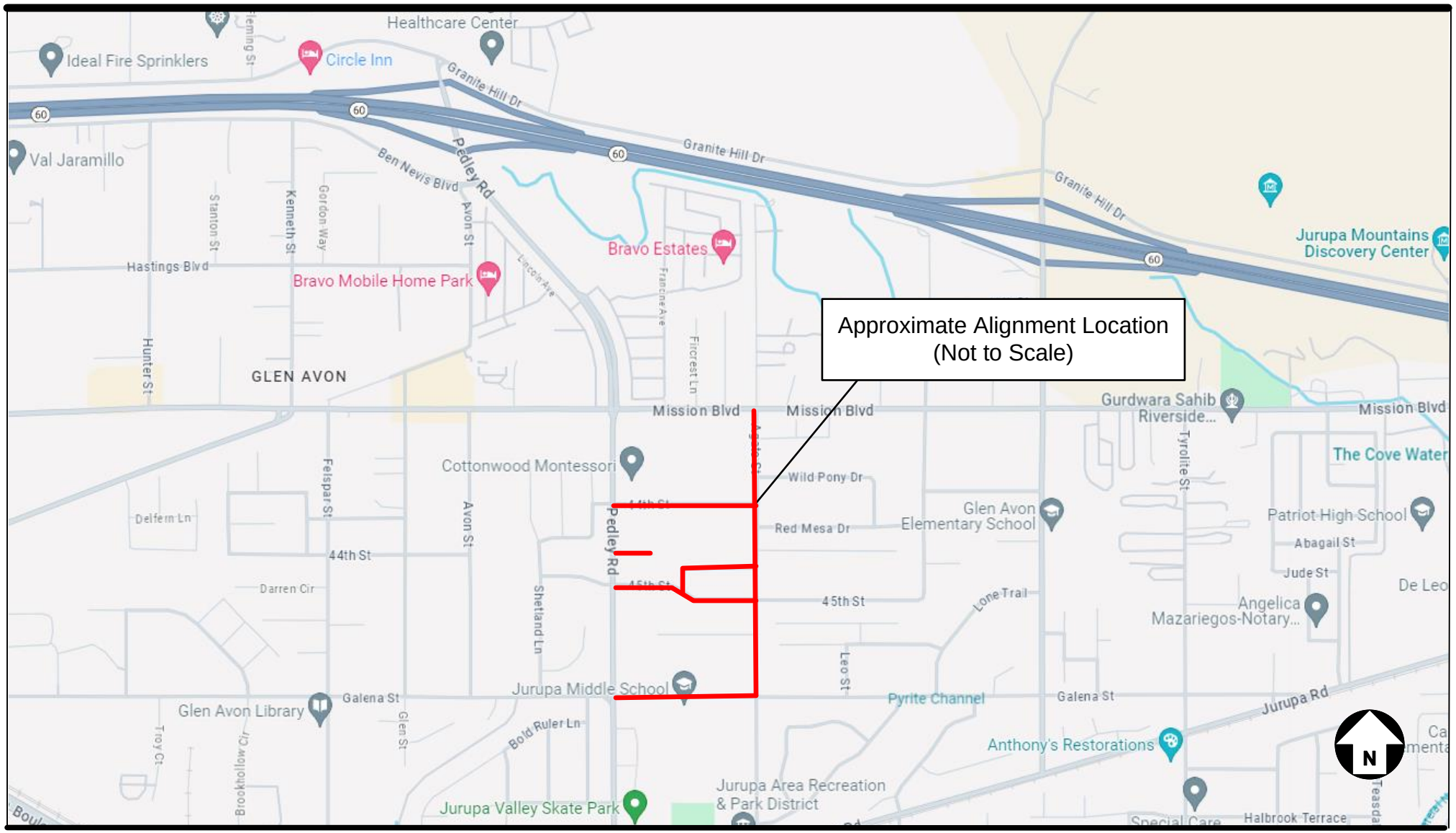
The sewer and water replacement project are listed in the tables below.

Table No. 1, Summary of Water Line Replacement

Proposed Water Line Replacement (870 PZ)			
Street Segment	**Existing Size and Material**	**Proposed Size**	**Length (FT)**
44th Street (between Agate St. and Pedley Rd.)	6"/CML W	8"	1,346
Tammy Lane (east of Pedley Rd.)	6"/ACP	8"	440
Clearview St. View Pl (west of Agata St.)	6"/ACP	8"	860
45th St. (between Agate St. and Pedley Rd.)	8"/ACP	8"	1,355
Tournaline Ct. (west of Agate St.)	6"/ACP	8"	850
Galena St. (between Agate St. and Pedley Rd.)	10"/CML W	12"	1,287
Agate St. (Mission Blvd. – Galena St.)	8"/CML W	12"	2,650
TOTAL			**8,788**

Abandon the 6 water mains and tie existing water services to the existing water line per exhibit. Reconnect 7 water services to exist 12" steel.

Depth to pipe invert will be 8.0-10.0 feet below existing ground surface (bgs). We understand the pipe will be installed using an open cut-and-cover technique.



Project: JCSD's Annual Water and Sewer Repair and Pipeline Replacement

Location: City of Jurupa Valley, Riverside County, California

For: Albert Webb A. Associates

Approximate Alignment Locations Map

Project No.
23-81-189-01

Converse Consultants

Figure No.
1

Table No. 2, Summary of Sewer Line Replacement

Proposed Sewer Line Replacement			
Street Segment	**Existing Size and Material**	**Proposed Size**	**Length (ft)**
Portion of 44th St (between Agate St. and Pedley Rd.)	8"	8"	550
Tammy Ln. (East of Pedley Rd.)	8"	8"	365
Galena St. (between Galena St. and Pedley Rd.)	8"	8"	617
Agate St. (near Tourmaline Ct.)	8"	8"	445
TOTAL			**1977**

Depth to pipe invert will be 10.0-15.0 feet below existing ground surface. We understand the pipe will be installed using an open cut-and-cover technique.

3.0 ALIGNMENT CONDITIONS

The project area encompasses an area of Jurupa Valle bounded by Mission Boulevard to the north, Thorobred Lane to the south, from Pedley Road to the west and to Agate Road to the east. Refer to Table No. 3 for the alignment's description.

Table No. 3, Alignment Conditions

Road	Roads Bounding Alignment	Pavement Repair Required
Agate Street	From Mission Boulevard to Galena Street	Yes
44th Street	From Pedley Road to Agate Street	Yes
Tammy Lane	From Pedley Road to Dead End	Yes
45th Street	From Pedley Road to Agate Street	Yes
Clearview Place	From 45th Street to Agate Street	Yes
Tourmaline Court	From Agate Street to Dead End	Yes
Galena Street	From Pedley Road to Agate Street	Yes
Pedley Road	From Galena Street to Thorobred Lane	Yes

Photographs Nos. 1 through 3 depict the present alignments conditions.

Photograph No. 1: Agate at Galina, view to north.

Photograph No. 2: Galina at Agate, view to west.

Photograph No. 3: Pedley Road at Thorobred Lane, view to north.

4.0 SCOPE OF WORK

The scope of this investigation included project set-up, subsurface exploration, laboratory testing, engineering analysis, and preparation of this report, as described in the following sections.

4.1 Project Set-up

The project set-up consisted of the following tasks.

- Prepared a boring locations map and submitted to you for review and approval.
- Conducted alignment reconnaissance and marked the borings at locations approved by Tyler Vigneault with Webb Associates.
- Obtained encroachment permit from the City of Jurupa Valley.
- Notified Underground Service Alert (USA) at least 48 hours prior to drilling to clear the boring location of any conflict with existing underground utilities.
- Engaged a California-licensed driller to conduct exploratory borings.

4.2 Subsurface Exploration

Four exploratory borings (BH-01 through BH-04) were drilled between on December 5, 2023, along the pipeline alignments to investigate subsurface conditions. The borings were drilled using a truck-mounted drill rig equipped with 8-inch diameter hollow-stem augers. The details of borings are presented in the following table.

Table No. 4, Summary of Borings

Boring No.	Street/Location	Boring Depth (ft)	Groundwater Depth (ft)
BH-01	Mission Boulevard	15.3	Not Encountered
BH-02	Agate Street	15.4	Not Encountered
BH-03	Clearview Place	15.3	Not Encountered
BH-04	Galena Street	15.3	Not Encountered

Approximate boring locations are indicated in Figure No. 2, *Approximate Boring Location Map*. For a description of the field exploration and sampling program, see Appendix A, *Field Exploration*.

4.3 Laboratory Testing

Representative soil samples of the pipeline alignments were tested in the laboratory to aid in the soils classification and to evaluate the relevant engineering properties of the soils. These tests included the following.

- *In*-situ moisture contents and dry densities (ASTM D2216 and ASTM D2937)
- Sand Equivalent (ASTM D2419)
- Soil corrosivity (California Tests 643, 422, and 417) by AP Engineering
- Grain size distribution (ASTM D6913)
- Maximum dry density and optimum-moisture content (ASTM D1557)
- Direct shear (ASTM D3080)

For *in-situ* moisture and dry density data, see the Logs of Boring in Appendix A, *Field Exploration*. For a description of the laboratory test methods and test results, see Appendix B, *Laboratory Testing Program.*

4.4 Analysis and Report Preparation

Data obtained from the field exploration and laboratory testing program was compiled and evaluated. Geotechnical analyses of the compiled data were performed, and this report was prepared to present our findings, conclusions, and recommendations for the project.

5.0 SURFACE AND SUBSURFACE CONDITIONS

A general description of the surface and subsurface conditions, various materials and groundwater conditions encountered at each location during our field exploration is discussed below.

Project: JCSD's Annual Water and Sewer Repair and Pipeline Replacement

Location: City of Jurupa Valley, Riverside County, California

For: Albert Webb A. Associates

Approximate Boring Location Map

Project No.
23-81-189-01

Converse Consultants

Figure No.
2

5.1 Existing Pavement Sections

The measured pavement thicknesses at each boring location are listed in the following table.

Table No. 5, Existing Pavement Sections

Boring No.	Street/Location	Asphalt Concrete Thickness (in.)	Aggregate Base Thickness (in.)
BH-01	Mission Boulevard (Dirt)	NA	NA
BH-02	Agate Street (Dirt)	NA	NA
BH-03	Clearview Place	9.0	0.0
BH-04	Galena Street (Dirt)	NA	NA

*Note: NA = Not Available.

5.2 Subsurface Profile

Based on the exploratory borings and laboratory test results, the subsurface soils along the alignments encountered in the borings consist of a mixture gravel, sand, silt, and clay. Gravel up to 2-inches in maximum dimension were observed in the borings. Discernable fill could not be identified in the borings. Fill soils, if present, are likely within existing utilities trench backfill and street subgrade. The fill soils were likely derived from on-site sources and are similar to the native alluvial soils in composition and density.

For a detailed description of the subsurface materials encountered in the exploratory borings, see Drawing Nos. A-2 and A-5, Logs of Borings, in Appendix A, *Field Exploration.*

5.3 Groundwater

Groundwater was not encountered during our field investigation to a maximum depth of 16.5 feet below ground surface (bgs). The general coordinates 34.008258°N latitude and -117.471061°W longitude, were used to collect regional groundwater data presented below.

For comparison, the GeoTracker database (SWRCB, 2023) was reviewed for groundwater data from sites within an approximately 1.0-mile radius of the proposed development. Results of that search are as follows.

- SEVEN ELEVEN STORE #13962 (Site No. T0606500280), located approximately 3,900 feet northwest of the project site reported groundwater at depths ranging from 35 to 43 feet bgs between 1997 and 2007.
- Union (Three Oaks) E-Z SERVE #100789 (Site No. T0606500081), located approximately 3,122 feet northwest of the project site reported groundwater at depths ranging from 32 to 40 feet bgs between 2009 and 2011.

- T & S AUTO REPAIR (Site No. T0606500562), located approximately 2,610 feet northwest of the project site reported groundwater at depths ranging from 25 to 28 feet bgs between 2002 and 2008.
- G & K PETRO (Site No. T0606500612), located approximately 1,570 feet northwest of the project site reported groundwater at depths ranging from 12 to 18 feet bgs between 2003 and 2018.

The National Water Information System (USGS, 2023) was reviewed for current and historical groundwater data from sites within an approximately 1.0-mile radius of the proposed development and the results of that search are included below.

Table No. 6, Summary of USGS Groundwater Depth Data

Site Number	Location	Groundwater Depth Range (ft. bgs)	Date Range
340016117281801	Vacant lot north of Galena Street; approximately 1,510 feet south of project site	31	2015
34004011727570	Vacant lot west of Vernon Avenue; approximately 1,820 feet northeast of project site	49	2016

The California Department of Water Resources database (DWR, 2023) was reviewed for historical groundwater data from sites within a 1.0-mile radius of the project site. No site with groundwater data was found within a 1.0-mile radius of the project site.

Based on available data, the historical high groundwater level near the site is estimated to be approximately 12 feet bgs, and the current groundwater level is estimated to be deeper than 16.5 feet bgs. Groundwater is not expected to be encountered during execution of the proposed project, however perched water layers may be present at shallower depths, particularly following high precipitation or irrigation events.

5.4 Excavatability

The subsurface soil materials are expected to be excavatable by conventional heavy-duty earth moving and trenching equipment. Excavation will likely be difficult where concentration of gravel is encountered.

The phrase "conventional heavy-duty excavation equipment" is intended to include commonly used equipment such as excavators and trenching machines. It does not include hydraulic hammers ("breakers"), jackhammers, blasting, or other specialized equipment and techniques used to excavate hard earth materials. Selection of an appropriate excavation equipment model should be done by an experienced earthwork contractor and may require test excavations in representative areas.

5.5 Subsurface Variations

Based on results of the subsurface exploration and our experience, some variations in the continuity and nature of subsurface conditions within the pipeline alignments should be anticipated. Because of the uncertainties involved in the nature and depositional characteristics of the earth material, care should be exercised in interpolating or extrapolating subsurface conditions between or beyond the boring locations.

6.0 LABORATORY TEST RESULTS

Results of physical and chemical tests performed for this project are presented below.

6.1 Physical Testing

Physical test results for alignments are presented in the following table. For detailed description of these tests, see Appendix B, *Laboratory Testing Program,* except for the results of in-situ moisture and dry density tests which are presented on the Logs of Borings in Appendix A, *Field Exploration*.

- *In-situ* Moisture and Dry Density: *In-situ* dry densities and moisture contents of the site soils were determined in accordance with ASTM Standard D2216 and D2937. The dry densities of the soils ranged between 94 to 125 pounds per cubic foot (pcf) with moisture contents of 3 to 9 percent. Results are presented in the *Logs of Borings* in Appendix A, *Field Exploration.*
- Sand Equivalent (SE): Three representative soil samples, one from the upper five feet and two between ten and fifteen feet, were tested to evaluate their sand equivalent in accordance with the ASTM Standard D2419 test method. The sand equivalent of the soil sample from within the upper five feet was 18. The two samples from between ten and fifteen feet had sand equivalents of 30 and 35.
- Grain Size Analysis (PA): Three representative samples were tested to determine the relative grain size distribution in accordance with the ASTM Standard D6913. Test results are graphically presented in Drawing No. B-1, *Grain Size Distribution Results.*
- Maximum Dry Density and Optimum Moisture Content (CP): Two typical moisture-density relationships of representative soil samples were tested, in accordance with ASTM Standard D1557, with the results presented in Drawing No. B-2, *Moisture-Density Relationship Results*, in Appendix B, *Laboratory Testing Program.* The laboratory maximum dry densities were 134.3 and 129.7 pounds per cubic feet (pcf), with respective optimum moisture contents of 7.5 and 8.8. With rock corrections applied for BH-03, the value was 132.9 pcf and the optimum moisture content of 7.8 percent.
- Direct Shear (DS): Two direct shear tests were performed in accordance with ASTM Standard D3080. Both tests were performed on a relatively undisturbed sample and under soaked moisture condition in accordance with ASTM Standard

D3080. The results of the direct shear tests are presented in Drawing Nos. B-3 and B-4, *Direct Shear Test Results* in Appendix B, *Laboratory Testing Program*.

6.2 Chemical Testing - Corrosivity Evaluation

Two representative soil samples were tested to determine minimum electrical resistivity, pH, and chemical content, including soluble sulfate and chloride concentrations. The purpose of these tests was to determine the corrosion potential of soils when placed in contact with common construction materials. The tests were performed by AP Engineering and Testing, Inc. (Pomona, CA) in accordance with Caltrans Test Methods 643, 422 and 417. Test results are presented in the following table.

Table No. 7, Summary of Soils Corrosivity Test Results

Boring No./Street	Depth (feet)	pH	Soluble Sulfates (CA 417) (ppm)	Soluble Chlorides (CA 422) (ppm)	Min. Resistivity (CA 643) (Ohm-cm)
BH-02	5-10	8.3	30	19	10,293
BH-03	10-15	8.0	35	28	6,206

7.0 TRENCH BACKFILL RECOMMENDATIONS

Earthwork for the project will include trench excavation, pipe subgrade preparation, pipeline bedding placement, and trench backfill following the replacement of the pipes.

7.1 General

Prior to the start of construction, all existing underground utilities and appurtenances should be located within the vicinity of the proposed alignments. Such utilities should either be protected in-place or removed and replaced during construction as required by the project specifications. All excavations should be conducted in such a manner as not to cause loss of bearing and/or lateral support of existing structures or utilities.

All debris, deleterious material, and surficial soils containing roots and perishable materials (if any) should be stripped and removed from the alignment. Deleterious material, including organics, concrete, and debris generated during excavation, should not be placed as fill.

Migration of fines from the surrounding native soils, in the case of water leak from the pipe, must be considered in selecting the gradation of the materials placed within the trench, including bedding, pipe zone and trench zone backfill, as defined in the following sections. Such migration of fines may deteriorate pipe support and may result in settlement/ground loss at the surface.

It should be the responsibility of the contractor to maintain safe working conditions during all phases of construction.

Observations and field tests should be performed by the project soils consultant to confirm that the required degree of compaction has been obtained. Where compaction is less than specified, additional compactive effort should be made with adjustment of the moisture content as necessary, until the specified compaction is obtained.

7.2 Pipeline Subgrade Preparation

The final subgrade surface should be level, firm, uniform, free of loose materials, and properly graded to provide uniform bearing and support to the entire section of the pipe placed on bedding material. Protruding oversize particles, larger than 3 inches in dimension, if any, should be removed from the trench bottom and replaced with compacted on-alignment materials.

Any loose, soft and/or unsuitable materials encountered at the pipe sub-grade should be removed and replaced with an adequate bedding material.

During the digging of depressions for proper sealing of the pipe joints, the pipe should rest on a prepared bottom as near its full length as is practicable.

7.3 Pipe Bedding

Bedding is defined as the material supporting and surrounding the pipe to 1 foot above the pipe. Pipe bedding should follow JCSD Standards. If additional recommendations beyond these Standards are needed, the following specifications can be used during the placement of pipe bedding.

To provide uniform and firm support for the pipe, compacted granular materials such as clean sand, gravel or ¾-inch crushed aggregate, or crushed rock may be used as pipe bedding material. The sand equivalents of the tested soils were between 18 and 35. Typically, soils with sand equivalent value of 30 or more are used as pipe bedding material. The pipe designer should determine if the soils are suitable as pipe bedding material.

The type and thickness of the granular bedding placed underneath and around the pipe, if any, should be selected by the pipe designer. The load on the rigid pipes and deflection of flexible pipes and, hence, the pipe design, depends on the type and the amount of bedding placed underneath and around the pipe.

Bedding materials should be vibrated in-place to achieve compaction. Care should be taken to densify the bedding material below the springline of the pipe. Prior to placing the pipe bedding material, the pipe subgrade should be uniform and properly graded to

provide uniform bearing and support to the entire section of the pipe placed on bedding material. During the digging of depressions for proper sealing of the pipe joints, the pipe should rest on a prepared bottom as near its full length as is practicable.
Migration of fines from the surrounding native and/or fill soils must be considered in selecting the gradation of any imported bedding material. We recommend that the pipe bedding material should satisfy the following criteria to protect migration of fine materials.

i. $\frac{D15(F)}{D85(B)} \leq 5$

ii. $\frac{D50(F)}{D50(B)} < 25$

iii. Bedding Materials must have less than 5 percent passing No. 200 sieve (0.0074 mm) to avoid internal movement of fines.

Where,
F = Bedding Material
B = Surrounding Native and/or Fill Soils
*D*15(F) = Particle size through which 15% of bedding material will pass
*D*85(B) = Particle size through which 85% of surrounding soil will pass
*D*50(F) = Particle size through which 50% of bedding material will pass
*D*50(B) = Particle size through which 50% of surrounding soil will pass

If the above criteria do not satisfy, commercially available geofabric used for filtration purposes (such as Mirafi 140N or equivalent) may be wrapped around the bedding material encasing the pipe to separate the bedding material from the surrounding native or fill soils.

7.4 Backfill Materials

No fill or aggregate base should be placed until excavations and/or natural ground preparation have been observed by the geotechnical consultant. Excavated soils should be processed, including removal of roots and debris, removal of oversized particles, mixing, and moisture conditioning, before placing as compacted fill. On-site soils used as fill should meet the following criteria.

- No particles larger than 3 inches in largest dimension.
- Rocks larger than one inch should not be placed within the upper 12 inches of subgrade soils.
- Free of all organic matter, debris, or other deleterious material.
- Expansion index of 20 or less.
- Sand Equivalent greater than 15 (greater than 30 for pipe bedding).
- Contain less than 30 percent by weight retained in 3/4-inch sieve.
- Contain less than 40 percent fines (passing #200 sieve).

Based on field investigation and laboratory testing results, on-site soils may be suitable as fill materials.

Imported materials, if required, should meet the above criteria prior to being used as compacted fill. Any imported fills should be tested and approved by geotechnical representative prior to delivery to the alignments.

7.5 Compacted Fill Placement

Fill soils should be thoroughly mixed, and moisture conditioned to within ±3 percent of optimum moisture content for coarse soils and 0 to 2 percent above optimum moisture content for fine soils and compacted to at least 90 percent of the laboratory maximum dry density.

At least the upper 12 inches of subgrade soils underneath pavements intended to support vehicle loads should be scarified, moisture conditioned, and compacted to at least 95 percent of the laboratory maximum dry density.

Fill materials should not be placed, spread or compacted during unfavorable weather conditions. When work is interrupted by heavy rain, filling operations should not resume until the geotechnical consultant approves the moisture and density conditions of the previously placed fill.

7.6 Trench Zone Backfill

The trench zone is defined as the portion of the trench above the pipe bedding extending up to the final grade level of the trench surface. Excavated on-site soils free of oversize particles and deleterious matter may be used to backfill the trench zone. Trench backfill should follow JCSD, Jurupa Valley City or Riverside County Standards, whichever is applicable. If additional recommendations beyond these Standards are needed, the following specifications can be used during the trench zone backfilling.

- Trench excavations to receive backfill should be free of trash, debris or other unsatisfactory materials at the time of backfill placement.
- Trench zone backfill should be compacted to at least 90 percent of the laboratory maximum dry density as per ASTM D1557 test method. At least the upper 1 foot of trench backfill underlying pavement should be compacted to at least 95 percent of the laboratory maximum dry density as per ASTM D1557 test method.
- Particles larger than 1 inch should not be placed within 12 inches of the pavement subgrade. No more than 30 percent of the backfill volume should be larger than ¾-inch in the largest dimension. Gravel should be well mixed with finer soil. Rocks larger than 3 inches in the largest dimension should not be placed as trench backfill.

- Trench backfill should be compacted by mechanical methods, such as sheepsfoot, vibrating or pneumatic rollers or mechanical tampers to achieve the density specified herein. The backfill materials should be brought to within ± 3 percent of optimum moisture content for coarse-grained soil, and between optimum and 2 percent above optimum for fine-grained soil, then placed in horizontal layers. The thickness of uncompacted layers should not exceed 8 inches. Each layer should be evenly spread, moistened or dried as necessary, and then tamped or rolled until the specified density has been achieved.
- The contractor should select the equipment and processes to be used to achieve the specified density without damage to adjacent ground, structures, utilities and completed work.
- The field density of the compacted soil should be measured by the ASTM D1556 (Sand Cone) or ASTM D6938 (Nuclear Gauge) or equivalent.
- Trench backfill should not be placed, spread or rolled during unfavorable weather conditions. When the work is interrupted by heavy rain, fill operations should not resume until field tests by the project's geotechnical consultant indicate that the moisture content and density of the fill are in compliance with project specifications.

8.0 DESIGN RECOMMENDATIONS

General design recommendations, resistance to lateral loads, pipe design parameters, bearing pressures, and soil corrosivity are discussed in the following subsections.

8.1 General

Where pipes connect to rigid structures and are subjected to significant loads as the backfill is placed to finish grade, we recommend that provisions be incorporated in the design to provide support of these pipes where they exit the structures. Consideration can be given to flexible connections, concrete slurry support beneath the pipes where they exit the structures, overlaying the pipes with a few inches of compressible material, (i.e., Styrofoam, or other materials), or other techniques.

The various design recommendations provided in this section are based on the assumption that the above earthwork recommendations will be implemented. Soil types and parameters are relatively identical throughout the alignments. So, identical design parameters have been provided throughout the alignments.

8.2 Resistance to Lateral Loads

Resistance to lateral loads can be assumed to be provided by passive earth pressures and friction between construction materials and native soils. The resistance to lateral loads were estimated by using on-site native soils strength parameters obtained from laboratory testing. The resistance to lateral loads recommended for use in design of thrust blocks are presented in the following table.

Table No. 8, Resistance to Lateral Loads

Soil Parameters	Value
Passive earth pressure (psf per foot of depth)	275
Maximum allowable bearing pressure against native soils (psf)	3,000
Coefficient of friction between formed concrete and native soils, fs	0.35

8.3 Soil Parameters for Pipe Design

Structural design requires proper evaluation of all possible loads acting on pipe. The stresses and strains induced on buried pipe depend on many factors, including the type of soil, density, bearing pressure, angle of internal friction, coefficient of passive earth pressure, and coefficient of friction at the interface between the backfill and native soils. The recommended values of the various soil parameters for design are provided in the following table.

Table No. 9, Soil Parameters for Pipe Design

Soil Parameters	Value
Average compacted fill total unit weight (assuming 92% relative compaction), γ (pcf)	132
Angle of internal friction of soils, ϕ	33
Soil cohesion, c (psf)	40
Coefficient of friction between concrete and native soils, fs	0.35
Coefficient of friction between steel pipe and native soils, fs	0.30
Bearing pressure against native soils (psf)	3,000
Coefficient of passive earth pressure, Kp	3.39
Coefficient of active earth pressure, Ka	0.29
Modulus of Soil Reaction E' (psi)	1,500

8.4 Bearing Pressure for Anchor and Thrust Blocks

An allowable net bearing pressure presented in Table No. 9, *Soil Parameters for Pipe Design* may be used for anchor and thrust block design against alluvial soils. Such thrust blocks should be at least 18 inches wide.

If normal code requirements are applied for design, the above recommended bearing capacity and passive resistances may be increased by 33 percent for short duration loading such as seismic or wind loading.

8.5 Soil Corrosivity

Two representative soil samples were evaluated for corrosivity with respect to common pipe and construction materials such as concrete and steel. The test results are presented in Appendix B, *Laboratory Testing Program,* and are discussed in the following.

The sulfate contents of the sampled soils correspond to American Concrete Institute (ACI) exposure category S0 for these sulfate concentrations (ACI 318-14, Table 19.3.1.1). No concrete type restrictions are specified for exposure category S0 (ACI 318-14, Table 19.3.2.1). A minimum compressive strength of 2,500 psi is recommended.

Based on the site locations and the results of chloride testing of the site's soils, we do not anticipate that concrete structures will be exposed to external sources of chlorides, such as deicing chemicals, salt, brackish water, or seawater. ACI specifies exposure category C1 where concrete is exposed to moisture, but not to external sources of chlorides (ACI 318-14, Table 19.3.1.1). ACI provides concrete design recommendations in ACI 318-14, Table 19.3.2.1, including a compressive strength of at least 2,500 psi and a maximum chloride content of 0.3 percent.

According to Romanoff, 1957, the following table provides general guideline of soil corrosion based on electrical resistivity.

Table No. 10, Correlation Between Resistivity and Corrosion

Soil Resistivity (ohm-cm) per Caltrans CT 643	Corrosivity Category
Over 10,000	Mildly corrosive
2,000 – 10,000	Moderately corrosive
1,000 – 2,000	corrosive
Less than 1,000	Severe corrosive

The measured value of the minimum electrical resistivities of the samples when saturated were between 6,206 and 10,293 ohm-cm. This indicates that the soils tested ranged between moderately to mildly corrosive with ferrous metals in contact with the soil. Converse does not practice in the area of corrosion consulting. If needed, a qualified corrosion consultant should provide appropriate corrosion mitigation measures for any ferrous metals in contact with the subsurface soils.

9.0 PAVEMENT DESIGN RECOMMENDATIONS

Field measurements as shown in Table No. 5*, Existing Pavement Sections* indicate the existing pavement at Clearview Place was 9.0 inches and 0.0 inches of asphalt concrete (AC) and aggregate base (AB), respectively. The following subsections provide new asphalt concrete structural sections, and recommendations for pavement rehabilitation.

9.1 Full Section Removal and Replacement

This section contains our recommendations regarding full section removal and replacement for the proposed pavement rehabilitation.

9.1.1 Subgrade Preparation

Areas receiving new asphalt concrete and base sections should be underlain by compacted subgrade soils. Existing soils exposed below pavement replacement areas should be scarified at least 12 inches, moisture conditioned as needed to near optimum moisture content, and compacted to at least 95 percent of the laboratory maximum dry density (ASTM D 1557) to produce a firm and unyielding surface.

Aggregate base materials should be moisture conditioned as needed to near optimum moisture content and compacted to at least 95 percent of the laboratory maximum dry density (ASTM D 1557) for support of new pavement sections.

Asphaltic concrete materials should conform to Section 203 of the SSPWC and should be placed in accordance with Section 302.5 of the SSPWC, or as required by the City or County Standards.

Base materials should conform with Section 200-2.2,"Crushed Aggregate Base," of the current Standard Specifications for Public Works Construction (SSPWC; Public Works Standards, 2021) and should be placed in accordance with Section 301.2 of the SSPWC, or as required by the City or County Standards.

At or near the completion of grading, subsurface samples should be tested to evaluate the actual subgrade R-value for final pavement design.

Positive drainage should be provided away from all pavement areas to prevent seepage of surface and/or subsurface water into the pavement base and/or subgrade.

9.1.2 Asphalt Concrete Pavement

The R-value of the subgrade soils was not tested. Based on our previous experience in the City of Jurupa Valley, we have utilized an R-value of 50 and design Traffic Indices (TIs) ranging from 5 to 10.

Based on the above information, asphalt concrete and aggregate base thickness are determined using the *Caltrans Highway Design Manual (Caltrans, 2021)*, Chapter 630 with a safety factor of 0.2 for asphalt concrete/aggregate base Section and 0.1 for full depth asphalt concrete section. The City of Jurupa Valley and County of Riverside minimum asphalt pavement and aggregate base thickness requirements were also

considered in the pavement designs. Preliminary asphalt concrete pavement sections for each street are presented in the following table.

Table No. 11, Recommended Preliminary Pavement Sections

Design R-value	Traffic Index (TI)	Pavement Section		
		Asphalt Concrete (inches)	Aggregate Base (inches)	Full AC Section (inches)
50	5.0	3.0	4.0	4.5
	6.0	3.5	4.0	5.5
	7.0	4.0	4.5	7.0
	8.0	5.0	5.0	8.0
	9.0	5.5	6.5	9.0
	10.0	6.0	8.0	10.0

9.2 Full Depth Reclamation (FDR) with Mechanical Stabilization

The FDR with mechanical stabilization consists of pulverizing the existing AC layer with the underlying aggregate base material, compacting it to create at least a 10.0-inch layer of FDR, and overlaying with a new HMA layer thickness according to Table No. 11, *Recommended Preliminary Pavement Sections*. The properties of this layer are considered to be similar to an aggregate base material with a modulus of at least 25 ksi, which corresponds to an R-value of at least 70. An R Value of 50 was used conservatively for design.

The FDR layer is achieved by pulverizing the existing asphalt concrete with aggregate base, and or by also adding virgin granular or Reclaimed Asphalt Pavement (RAP) materials to the pulverized mixture to meet the required pulverized base material specification set by The Standard Specifications for Public Works Construction (Green Book) section 301-3.4.2.3. Please see Figure No. 3, *Typical FDR Section with an Elevation Restriction.*

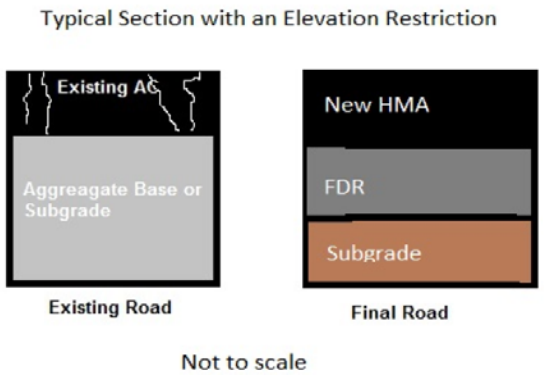


Figure No. 3, *Typical FDR Section with an Elevation Restriction*

9.2.1 Pulverized Material Preparation

Pulverized materials should be moisture conditioned as needed to near optimum moisture content and compacted to at least 95 percent of the laboratory maximum dry density (ASTM D1557) for support of new pavement sections. According to section 301-2.3 of the Greenbook, the compaction shall always be commenced along the edge of the area to be compacted and the roller shall gradually advance toward the center of the area to be compacted. Rollers shall be operated along lines parallel or concentric with the centerline of the road being constructed, and no material variation therefrom will be permitted. Existing asphalt concrete and base can be pulverized onsite and used as base material. The pulverized materials should conform to Section 200-2.8 of the Greenbook (latest edition) and should be placed in accordance with Section 301-2 of the Greenbook (latest edition). If the existing pulverized pavement does not conform to Greenbook specifications, refer to the section for full section removal and replacement. As a result of the FDR process, there may be an excess of base and AC to be disposed to meet the minimum AC thickness requirements and to match existing grade.

9.3 Mill and Overlay of Existing Pavement

Mill and Overlay sections are recommended in some of the explored areas. Mill and Overlay will require a minimum pavement grind of 2 inches, grind should match the depth of existing cracks, if any. Overlay to reach the required pavement structural sections listed in Table No. 11, Recommended Preliminary Pavement Sections.

10.0 CONSTRUCTION CONSIDERATIONS

Construction recommendations are presented below.

10.1 General

Prior to the start of construction, all existing underground utilities should be located along the pipeline alignments. Such utilities should either be protected in-place or removed and replaced during construction as required by the project specifications.

Sloped excavations may not be feasible in locations adjacent to existing utilities (if any). Where the side of the excavation is a vertical cut, it should be adequately supported by temporary shoring to protect workers and any adjacent structures.

All applicable requirements of the California Construction and General Industry Safety Orders, the Occupational Safety and Health Act, current amendments, and the Construction Safety Act should be met. The soils exposed in cuts should be observed during excavation by the owner's representative and the competent person employed by the contractor in accordance with regulations. If potentially unstable soil conditions are encountered, modifications of slope ratios for temporary cuts may be required.

10.2 Temporary Sloped Excavations

Temporary open-cut trenches may be constructed in areas not adjacent to existing underground utilities improvements with side slopes as recommended in the table below. Temporary cuts encountering soft and wet fine-grained soils, dry loose, cohesionless soils, or loose fill from trench backfill may have to be constructed at a flatter gradient than presented below.

Table No. 12, Slope Ratios for Temporary Excavations

Soil Type	OSHA Soil Type	Depth of Cut (feet)	Recommended Maximum Slope (Horizontal:Vertical)[1]
Sand with Silt (SP-SM), Silty Sand (SM), Clayey Sand (SC), and Sandy Silt (ML)	C	0-4	vertical
		4-10	1.5:1
		10-20	2:1

[1] Slope ratio is assumed to be constant from top to toe of slope, with level adjacent ground.

For shallow excavations up to 4 feet bgs, slope can be 1:1. For steeper temporary construction slopes or deeper excavations, or unstable soil encountered during the excavation, shoring or trench shields should be provided by the contractor as necessary to protect the workers in the excavation.

Surfaces exposed in sloped excavations should be kept moist but not saturated to retard raveling and sloughing during construction. Adequate provisions should be made to protect the slopes from erosion during periods of rainfall. Surcharge loads, including construction materials, should not be placed within 5 feet of the unsupported slope edge. Stockpiled soils with a height higher than 6 feet will require greater distance from trench edges.

10.3 Shoring Design

Temporary shoring will be required where open sloped excavations will not be feasible due to unstable soils or due to nearby existing structures or facilities. Temporary shoring may consist of conventional soldier piles and lagging or sheet piles or any piles selected by contractor. The shoring for the pipe excavations may be laterally supported by walers and cross bracing or may be cantilevered. Drilled excavations for soldier piles will require the use of drilling fluids to prevent caving and to maintain an opened hole for pile installation.

The active earth pressure behind any shoring depends primarily on the allowable movement, type of backfill materials, backfill slopes, wall inclination, surcharges, and any hydrostatic pressures.

The lateral earth pressures to be used in the design of shoring is presented in the following table.

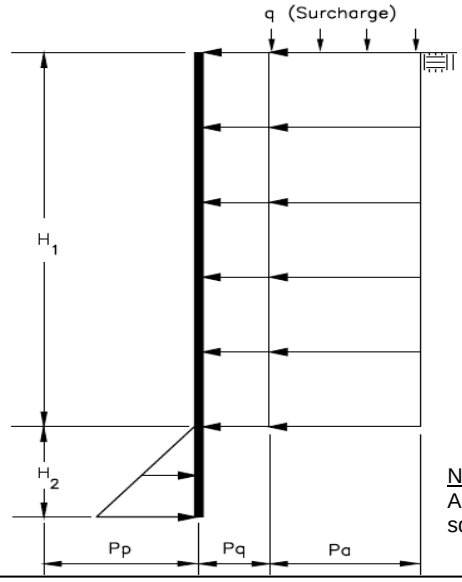
Table No. 13, Lateral Earth Pressures for Temporary Shoring

Lateral Resistance Soil Parameters*	Value
Active Earth Pressure (Braced Shoring) (psf) (A)	26
Active Earth Pressure (Cantilever Shoring) (psf) (B)	40
At-Rest Earth Pressure (Cantilever Shoring) (psf) (C)	60
Passive earth pressure (psf per foot of depth) (D)	275
Maximum allowable bearing pressure against native soils (psf) (E)	3,000
Coefficient of friction between sheet pile and native soils, fs (F)	0.25

* Parameters A through F are used in Figures No. 4 and 5 below.

Restrained (braced) shoring systems should be designed based on Figure No. 4, *Lateral Earth Pressures for Temporary Braced Excavation* to support a uniform rectangular lateral earth pressure.

Figure No. 4, Lateral Earth Pressures for Temporary Braced Excavation



Total Earth Pressure, P

P = Pq + Pa

Pq = 0.5q - incremental surcharge pressure

Pa = (A)H_1 - active earth pressure (Braced walls)

Lateral Pressure Resistance

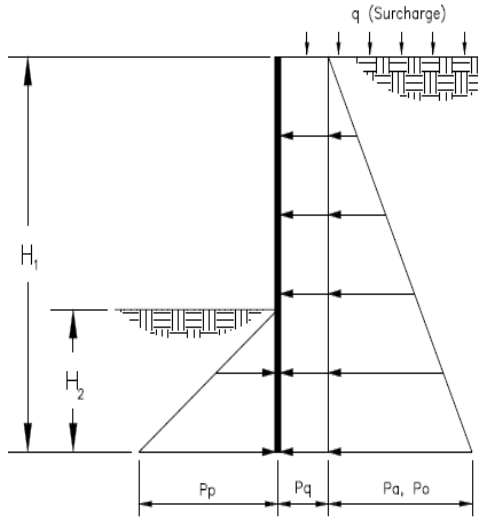
Pp = **(D) H_2 ≤ (E) psf** - passive earth pressure (on native soils)

μ = (F) - ultimate friction coefficient between steel sheet piles and soil

Note:
All values of height (H) in feet, pressure (P) and surcharge (q) in pounds per square foot (psf).

Unrestrained (cantilever) design of cantilever shoring consisting of soldier piles spaced at least two diameters on-center or sheet piles, can be based on Figure No. 5, *Lateral Earth Pressures on Temporary Cantilever Wall*.

Figure No. 5, Lateral Earth Pressures on Temporary Cantilever Wall



Total Earth Pressure, P

P = Pq + Pa, Po

Pq = 0.5q - incremental surcharge pressure

Pa = (B)H_1 - active earth pressure (Un-restrained)

Po = (C)H_1 - at rest earth pressure (Restrained)

Lateral Pressure Resistance

Pp = (D) **H_2 ≤ (E) psf** - passive earth pressure (on native soils)

μ = (F) - ultimate friction coefficient between steel sheet piles and soil

Note:
All values of height (H) in feet, pressure (P) and surcharge (q) in pounds per square foot (psf).

The provided pressures assume no hydrostatic pressures. If hydrostatic pressures are allowed to build up, the incremental earth pressures below the ground-water level should be reduced by 50 percent and added to hydrostatic pressure for total lateral pressure.

Passive resistance includes a safety factor of 1.5. The upper 1 foot for passive resistance should be ignored unless the surface is confined by a pavement or slab.

In addition to the lateral earth pressure, surcharge pressures due to miscellaneous loads, such as soil stockpiles, vehicular traffic or construction equipment located adjacent to the shoring, should be included in the design of the shoring. A uniform lateral pressure of 100 psf should be included in the upper 10 feet of the shoring to account for normal vehicular and construction traffic within 10 feet of the trench excavation. As previously mentioned, all shoring should be designed and installed in accordance with state and federal safety regulations.

The contractor should have provisions for soldier pile and sheet pile removal. All voids resulting from removal of shoring should be filled. The method for filling voids should be selected by the contractor, depending on construction conditions, void dimensions and available materials. The acceptable materials, in general, should be non-deleterious, and able to flow into the voids created by shoring removal (e.g., concrete slurry, "pea" gravel, etc.).

Excavations for the proposed pipeline should not extend below a 1:1 horizontal:vertical (H:V) plane extending from the bottom of any existing structures, utility lines or streets. Any proposed excavation should not cause loss of bearing and/or lateral supports of the existing utilities or streets.

If the excavation extends below a 1:1 (H:V) plane extending from the bottom of the existing structures, utility lines or streets, a maximum of 10 feet of slope face parallel to the existing improvement should be exposed at a time to reduce the potential for instability. Backfill should be accomplished in the shortest period of time and in alternating sections.

11.0 CLOSURE

This report is prepared for the project described herein and is intended for use solely by Albert A. Webb Associates, JCSD, and their authorized agents, to assist in the design and construction of the proposed project. Our findings and recommendations were obtained in accordance with generally accepted professional principles practiced in geotechnical engineering. We make no other warranty, either expressed or implied.

Converse Consultants is not responsible or liable for any claims or damages associated with interpretation of available information provided to others. Field exploration identifies actual soil conditions only at those points where samples are taken, when they are taken. Data derived through sampling and laboratory testing is extrapolated by Converse employees who render an opinion about the overall soil conditions. Actual conditions in areas not sampled may differ. In the event that changes to the project occur, or additional, relevant information about the project is brought to our attention, the recommendations contained in this report may not be valid unless these changes and additional relevant information are reviewed, and the recommendations of this report are modified or verified in writing. In addition, the recommendations can only be finalized by observing actual subsurface conditions revealed during construction. Converse cannot be held responsible for misinterpretation or changes to our recommendations made by others during construction.

As the project evolves, continued consultation and construction monitoring by a qualified geotechnical consultant should be considered an extension of geotechnical investigation services performed to date. The geotechnical consultant should review plans and specifications to verify that the recommendations presented herein have been appropriately interpreted, and that the design assumptions used in this report are valid. Where significant design changes occur, Converse may be required to augment or modify the recommendations presented herein. Subsurface conditions may differ in some locations from those encountered in the explorations, and may require additional analyses and, possibly, modified recommendations.

Design recommendations given in this report are based on the assumption that the recommendations contained in this report are implemented. Additional consultation may be prudent to interpret Converse's findings for contractors, or to possibly refine these recommendations based upon the review of the actual site conditions encountered during construction. If the scope of the project changes, if project completion is to be delayed, or if the report is to be used for another purpose, this office should be consulted.

12.0 REFERENCES

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Appendix A

Field Exploration

APPENDIX A

FIELD EXPLORATION

Our field investigation included alignments reconnaissance and a subsurface exploration program consisting of drilling soil borings. During the field reconnaissance, the surface conditions were noted, and the boring were marked at locations approved by Tyler Vigneault with Webb Associates using approximate distances from local features as a guide and should be considered accurate only to the degree implied by the method used to locate them. Permit was obtained from the city of Jurupa Valley prior to drilling.

Four exploratory borings (BH-01 through BH-04) were drilled on December 5, 2023, along the pipe alignments to investigate the subsurface conditions. BH-01, through 04 were drilled in an existing dirt surface. The borings were drilled between 15.3 and 15.4 feet below existing ground surface (bgs).

The borings were drilled using a truck-mounted drill rig equipped with 8-inch diameter hollow-stem augers for soil sampling. Encountered materials were continuously logged by a Converse geologist and classified in the field by visual classification in accordance with the Unified Soil Classification System. Where appropriate, the field descriptions and classifications have been modified to reflect laboratory test results.

Relatively undisturbed samples were obtained using California Modified Samplers (2.4 inches inside diameter and 3.0 inches outside diameter) lined with thin sample rings. The steel ring sampler was driven into the bottom of the borehole with successive drops of a 140-pound driving weight falling 30 inches. Blow counts at each sample interval are presented on the boring logs. Samples were retained in brass rings (2.4 inches inside diameter and 1.0 inch in height) and carefully sealed in waterproof plastic containers for shipment to the Converse laboratory. Bulk samples of typical soil types were also obtained.

The exact depths at which material changes occur cannot always be established accurately. Unless a more precise depth can be established by other means, changes in material conditions that occur between drive samples are indicated on the log at the top of the next drive sample.

Following the completion of logging and sampling, all borings were backfilled with soil cuttings and tamped by pushing down with augers using the weight of the drill rig. The pavement section at BH-03 was replaced with quick-set cement and the surface dyed black to blend with the surroundings. We recommend the owner monitor the boring locations and backfill any depressions that might occur or provide protection around the boring locations to prevent trip and fall injuries from occurring near the area of any potential settlement.

For a key to soil symbols and terminology used in the boring logs, refer to Drawing Nos. A-1a and A-1b, *Unified Soil Classification and Key to Boring Log Symbols*. For logs of borings, see Drawing Nos. A-2 through A-5, *Logs of Borings*.

SOIL CLASSIFICATION CHART

MAJOR DIVISIONS			SYMBOLS GRAPH	SYMBOLS LETTER	TYPICAL DESCRIPTIONS
COARSE GRAINED SOILS	GRAVEL AND GRAVELLY SOILS	CLEAN GRAVELS (LITTLE OR NO FINES)		GW	WELL-GRADED GRAVELS, GRAVEL - SAND MIXTURES, LITTLE OR NO FINES
	MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE			GP	POORLY-GRADED GRAVELS, GRAVEL - SAND MIXTURES, LITTLE OR NO FINES
		GRAVELS WITH FINES (APPRECIABLE AMOUNT OF FINES)		GM	SILTY GRAVELS, GRAVEL - SAND - SILT MIXTURES
				GC	CLAYEY GRAVELS, GRAVEL - SAND - CLAY MIXTURES
MORE THAN 50% OF MATERIAL IS LARGER THAN NO. 200 SIEVE SIZE	SAND AND SANDY SOILS	CLEAN SANDS (LITTLE OR NO FINES)		SW	WELL-GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
	MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE			SP	POORLY-GRADED SANDS, GRAVELLY SAND, LITTLE OR NO FINES
		SANDS WITH FINES (APPRECIABLE AMOUNT OF FINES)		SM	SILTY SANDS, SAND - SILT MIXTURES
				SC	CLAYEY SANDS, SAND - CLAY MIXTURES
FINE GRAINED SOILS	SILTS AND CLAYS	LIQUID LIMIT LESS THAN 50		ML	INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS OR CLAYEY SILTS WITH SLIGHT PLASTICITY
				CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS
				OL	ORGANIC SILTS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY
MORE THAN 50% OF MATERIAL IS SMALLER THAN NO. 200 SIEVE SIZE	SILTS AND CLAYS	LIQUID LIMIT GREATER THAN 50		MH	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SAND OR SILTY SOILS
				CH	INORGANIC CLAYS OF HIGH PLASTICITY
				OH	ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS
HIGHLY ORGANIC SOILS				PT	PEAT, HUMUS, SWAMP SOILS WITH HIGH ORGANIC CONTENTS

NOTE: DUAL SYMBOLS ARE USED TO INDICATE BORDERLINE SOIL CLASSIFICATIONS

FIELD AND LABORATORY TESTS

C	Consolidation (ASTM D 2435)
CL	Collapse Potential (ASTM D 4546)
CP	Compaction Curve (ASTM D 1557)
CR	Corrosion, Sulfates, Chlorides (CTM 643-99; 417; 422)
CU	Consolidated Undrained Triaxial (ASTM D 4767)
DS	Direct Shear (ASTM D 3080)
EI	Expansion Index (ASTM D 4829)
M	Moisture Content (ASTM D 2216)
OC	Organic Content (ASTM D 2974)
P	Permeablility (ASTM D 2434)
PA	Particle Size Analysis (ASTM D 6913 [2002])
PI	Liquid Limit, Plastic Limit, Plasticity Index (ASTM D 4318)
PL	Point Load Index (ASTM D 5731)
PM	Pressure Meter
PP	Pocket Penetrometer
R	R-Value (CTM 301)
SE	Sand Equivalent (ASTM D 2419)
SG	Specific Gravity (ASTM D 854)
SW	Swell Potential (ASTM D 4546)
TV	Pocket Torvane
UC	Unconfined Compression - Soil (ASTM D 2166)
	Unconfined Compression - Rock (ASTM D 7012)
UU	Unconsolidated Undrained Triaxial (ASTM D 2850)
UW	Unit Weight (ASTM D 2937)

BORING LOG SYMBOLS

SAMPLE TYPE

- STANDARD PENETRATION TEST — Split barrel sampler in accordance with ASTM D-1586-84 Standard Test Method
- DRIVE SAMPLE 2.42" I.D. sampler (CMS).
- DRIVE SAMPLE No recovery
- BULK SAMPLE
- GROUNDWATER WHILE DRILLING
- GROUNDWATER AFTER DRILLING

DRILLING METHOD SYMBOLS

Auger Drilling | Mud Rotary Drilling | Dynamic Cone or Hand Driven | Diamond Core

UNIFIED SOIL CLASSIFICATION AND KEY TO BORING LOG SYMBOLS

Converse Consultants

JCSD's FY 23/24 Annual Water (and Sewer) Repair and Pipeline Replacement (44th Street)
City of Jurupa Valley, Riverside County, California
For: Albert A. Webb Associates

Project No. **23-81-189-01**

Drawing No. **A-1a**

Project ID: 22-81-189-01.GPJ; Template: Key

CONSISTENCY OF COHESIVE SOILS

Descriptor	Unconfined Compressive Strength (tsf)	SPT Blow Counts	Pocket Penetrometer (tsf)	CA Sampler	Torvane (tsf)	Field Approximation
Very Soft	<0.25	< 2	<0.25	<3	<0.12	Easily penetrated several inches by fist
Soft	0.25 - 0.50	2 - 4	0.25 - 0.50	3 - 6	0.12 - 0.25	Easily penetrated several inches by thumb
Medium Stiff	0.50 - 1.0	5 - 8	0.50 - 1.0	7 - 12	0.25 - 0.50	Can be penetrated several inches by thumb with moderate effort
Stiff	1.0 - 2.0	9 - 15	1.0 - 2.0	13 - 25	0.50 - 1.0	Readily indented by thumb but penetrated only with great effort
Very Stiff	2.0 - 4.0	16 - 30	2.0 - 4.0	26 - 50	1.0 - 2.0	Readily indented by thumbnail
Hard	>4.0	>30	>4.0	>50	>2.0	Indented by thumbnail with difficulty

APPARENT DENSITY OF COHESIONLESS SOILS

Descriptor	SPT N_{60}- Value (blows / foot)	CA Sampler
Very Loose	<4	<5
Loose	4- 10	5 - 12
Medium Dense	11 - 30	13 - 35
Dense	31 - 50	36 - 60
Very Dense	>50	>60

MOISTURE

Descriptor	Criteria
Dry	Absence of moisture, dusty, dry to the touch
Moist	Damp but no visible water
Wet	Visible free water, usually soil is below water table

PERCENT OF PROPORTION OF SOILS

Descriptor	Criteria
Trace (fine)/ Scattered (coarse)	Particles are present but estimated to be less than 5%
Few	5 to 10%
Little	15 to 25%
Some	30 to 45%
Mostly	50 to 100%

SOIL PARTICLE SIZE

Descriptor		Size
Boulder		> 12 inches
Cobble		3 to 12 inches
Gravel	Coarse	3/4 inch to 3 inches
	Fine	No. 4 Sieve to 3/4 inch
Sand	Coarse	No. 10 Sieve to No. 4 Sieve
	Medium	No. 40 Sieve to No. 10 Sieve
	Fine	No. 200 Sieve to No. No. 40 Sieve
Silt and Clay		Passing No. 200 Sieve

PLASTICITY OF FINE-GRAINED SOILS

Descriptor	Criteria
Nonplastic	A 1/8-inch thread cannot be rolled at any water content.
Low	The thread can barely be rolled, and the lump cannot be formed when drier than the plastic limit.
Medium	The thread is easy to roll, and not much time is required to reach the plastic limit; it cannot be rerolled after reaching the plastic limit. The lump crumbles when drier than the plastic limit.
High	It takes considerable time rolling and kneading to reach the plastic limit. The thread can be rerolled several times after reaching the plastic limit. The lump can be formed without crumbling when drier than the plastic limit.

CEMENTATION/ Induration

Descriptor	Criteria
Weak	Crumbles or breaks with handling or little finger pressure.
Moderate	Crumbles or breaks with considerable finger pressure.
Strong	Will not crumble or break with finger pressure.

NOTE: This legend sheet provides descriptions and associated criteria for required soil description components only. Refer to Caltrans Soil and Rock Logging, Classification, and Presentation Manual (2010), Section 2, for tables of additional soil description components and discussion of soil description and identification.

UNIFIED SOIL CLASSIFICATION AND KEY TO BORING LOG SYMBOLS

Log of Boring No. BH-01/Mission Boulevard

Date Drilled: 12/5/2023 Logged by: JAVIER D. CALZADA Checked By: HASHMI QUAZI

Equipment: 8" DIAMETER HOLLOW STEM AUGER Driving Weight and Drop: 140 lbs / 30 in

Ground Surface Elevation (ft): 782 Depth to Water (ft, bgs): NOT ENCOUNTERED

Depth (ft)	Graphic Log	SUMMARY OF SUBSURFACE CONDITIONS	SAMPLES: DRIVE	SAMPLES: BULK	BLOWS	MOISTURE (%)	DRY UNIT WT. (pcf)	OTHER
		This log is part of the report prepared by Converse for this project and should be read together with the report. This summary applies only at the location of the Boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered.						
		ALLUVIUM **SILTY SAND (SM):** fine to coarse-grained, few gravel 1" in maximum dimension, medium dense, moist, dark brown.	■	▨	7/8/7	7	125	CP, PA
5		**CLAYEY SAND (SC):** fine to coarse-grained, trace silt, caliche, medium dense, moist, dark brown.	■		10/12/19	8	105	DS
		SAND WITH SILT (SP-SM): fine to coarse-grained sand, few gravel up to 0.5" in maximum dimension, trace silt, micaceous, orange oxidation staining, very dense, moist, white to grayish brown.	■		46/50-3"	8	94	
10			■	▨	50-4"	9	113	
								SE
15					50-4"			*no recovery
		End of boring at 15.3 bgs. No groundwater encountered. Boring backfilled with soil cuttings and tamped with an auger using the weight of the drill rig on 12/05/2023.						

Converse Consultants

JCSD's FY 23/24 Annual Water (and Sewer) Repair and Pipeline Replacement (44th Street)
City of Jurupa Valley, Riverside County, California
For: Albert A. Webb Associates

Project No. 23-81-189-01

Drawing No. A-2

Log of Boring No. BH-02/Agate Street

Date Drilled: 12/5/2023 Logged by: JAVIER D. CALZADA Checked By: HASHMI QUAZI

Equipment: 8" DIAMETER HOLLOW STEM AUGER Driving Weight and Drop: 140 lbs / 30 in

Ground Surface Elevation (ft): 777 Depth to Water (ft, bgs): NOT ENCOUNTERED

Depth (ft)	Graphic Log	SUMMARY OF SUBSURFACE CONDITIONS	SAMPLES: DRIVE	SAMPLES: BULK	BLOWS	MOISTURE (%)	DRY UNIT WT. (pcf)	OTHER
		This log is part of the report prepared by Converse for this project and should be read together with the report. This summary applies only at the location of the Boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered.						
		ALLUVIUM **SANDY SILT (ML):** fine to coarse-grained sand, medium dense, moist, light brown.	■		8/15/17	3	120	
5		**SILTY SAND (SM):** fine to coarse-grained, few gravel up to 1" in maximum dimension, medium dense, moist, brown.	■	▨	9/13/11	3	115	CR
		- @ 7.5': very dense.		▨	50-4"			* no recovery
10				▨	50-5"			* no recovery
15		- @ 15.0': micaceous.	■		50-5"	8	123	
		End of boring at 15.4 bgs. No groundwater encountered. Boring backfilled with soil cuttings and tamped with an auger using the weight of the drill rig on 12/05/2023.						

Converse Consultants

JCSD's FY 23/24 Annual Water (and Sewer) Repair and Pipeline Replacement (44th Street)
City of Jurupa Valley, Riverside County, California
For: Albert A. Webb Associates

Project No. 23-81-189-01

Drawing No. A-3

Log of Boring No. BH-03/Clearview Place

Date Drilled: 12/5/2023 Logged by: JAVIER D. CALZADA Checked By: HASHMI QUAZI

Equipment: 8" DIAMETER HOLLOW STEM AUGER Driving Weight and Drop: 140 lbs / 30 in

Ground Surface Elevation (ft): 780 Depth to Water (ft, bgs): NOT ENCOUNTERED

Depth (ft)	Graphic Log	SUMMARY OF SUBSURFACE CONDITIONS	SAMPLES: DRIVE	SAMPLES: BULK	BLOWS	MOISTURE (%)	DRY UNIT WT. (pcf)	OTHER
		This log is part of the report prepared by Converse for this project and should be read together with the report. This summary applies only at the location of the Boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered.						
		9" ASPHALT CONCRETE / NO AGGREGATE BASE						
		ALLUVIUM						CP
		SAND WITH SILT (SP-SM): fine to coarse-grained \ sand, few gravel up to 1" in maximum dimension, very dense, moist, orangish brown.	■	▨	24/50-3"	7	101	
5		- @ 5.0': few gravel up to 2" maximum dimension.	■		50-5"	6	96	
		- @ 7.5': micaceous.	■		50-4"	4	113	
10		**SILTY SAND (SM):** fine to coarse-grained, few gravel up to 0.75" in maximum dimension, very dense, moist, orangish gray.	■	▨	50-4"	3	112	CR, PA, SE
15					50-4"			* no recovery
		End of boring at 15.3 bgs. No groundwater encountered. Boring backfilled with soil cuttings, tamped with an auger using the weight of the drill rig, patched with quick-set cement and dyed black on 12/05/2023.						

Converse Consultants

JCSD's FY 23/24 Annual Water (and Sewer) Repair and Pipeline Replacement (44th Street)
City of Jurupa Valley, Riverside County, California
For: Albert A. Webb Associates

Project No. 23-81-189-01

Drawing No. A-4

Log of Boring No. BH-04/Galena Street

Date Drilled: 12/5/2023 Logged by: JAVIER D. CALZADA Checked By: HASHMI QUAZI

Equipment: 8" DIAMETER HOLLOW STEM AUGER Driving Weight and Drop: 140 lbs / 30 in

Ground Surface Elevation (ft): 762 Depth to Water (ft, bgs): NOT ENCOUNTERED

Depth (ft)	Graphic Log	SUMMARY OF SUBSURFACE CONDITIONS	SAMPLES: DRIVE	SAMPLES: BULK	BLOWS	MOISTURE (%)	DRY UNIT WT. (pcf)	OTHER
		This log is part of the report prepared by Converse for this project and should be read together with the report. This summary applies only at the location of the Boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered.						
		ALLUVIUM						
		SILTY SAND WITH GRAVEL (SM): fine to coarse-grained, gravel up to 0.75" in maximum dimension, medium dense, moist, orangish brown.	■	▨	9/7/6	6	117	PA, SE
5			■		5/6/7	6	113	
		SAND WITH SILT (SP-SM): fine to medium-grained sand, dense, moist, orangish brown.	■		12/24/27	5	118	DS
10		- @ 10.0': fine to coarse-grained sand, few gravel up to 2" maximum dimension, very dense.	■		33/34/40	5	110	
15		**SILTY SAND WITH GRAVEL (SM):** fine to coarse-grained, gravel up to 2" maximum dimension, very dense, moist, orangish brown.	■		50-4"	8	117	
		End of boring at 15.3 bgs. No groundwater encountered. Boring backfilled with soil cuttings and tamped with an auger using the weight of the drill rig on 12/05/2023.						

Converse Consultants

JCSD's FY 23/24 Annual Water (and Sewer) Repair and Pipeline Replacement (44th Street)
City of Jurupa Valley, Riverside County, California
For: Albert A. Webb Associates

Project No. 23-81-189-01

Drawing No. A-5

Appendix B

Laboratory Testing Program

APPENDIX B

LABORATORY TESTING PROGRAM

Tests were conducted in our laboratory on representative soil samples for the purpose of classification and evaluation of their physical properties and engineering characteristics. The amount and selection of tests were based on the geotechnical parameters required for this project. Test results are presented herein and on the *Logs of Borings*, in Appendix A, *Field Exploration*. The following is a summary of the various laboratory tests conducted for this project.

In-Situ Moisture Content and Dry Density

In-situ dry density and moisture content tests were performed on relatively undisturbed ring samples, in accordance with ASTM Standard D2216 and D2937 to aid soils classification and to provide qualitative information on strength and compressibility characteristics of the alignment's soils. For test results, see the *Logs of Borings* in Appendix A, *Field Exploration*.

Sand Equivalent (SE)

Three representative soil samples were tested in accordance with the ASTM Standard D2419 test method to determine the sand equivalent. The test results are presented in the following table.

Table No. B-1, Sand Equivalent Test Results

Boring No.	Depth (feet)	Soil Description	Sand Equivalent
BH-01	10-15	Sand with Silt (SP-SM)	30
BH-03	10-15	Silty Sand (SM)	35
BH-04	0-5	Silty Sand with Gravel (SM)	18

Soil Corrosivity (CR)

Two representative soil samples were tested to determine minimum electrical resistivity, pH, and chemical content, including soluble sulfate and chloride concentrations. The purpose of these tests was to determine the corrosion potential of soils when placed in contact with common construction materials. The tests were performed by AP Engineering and Testing, Inc. (Pomona, CA) in accordance with Caltrans Test Methods 643, 422 and 417. Test results are presented in the following table.

Table No. B-2, Summary of Soil Corrosivity Test Results

Boring No.	Depth (feet)	pH	Soluble Sulfates (CA 417) (ppm)	Soluble Chlorides (CA 422) (ppm)	Min. Resistivity (CA 643) (Ohm-cm)
BH-02	5-10	8.3	30	19	10,293
BH-03	10-15	8.0	35	28	6,206

Grain-Size Analyses (PA)

To assist in classification of soils, mechanical grain-size analyses were performed on three select samples in accordance with the ASTM Standard D6913 test method. Grain-size curves are shown in Drawing No. B-1, *Grain Size Distribution Results* and results are presented in the below table.

Table No. B-3, Grain Size Distribution Test Results

Boring No.	Depth (ft)	Soil Classification	% Gravel	% Sand	%Silt	%Clay
BH-01	0-5	Silty Sand (SM)	8.0	64.8	27.2	
BH-03	10-15	Silty Sand (SM)	9.0	75.5	15.5	
BH-04	0-5	Silty Sand with Gravel (SM)	16.0	57.2	26.8	

Maximum Density and Optimum Moisture Content (CP)

Laboratory maximum dry density-optimum moisture content relationship tests were performed on two representative bulk samples. The tests were conducted in accordance with the ASTM Standard D1557 test method. The test results are presented in Drawing No. B-2, *Moisture-Density Relationship Results,* and are summarized in the following table.

Table No B-4, Summary of Moisture-Density Relationship Results

Boring No.	Depth (feet)	Soil Description	Optimum Moisture (%)	Maximum Density (lb/cft)
BH-01	0-5	Silty Sand (SM), Dark Brown	7.5	134.3
BH-03	1-5	Sand with Silt (SP-SM), Orangish Brown	8.8 (7.8*)	129.7 (132.9*)

* Rock correction, BH-03 = 10.3%.

Direct Shear (DS)

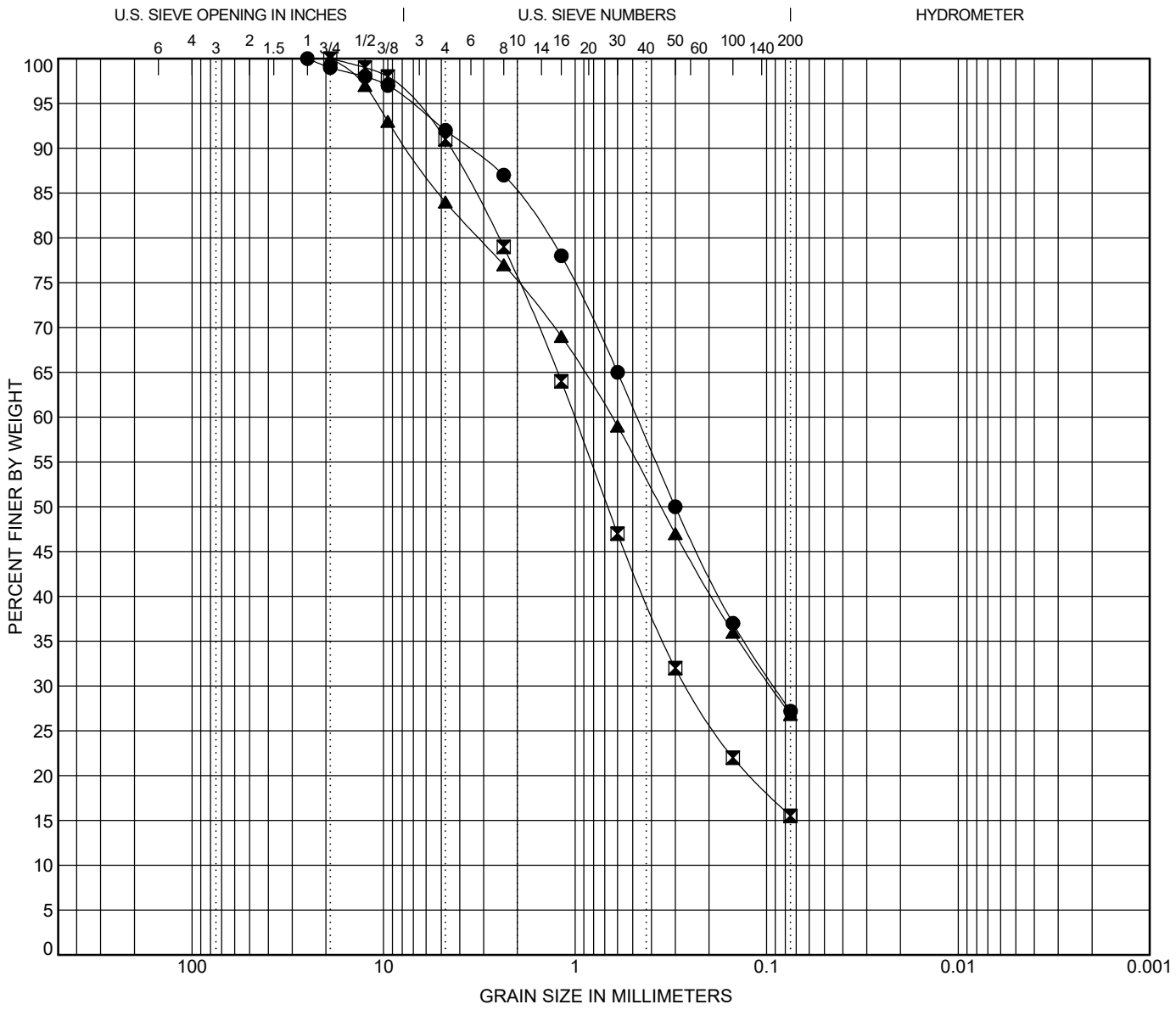
Two direct shear tests were performed on relatively undisturbed samples in accordance with ASTM Standard 3080. For each test, 3 samples contained in a brass sampler ring were placed, one at a time, directly into the test apparatus and subjected to a range of normal loads appropriate for the anticipated conditions. The samples were then sheared at constant strain rates of 0.02 and 0.04 inch/minute. Shear deformation was recorded until a maximum of about 0.25-inch shear displacement was achieved. Ultimate strength was selected from the shear-stress deformation data and plotted to determine the shear strength parameters. For test results, including sample density and moisture content, see Drawing Nos. B-3 through B-4*, Direct Shear Test Results,* and in the following table.

Table No. B-5, Summary of Direct Shear Test Results

Boring No.	Depth (feet)	Soil Description	Peak Strength Parameters	
			Friction Angle (degrees)	Cohesion (psf)
BH-01	5.0-6.5	Clayey Sand (SC)	33	240
BH-04	7.5-9.0	Sand with Silt (SP-SM)	33	40

Sample Storage

Soil samples presently stored in our laboratory will be discarded 30 days after the date of this report, unless this office receives a specific request to retain the samples for a longer period.



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

	Boring No.	Depth (ft)	Description	LL	PL	PI	Cc	Cu
●	**BH-01**	**0-5**	**SILTY SAND (SM)**					
⊠	**BH-03**	**10-15**	**SILTY SAND (SM)**					
▲	**BH-04**	**0-5**	**SILTY SAND WITH GRAVEL (SM)**					

	Boring No.	Depth (ft)	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
●	**BH-01**	**0-5**	**25**	**0.476**	**0.091**		**8.0**	**64.8**	**27.2**	
⊠	**BH-03**	**10-15**	**19**	**1.006**	**0.261**		**9.0**	**75.5**	**15.5**	
▲	**BH-04**	**0-5**	**19**	**0.642**	**0.095**		**16.0**	**57.2**	**26.8**	

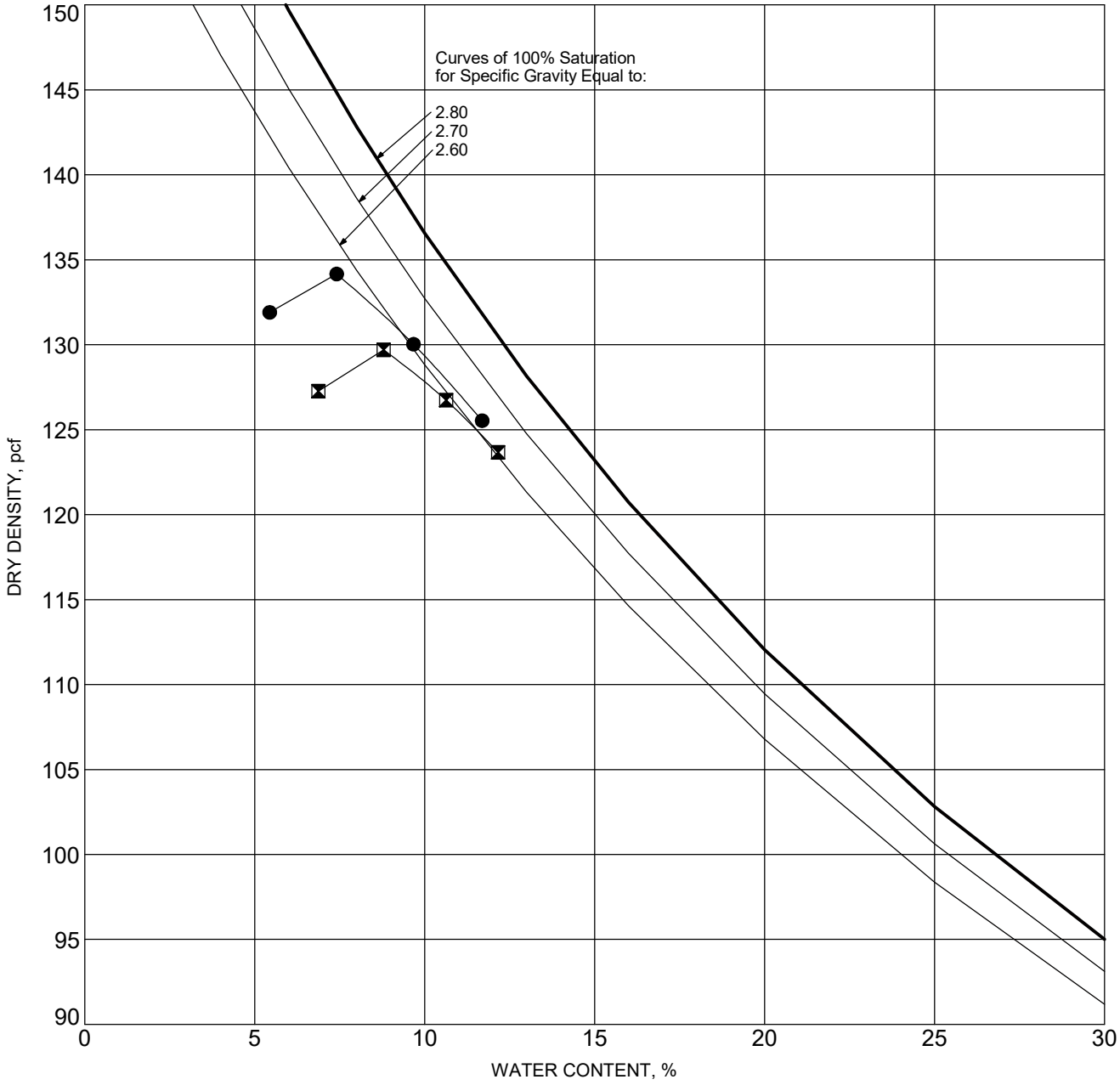
GRAIN SIZE DISTRIBUTION RESULTS

Converse Consultants

JCSD's FY 23/24 Annual Water (and Sewer) Repair and Pipeline Replacement (44th Street)
City of Jurupa Valley, Riverside County, California
For: Albert A. Webb Associates

Project No. **23-81-189-01**

Drawing No. **B-1**



SYMBOL	BORING NO.	DEPTH (ft)	DESCRIPTION	ASTM TEST METHOD	OPTIMUM WATER, %	MAXIMUM DRY DENSITY, pcf
●	**BH-01**	**0-5**	**SILTY SAND (SM) DARK BROWN**	**D1557 Method B**	**7.5**	**134.3**
⊠	**BH-03**	**1-5**	**SAND WITH SILT (SP-SM), ORANGISH BROWN**	**D1557 Method B**	**8.8 (7.8*)**	**129.7 (132.9*)**

(* Rock correction: BH-03 = 10.3%)

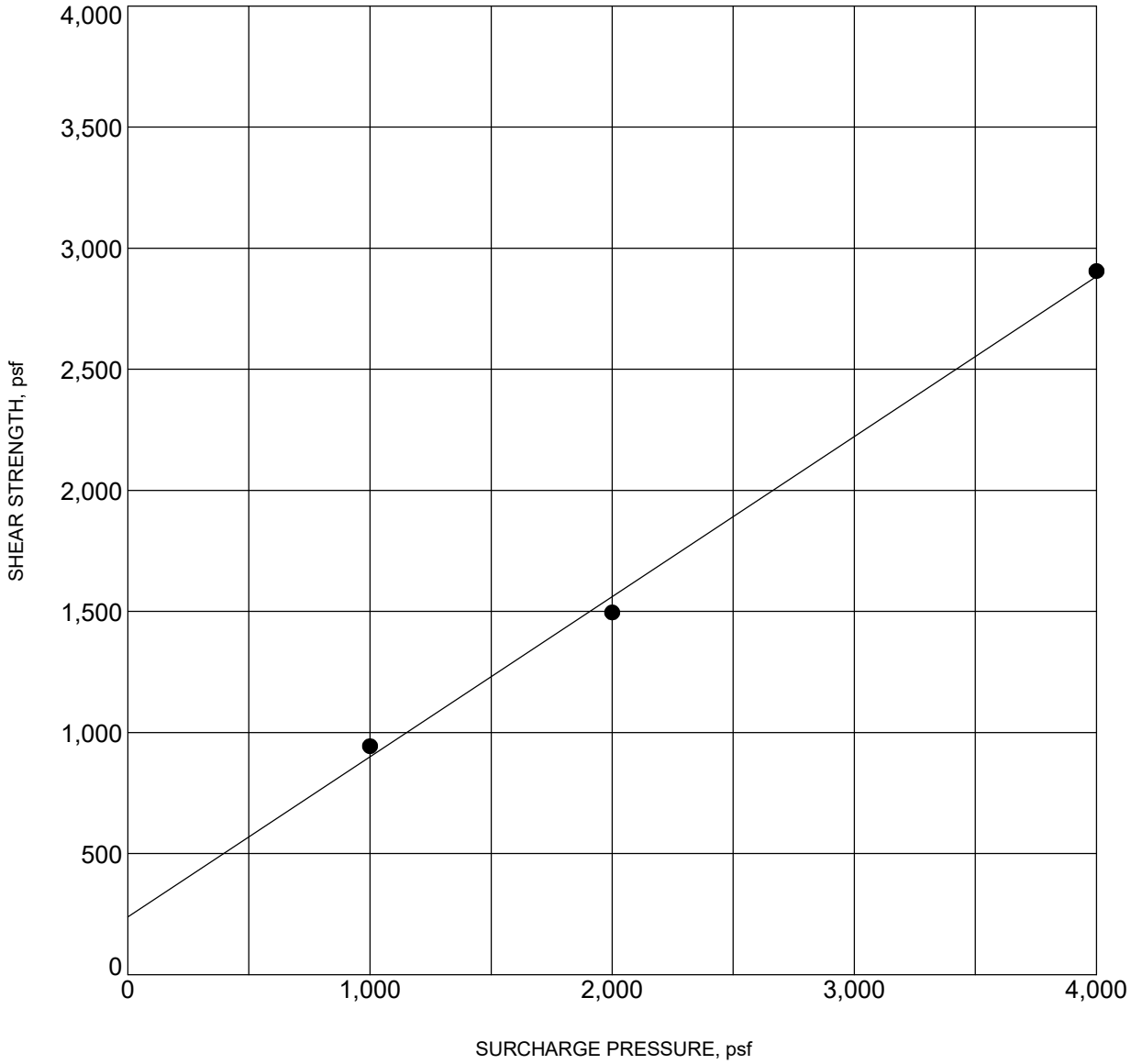
MOISTURE-DENSITY RELATIONSHIP RESULTS

Converse Consultants

JCSD's FY 23/24 Annual Water (and Sewer) Repair and Pipeline Replacement (44th Street)
City of Jurupa Valley, Riverside County, California
For: Albert A. Webb Associates

Project No. **23-81-189-01**

Drawing No. **B-2**



BORING NO.	:	**BH-01**	DEPTH (ft)	:	**5.0-6.5**
DESCRIPTION	:	**CLAYEY SAND (SC)**			
COHESION (psf)	:	**240**	FRICTION ANGLE (degrees):		**33**
MOISTURE CONTENT (%)	:	**8**	DRY DENSITY (pcf)	:	**105**

NOTE: Ultimate Strength.

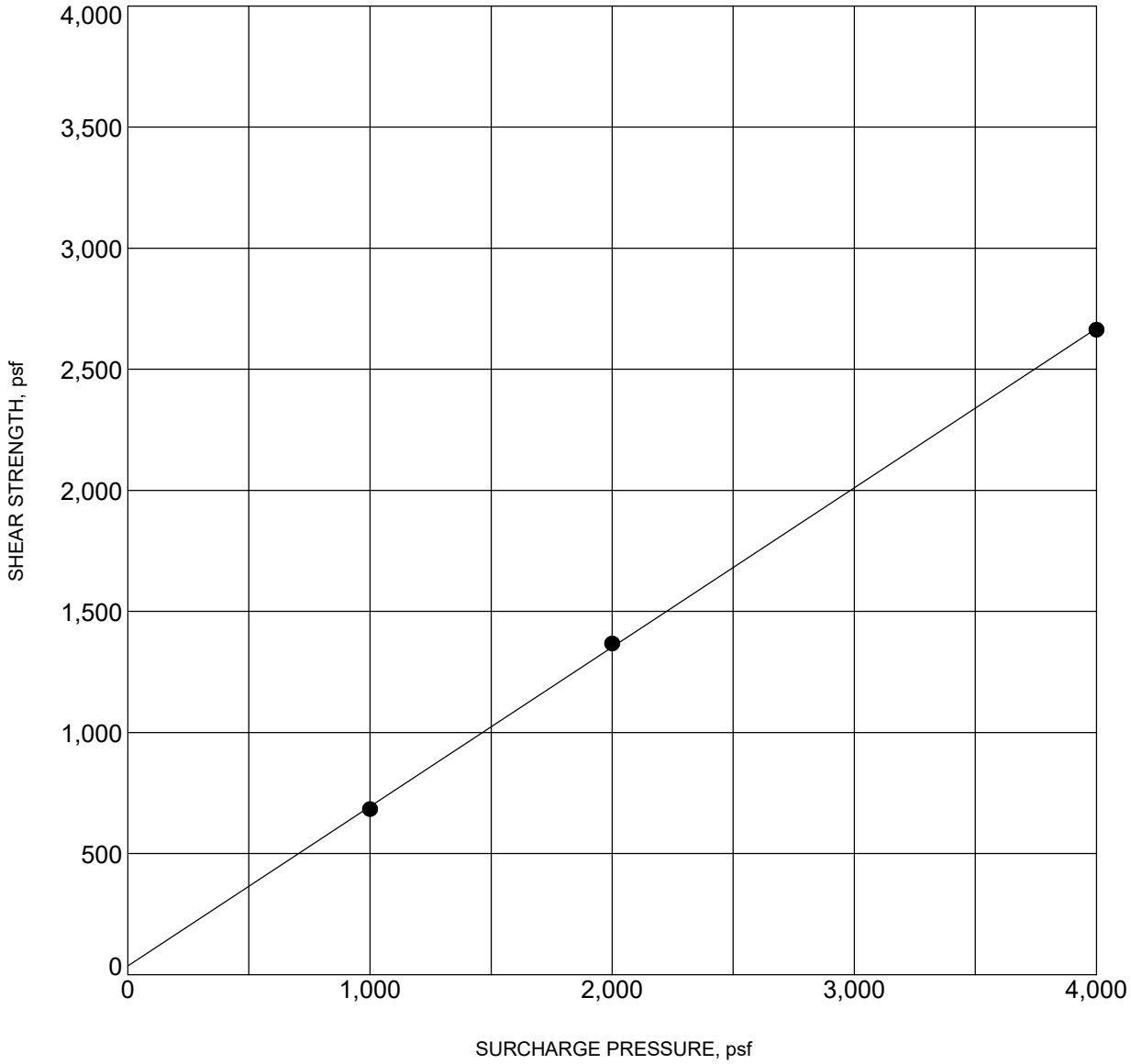
DIRECT SHEAR TEST RESULTS

Converse Consultants

JCSD's FY 23/24 Annual Water (and Sewer) Repair and Pipeline Replacement (44th Street)
City of Jurupa Valley, Riverside County, California
For: Albert A. Webb Associates

Project No. **23-81-189-01**

Drawing No. **B-3**



BORING NO.	:	**BH-04**	DEPTH (ft)	:	**7.5-9.0**
DESCRIPTION	:	**SAND WITH SILT (SP-SM)**			
COHESION (psf)	:	**40**	FRICTION ANGLE (degrees):		**33**
MOISTURE CONTENT (%)	:	**5**	DRY DENSITY (pcf)	:	**118**

NOTE: Ultimate Strength.

DIRECT SHEAR TEST RESULTS

Converse Consultants

JCSD's FY 23/24 Annual Water (and Sewer) Repair and Pipeline Replacement (44th Street)
City of Jurupa Valley, Riverside County, California
For: Albert A. Webb Associates

Project No. **23-81-189-01**

Drawing No. **B-4**

APPENDIX B

Jurupa Valley Encroachment Permit

City of Jurupa Valley
Engineering Division
Encroachment Permit

Permit No: EP24-409
Status: Issued
Submittal Date: 08/21/2024
Issue Date: 08/29/2024
Expiration Date: 11/27/2024

Project Address/Location:	**Assessor's Parcel Number:**
44th St Project	

Description of Work: CONDITIONAL PERMIT**The project seeks to replace existing water and sewer mains in the streets described below:

Galena Street - Approximately 1,290 LF of 12-inch diameter C-909 PVC water pipeline and approximately 620 of 8-inch diameter PVC SDR-35 sewer pipeline

Agate Street - Approximately 2,650 LF of 12-inch diameter C-909 PVC water pipeline and approximately 450 LF of 8-inch diameter PVC SDR-35 sewer pipeline

44th Street - Approximately 1,350 LF of 8-inch diameter C-909 PVC water pipeline and approximately 550 LF of 8-inch diameter PVC SDR-35 sewer pipeline

45th Street - Approximately 1,355 LF of 8-inch diameter C-909 PVC water pipeline in 45th Street

Tammy Lane - Approximately 440 LF of 8-inch diameter C-909 PVC water pipeline and approximately 370 of 8-inch diameter PVC SDR-35 sewer pipeline

Clearview Place - Approximately 860 LF of 8-inch diameter C-909 PVC water pipeline

Tourmaline Court - Approximately 890 LF of 8-inch diameter C-909 PVC water pipeline

Pedley Road – Abandonment of existing 6-inch diameter CMLW water pipeline service transfer from 6-inch water pipeline to existing 12-inch diameter CMLC water pipeline DAYS IN ROW: 336

Customer Reference Number: CONDITIONAL 44TH ST. PROJECT -

Owner:	Applicant:	Site Contact:
	Angel Avala Jurupa Community Services District 11201 Harrel St, Jurupa Valley, CA 91752 Jurupa Valley CA 91752	

Contractor:
JURUPA COMMUNITY SERVICES DISTRICT
11201 HARREL STREET
JURUPA VALLEY CA 91752
9516857434

INSPECTION REQUIRED: The City of Jurupa Valley Public Works Inspector must be notified 48 hours prior to starting work.
Phone: (951) 332-6464 Ext. 301, Email: pwinspections@jurupavalley.org

Use of City controlled public right-of-way or easement is hereby authorized for the use or work described below subject to the provisions of Riverside County Ordinance No. 499, all the terms, conditions, restrictions, standards, rules, and regulations of the City of Jurupa Valley or any other public agency having interest in the work hereby authorized and as written below or printed as general or special provisions on the reverse hereof and attached hereto are as otherwise incorporated herein by reference. This permit is to be strictly construed and no use or work other than that specifically described below is authorized.

Estimated Start Date: 11/04/2024	Estimated Completion Date: 10/06/2025

ENCROACHMENT AGREEMENT: (Check if Applicable)

☐ Property owner acknowledges this encroachment requires execution of an Encroachment Agreement making the owner responsible for these improvements. City will provide the Agreement for execution at a later date.

Owner Name:_____ Owner Signature: _____ Date:_____

☒ Additional Special Provisions and/or Conditions of Approval are attached and incorporated herein.

THE PERMITTEE'S SIGNATURE BELOW ACKNOWLEDGES PERMITTEE'S ACCEPTANCE OF ALL TERMS AND CONDITIONS STATED ABOVE, THE STANDARD PROVISIONS CONTAINED ON BACKSIDE OF THIS PERMIT, ANY ADDITIONAL SPECIAL PROVISIONS, ALL OTHER CONDITIONS OF APPROVAL AND THE INDEMNIFICATION AND HOLD HARMLESS AGREEMENT RELATED TO THE ISSUANCE OF THIS PERMIT. PERMIT IS NOT VALID UNTIL SIGNED BY BOTH PERMITTEE AND CITY.

PERMITTEE'S ACCEPTANCE:

_____

Permittee Signature **Title**

CITY APPROVAL:

SALINA CANO

for Virpal Singh Toor, P.E., City Engineer

ENCROACHMENT PERMIT SPECIAL PROVISIONS

1	Call or email City Public Works inspector at 951-332-6464 ext. 301, email: pwinspections@jurupavalley.org for Inspection request 48 hrs. before start of work. ...
2	All businesses, schools and property owners affected by the work performed under this permit shall be notified at least 72 hours prior to start of construction. Access to businesses shall be maintained at all times.
3	Work hours for lane closures are 9:00 a.m. to 3:00 p.m. Otherwise work hours are 7:30 a.m. to 4:30 p.m. Monday thru Friday except federal holidays. Contact City Inspector for changes.
4	Contractor shall protect existing street improvements and repair /replace street improvements under City Public Works Inspector's direction.
5	No trench shall be left exposed without final cap paving for more than 30 days.
6	All USA and construction markings shall be removed from concrete, asphalt, and landscaped areas before permit will be finalized (black spray paint is not an acceptable form of removal).
7	Permittee is requested to notify the City of any Sub-Contractor is hired to perform work under this encroachment permit.
8	Surface restoration to be per City of Jurupa Valley's Public Work's Inspector's direction. See attached City Standard, ... for trench backfill & roadway repair.
9	Installation of appurtenances in the City right-of-way must be installed per Green Book Standard Plan ... attached).
10	PAVEMENT TREATMENT BE FULL WIDTH FOR ALL ROADS UNDER MORATORIUM

ENCROACHMENT PERMIT STANDARD PROVISIONS

1. Permits issued by City of Jurupa Valley are issued pursuant to the authority the California Streets and Highways Code and Riverside County Ordinance 499-12.
2. Permittee shall indemnify, defend and hold harmless the City, its officers, officials, employees, agents, consultants and volunteers in accordance with the provisions of Exhibit A, Indemnification, attached hereto and incorporated herein as though set forth in full.
3. Permittee shall pay for and maintain in full force and effect for the duration of the work all insurance as required in Exhibit B, Insurance, attached hereto and incorporated herein as though set forth in full.
4. Should any damage or injury to City of Jurupa Valley works or property occur during initial use and/or as a result of the contractor of Permittee, in the exercise of the rights herein granted, Permittee shall immediately, upon the written demand of City of Jurupa Valley, restore such works or property to the condition of same at the date of the occurrence of said damage or injury at Permittee's sole cost and expense. The question as to whether or not any such damage or injury has been caused to the works shall be determined by the City Engineer's Office and the City of Jurupa Valley and its determination shall be final. In the event any action or repair by City of Jurupa Valley is necessary, Permittee shall pay City of Jurupa Valley the cost of such actions and repairs.
5. City of Jurupa Valley reserves the right unto itself to perform any work, upon any portion or all of the area covered by this permit, or to do any other work necessary at any time. Such work may be performed without incurring any liability of any nature whatsoever to the Permittee. It is further understood and agreed that City of Jurupa Valley reserves unto itself the rights of ingress and access over all or any portion of the subject area.
6. Neither this permit nor any of the rights herein granted shall be assigned without the prior written approval of the City of Jurupa Valley. Permit is void upon expiration date unless otherwise extended by mutual agreement and payment of an extension. A new permit application and fee may be required at the sole discretion of the City of Jurupa Valley.
7. By acceptance of this permit, Permittee acknowledges and assumes all responsibility for compliance with requirements of other regulatory agencies including, but not limited to zoning regulations, applicable ordinances and laws of the City of Jurupa Valley, County of Riverside, State of California, Federal Government or others having regulatory control over the use or work granted herein.
8. All underground work requires an 'Inquiry Identification Number' from Underground Service Alert Regional Notification Center. (Ref: Government Code Section 42165 and 4217). **Call 811-Underground Service Alert-Southern California (USA), 2 working days prior to excavating. Call the Riverside County Transportation Department at 951-955-6894 for traffic signal markout.** This permit is not valid for excavation unless and until the Permittee has been provided an Inquiry Identification Number. All USA markings shall be removed by the Permittee after the work is complete and before the Permit is closed.
9. A copy of this permit and approved plans, if applicable, shall be maintained at the site of work and be shown to any authorized representative of the City, or other regulatory governing agency upon request. Non-compliance may avoid this permit. Permit is non-transferable.
10. No work shall be performed within the City right of way without the full knowledge of City of Jurupa Valley Public Works Inspector, who shall be given not less than 48 hours advance notice of the initiation of the permitted use or work. Failure of Permittee to notify the Inspector and obtain all required inspections may void this permit and necessitate reapplication by Permittee. Ordinance 499 provides for penalties.
11. Permittee further agrees that all operations within City rights of way are subject to the jurisdiction of City of Jurupa Valley and must be performed to the satisfaction of City of Jurupa Valley City Engineer.
12. This permit may be immediately suspended or revoked for reasons in the best interest of the City of Jurupa Valley including

violation of any permit provisions or other applicable laws, rules and regulations or for the creation of a nuisance upon notice given by the City of Jurupa Valley or authorized representative. In the event of such suspension or revocation, Permittee shall immediately cease all operations and restore City of Jurupa Valley right of way as directed by the City Engineer.

13. This permit is subject to the provisions referenced in Riverside County Ordinance 499-12 and all applicable laws, regulations and policies of the City of Jurupa Valley and all attached Special Conditions, if any.
14. No use other than that which is stated on this permit shall be exercised. Public right of way shall not be used for Permittee's or Permittee's Contractor's administrative operations or storage of equipment, materials, supplies, etc.
15. All work shall be performed in accordance with the Standard Specifications for Public Works Construction ("Greenbook") latest edition including all amendments thereto as promulgated by Public Works Standards, Inc.
16. **Work area traffic control shall be in accordance with the WATCH and California Manual of Uniform Traffic Control Devices (CMUTCO) latest edition including all amendments thereto and attached traffic control plans.**
17. **Pavement repair shall be made in accordance with City Standard "T" Cut trench repair detail.**

INDEMNIFICATION AND HOLD HARMLESS AGREEMENT FOR ENCROACHMENT PERMIT

In consideration for the issuance of an Encroachment Permit and to the furthest extent allowed by law, Permittee does hereby agree to indemnify, hold harmless and defend the City of Jurupa Valley ("City"), and its officers, officials, employees, agents and volunteers from any and all loss, liability, fines, penalties, forfeitures, costs and damages (whether in contract, tort or strict liability, including but not limited to personal injury, death at any time and property damage) incurred by City, Permittee or any other person, and from any and all claims, demands and actions in law or equity (including attorney's fees and litigation expenses), arising or alleged to have arisen directly or indirectly out of the issuance of the Encroachment Permit or any work permitted hereunder. Permittee's obligations under the preceding sentence shall apply regardless of whether City or any of its officers, officials, employees, agents or volunteers are passively negligent, but shall not apply to any loss, liability, fines, penalties, forfeitures, costs or damages caused by the active or sole negligence, or the willful misconduct, of City or any of its officers, officials, employees, agents or volunteers.

Throughout the life of the Encroachment Permit, Permittee shall pay for and maintain in full force and effect all insurance as required in Exhibit A, which is incorporated into and part of this Agreement, or as may be authorized or required in writing by City Manager or his/her designee at any time and in his/her sole discretion.

Permittee shall conduct all defense at his/her/its sole cost. The fact that insurance is obtained by Permittee shall not be deemed to release or diminish the liability of Permittee, including, without limitation, liability assumed under this Agreement. The duty to indemnify shall apply to all claims regardless of whether any insurance policies are applicable. The duty to defend hereunder is wholly independent of and separate from the duty to indemnify, and such duty to defend exists regardless of any ultimate liability of Permittee. The policy limits do not act as a limitation upon the amount of defense and/or indemnification to be provided by Permittee. Approval or purchase of any insurance contracts or policies shall in no way relieve from liability nor limit the liability of Permittee, its principals, officers, employees, agents, persons under the supervision of Permittee, vendors, suppliers, invitees, consultants, sub-consultants, subcontractors, or anyone employed directly or indirectly by any of them.

City shall be reimbursed for all costs and attorney's fees incurred by City in enforcing this Agreement.

This Indemnification and Hold Harmless Agreement shall survive the expiration or revocation of the Encroachment Permit.

The permittee acknowledges that he/she (i) has read and fully understands the content of this Indemnification and Hold Harmless Agreement; (ii) is aware that this is a contract between the City and Permittee; (iii) has had the opportunity to consult with his/her attorney, at his/her discretion; (iv) is fully aware of the legal consequences of signing this document; and (v) is the Permittee or his/her/its authorized signatory.

APPENDIX C

Disinfection Plan Template

SHUTDOWN, DISINFECTION, FLUSHING PLAN

Date: __-___-____

PROJECT: _____
DISTRICT PROJECT NO:_____
OWNER: Jurupa Community Service District (District)
GENERAL CONTRACTOR: _____
DISINFECTION SUB CONTRACTOR: _____

1. **District** to sample/test water before Contractor begins work

2. **District** to alert Contractor when and how long the shutdown will be allowed.

3. **District** to confirm the **valves** are in operable condition and can shut off the water. The valves listed below are based on the District atlas maps and as-built drawings.

   Valve A - _____

   Valve B - _____

   Valve C - _____

FOR POINT WORK
Applies For:

- **Cut-In Tee and/or Valve with Blind Flanges and or Test Plates (for Future Connection)**
- **Valve Repair and Replacement**
- **Pipe Repair and Outlet Removal**
- **Disconnection**
- **Jumper, Point and/or Short Piece of Pipe Modification**

Contractor to describe the work performed (provided approximate hours needed):

_____

_____

4. __-__-____ District to shutdown the system by closing above valves.

5. Contractor to use _____ Pump for dewatering.

   Contractor's CRQWCB Discharge Permit Order No. _____

   Contractor's CRQWCB Discharge Permit Expiration Date_____.

6. Contractor to discharge water to_____(if private property to discharge water, Contractor shall provide written approval by owner of property prior to discharge)

7. Contractor to have a _____trash pump to pump out the remaining water in the trench when the pipe is cut.

8. Contractor to swab or spray the interior surface of affected pipe section and fittings thoroughly with a _____% hypochlorite solution.

   If Contractor selects or is required to use test plate for pipeline disinfection, contractor shall spray the interior surface of affected gasket thoroughly with a _____% hypochlorite solution when removing the test plate and replacing pair gasket.

9. Contractor to complete the cut-in work and backfill.

10. District to open valves for flushing.

11. Contractor to discharge water to_____(if private property to discharge water, Contractor shall provide written approval by owner of property prior to discharge)

12. After flushing, District will take one sample and send to lab for Bac-T analysis.

13. System will be back in-service on the same day.

14. If the Bac-T did not pass, more flushing shall be required.

FOR LINEAR WORK

Applies For:

- **Newly Installed Pipes (Pipe length is greater than 20 feet)**
- **Newly Installed Pipe Connection to An Existing Valve and/or Blind Flange W/O Test Plates**

If cut-in is also required along with the linear pipeline, refer to procedure described within FOR POINT WORK

Contractor to describe the work performed:

_____

_____

1. ___-__-_____Contractor to install _____ inch diameter waterline with appurtenances. The newly installed pipe should temporarily terminate approximately 2-feet from the tie-in point.

If the length of the connection piece is more than 20 feet long, the connection piece shall be disinfected following the procedure as described below unless approved in writing by the District otherwise.

2. **District** to sample/test water before Contractor begins work

3. __-__-____, Contractor to use _____ for flushing newly installed pipes. The flow rate shall be greater than _____ gpm (to get 2.5 feet per second velocity). The point of receiving flushing water from existing water system (FH, BO, AV, etc):_____; Location:_____

4. Contractor to discharge flushing water to _____(if private property to discharge water, Contractor shall provide written approval by owner of property prior to discharge)

   Contractor's CRQWCB Discharge Permit Order No. _____
   Contractor's CRQWCB Discharge Permit Expiration Date_____.

5. Contractor to inject _____ (Cl_2 gas-water mixture or liquid) for chlorination. The injection point is from Appurtenance (FH, BO, AV, etc): _____ Location:_____

6. Contractor to inject with dosage of _____(minimum 50 ppm).

7. From __-__-____ to __-__-____, Contractor to retain chlorinated water in pipeline for at least 24 consecutive hours.

8. __-__-____, Chlorine residual at pipe extremities and other representative points shall be at least _____(Minimum 25 ppm).

9. __-__-____, Contractor to thoroughly flush pipeline. The flow rate shall be greater than _____ gpm (to get 2.5 feet per second velocity).

10. Contractor to use reducing agent of _____ for dechlorination. The flushed water shall have a residual content not to exceed 0.10 mg/l prior to discharge.

11. Contractor to discharge neutralized water to _____(if private property to discharge water, Contractor shall provide written approval by owner of property prior to discharge).

12. __-__-____, District to take first set of samples (location/number determined by District).

13. __-__-____, District to take second set of samples after 24 hours that pipeline sits with water. (Location/number determined by District).

14. If the samples do not meet minimum requirements, Contractor to repeat the entire disinfection and flushing procedure until the samples pass.

15. __-__-____, Contractor to swab or spray the interior surface of affected for connection piece and fittings thoroughly with a _____% hypochlorite.

16. __-__-____, Contractor to make connection and flush.

17. Contractor to discharge flushing water to _____(if private property to discharge water, Contractor shall provide written approval by owner of property prior to discharge).

CONTACTOR'S PERSONAL:

_____, SUPERINTENDENT CELL (___)-___-_____

_____, PROJECT MANAGER CELL (___)-___-_____

_____, _____ CELL (___)-___-_____

_____
Reviewed by Engineer Date

_____
Approved by District Date

APPENDIX D

Sample of Project Sign

LIST NAMES OF JCSD'S BOARD OF DIRECTORS ON THE UPPER LEFT CORNER

Jurupa
COMMUNITY SERVICES DISTRICT

Reinvesting in Our Community and Improving Critical Infrastructure

Name of Project

Total Project Cost: **$ Cost of Project**

Project Dates: **Date Ranges**

Locations

Be prepared for traffic delays. Please use caution when driving!

If you have any questions, please call Jurupa Community Services District

(951) 685-7434

www.jcsd.us @JCSDTweets www.youtube.com/jcsdvideos www.facebook.com/JCSDistrict

APPENDIX E

Sample Pothole Report Format

Sample Pothole Report Format

UTILITY POTHOLE REPORT

Client: Jurupa Community Services District
Contractor: _____

Project:_____
_____
_____

[JCSD P.N. _____]

Date of Pothole: _____

Contractor's Signature: _____

PROJECT NAME:

PROJECT NO: **DPN** **DATE OF POTHOLE:**

CLIENT: JURUPA COMMUNITY SERVICES DISTRICT

CONTRACTOR:

STREET	STATION	UTILITY	TYPE	SIZE	DEPTH TO TOP	DEPTH TO BOTTOM	NOTES

Contractor Signature:

APPENDIX F

List of District Approved Pipe Manufacturers, Pipe Fabricators, and Appurtenance Manufacturers

LIST OF APPROVED MANUFACTURED MATERIALS

A. GENERAL

Jurupa Community Services District maintains a list of Approved Manufactured Materials for both water and sewer system improvements. Only those indicated on the most current list have been approved for use within the District. It is the sole responsibility of the user to assure that the product proposed for use is currently approved. The District may require installation of a different product in special circumstances.

Manufacturers may request approval by (1) submitting formal written request for approval, along with the necessary deposit for District and consultant review time, (2) providing detailed drawings and technical information on their product, and (3) providing a non-returnable sample of the product for District use. Documentation of use by other local water purveyors (with phone numbers and contact names) will assist the District in evaluating such requests. The District will evaluate the product and make a determination within 90 days. If determined as being suitable for District use, the product will be placed on this approved Manufactured Materials list. Inventory of spare parts is a consideration. All products shall always comply with District Standard Specifications.

B. LIST OF APPROVED MANUFACTURED MATERIALS

1. Steel Water Pipe (AWWA C200 - CML/CML WSP, 12 ga. Min.)

    a. Ameron, Pipe Division, Southern California
    P.O. Box 2024, Monterey Park, CA 91754

    b. Northwest Pipe & Casing Company
    12351 Rancho Road, Adelanto, CA 92301

    c. West Coast Pipe Linings Inc.
    8621 Beech Avenue, Fontana, CA 92335

    The following manufacturer is only approved for new residential development's pipelines of diameters less than 12" and requires District shop inspection of the pipe prior to job site delivery.

    d. Southland Pipe
    13989 Santa Ana Avenue, Fontana, CA 92335

    The following manufacturer is only approved for 12" or less.

    e. Imperial Pipe

2. Approved Pipe Fabricators

   a. Ameron, Pipe Division, Southern California
      4700 Ramona Blvd., Monterey Park, CA 91754

   b. Northwest Pipe & Casing Company
      12351 Rancho Road, Adelanto, CA 92301

   c. West Coat Pipe Linings, Inc.
      8621 Beech Ave., Fontana, CA 92335

   d. West Coast Welding
      P.O. Box 4799, Rancho Cucamonga, CA 91729-4799

   The following manufacturer is only approved for subdivision pipelines of diameters less than 12".

   e. Southland Pipe
      13989 Santa Ana Avenue, Fontana, CA 92335

3. PVC Water Pipe (AWWA C900)

   a. Pacific Western Extruded Plastics Company (PVC Pipe)
      P.O. Box 10049, Eugene, OR 97440

   b. J-M Manufacturing (Formosa Plastics)
      1051 Sperry Road, Stockton, CA 95026

   c. Vinyltech Corporation
      201 South 61st Ave., Phoenix, AZ 85043

   d. Diamond Plastics

4. Ductile Iron Pipe

   a. United States Pipe & Foundry Co.
      P. O. Box 939, Brea, CA 92622

   b. Pacific States Cast Iron Pipe Co.
      1375 Magnolia Ave., Corona, CA 91765

5. PVC Sewer Force Main Pipe (AWWA C900)

   a. Pacific Western Extruded Plastics Company (PVC Pipe)
      P.O. Box 10049, Eugene, OR 97440

   b. J-M Manufacturing (Formosa Plastics)
      1051 Sperry Road, Stockton, CA 95026

   c. Vinyltech Corporation

201 South 61st Ave., Phoenix, AZ 85043

6. Clay Sewer Pipe
   a. Gladding McBean, Inc.
      4301 East Firestone Blvd., South Gate, CA 90280
   b. Mission Clay Products (Compression Joint Pipe Only)
      28835 Temescal Canyon Rd., Corona, CA 91720
7. Gate Valves (Standard No. B-1)
   a. AVK American
   b. Kennedy
   c. M&H
   d. Mueller
   e. U.S. Pipe
8. Butterfly Valves (Standard No. B-3)
   a. Pratt
   b. Dezurik
   c. Mueller
   d. K-Flo 500 Series (3" – 20")
   e. K-Flo 47 Series (24" – 72")
9. Water Service Materials (Standard Nos. D-1 thru D-5)
   a. Double strap service saddle (brass only)
      1) R.H. Baker
      2) James Jones
      3) Smith-Blair
   b. Ball Corporate Stops
      1) Mueller (NP-25028) Std. D-1, D-2 & D-3
(NB-20013) Std. D-1A & D-1B
      2) James Jones
      3) Ford
   c. Service Stops
      1) James Jones
      2) Ford
      3) Mueller

d. Angle Meter Stops
    1) Mueller (NP-14258) Std. D-1 & D-2
       (NH-14266) Std. D-1A & D-1B
       (NP-24276) Std. D-3
    2) James Jones
    3) Ford
e. Bronze Spring Check Valve
    1) Milwaukee (UP548T)
f. Brass Ball Valve
    1) Mueller
g. Meter Boxes
    1) Brooks
    2) Quikset
    3) J&R
h. Precast Concrete Vaults
    1) Associated Concrete Products (Quikset)
    2) Utility Vault Co.
    3) Brooks
    4) Eisel Products
    5) Old Castle
i. Meters (all with radio reads)
    1) ≤ 2" furnished by District
    2) ≥ 3" furnished by Developer as approved by District

10. Air Valves (Standard Nos. E-1 & E-2)
    a. APCO
    b. Crispin
11. Blow-offs (Standard Nos. F-1 thru F-2)
    a. James Jones
12. Standard and Super Fire Hydrants (Standard No. G-1 thru G-2)
    a. James Jones
    b. Long Beach Iron Works

13. Reduced Pressure Backflow Device (Standard No. H-2)

    a. Any device approved by the California Department of Public Health (latest list) and USC approved.

14. Double Check Valve Assembly (Standard Nos. H-1 & H-3)

    a. Any device approved by the California Department of Health Services Office of Drinking Water (latest list) and USC approved.

15. Pressure Reducing/regulating Valves, Altitude Valves

    a. CLA-VAL Co.

    b. Ames

16. Water Sampling Station (Standard No. K-1)

    a. Koraleen Enterprises (only as approved in writing by District)

17. Approved Video Companies

    a. Houston & Harris

    b. National Plant Services

    c. Morrison Testing

18. Appurtenance Paint (Devoe or Tnemec)

    a. Color as selected or approved by District

    b. Surface preparation per manufacturer's recommendations

    <u>Devoe</u>

    c1. Zinc primer – ICI Paints – Devoe Cathacoat ® 302H (3.0 mils DFT)

    d1. Primer – ICI Paints – Devoe Bar-Rust ® 231 (6.0 mils DFT)

    e1. Finish Coat: ICI Paints – Devoe Devthane ® 378H (3.0 mils DFT)

    f1. Total Min. DFT: 12 mils

    <u>Tnemec</u>

    c2. Primer: Tnemec Series L69 (6 mils DFT)

    d2. Second and Finish (Third) Coats: Tnemec 1081 Polyurthane (2.5 mils DFT each coat)

    e2. Total Min. DFT: 11.0 mils

APPENDIX G

JCSD Guide For Sewage Bypass And Pumping Plan (SBPP) And Overflow Emergency Response Plan (OERP)

Jurupa Community Services District

SEWAGE BYPASS AND PUMPING PLAN (SBPP) WITH OVERFLOW EMERGENCY RESPONSE PLAN (OERP)

SBPP & OERP:

JCSD's guide for sewage bypass requirements ***Supersede*** the following:

2018 Greenbook - Spill Response Planning from the Standard Specifications for Public Works Construction, Part 1, Section 3
3-12.5 Sanitary Sewers
3-12.5.1 General
3-12.5.2 Sewage Bypass and Pumping Plan
3-12.5.3 Spill Prevention and Emergency Response Plan
3-12.6.4 Dewatering.
Part 5, Section 500
500-4.3 Sewer Bypassing and Dewatering
500-5.3 Sewer Bypassing and Pumping
2012 BROWN BOOK 7th edition as well as any additions and/or amendments to the Latest Edition of the Standard Specifications for Public Works Construction".
7-8.5 Sanitary Sewers
7-8.2 Sewage Bypass and Pumping Plan
7-8.5.3 Spill Prevention and Emergency Response Plan
7-8.6 Water Pollution Control
7-8.6.3 Storm Water Pollution Prevention Plan (SWPPP).

Section 1] JCSD - Sewer Bypass and Pumping Plan (SBPP)

Requirements:
The Contractor shall submit the details of the proposed control operations to be used for the bypassing of sewage. The plans and procedures will include the following sewer system details;

1. Sewer By-Pass-Site Layout drawing and Planned/scheduled work activities.
2. Sewer By-Pass-Equipment types, capabilities and testing requirements
3. Confined Space Entry Program (CSEP) (2018 Greenbook 5-7.5.1 pg. 28) Plan and Procedures
4. Traffic Control Plan
5. Storm Drain-Site Layout Drawing & Protection Requirements
6. "Sanitary Sewer" Overflow Emergency Response Plan (OERP) in **Section 2**

The Contractor shall prepare and submit in advance (**15** working days) a complete detailed Sewer By-Pass Plan (SBPP) for approval by the JCSD Sewer Systems Supervisor in concurrence with the JCSD Deputy Director of Operations ***before the bypass is Installed and Tested***. The plan must also include a detailed Overflow Emergency Response Plan (OERP). Submit plans for approval in accordance with these requirements within this document.

1. Sewer By-Pass-Site Layout drawing and Proposed schedule of activities

a. The Contractor shall provide a detailed Sewer By-Pass-Site Layout Drawing. Field verify sewer flow conditions, site access, M/H and/or Vault configuration(s) and watertight, upstream location of the proposed Sewer By-Pass equipment and appurtenances. The orientation of the equipment, direction of all discharge line(s) (redundancy), all the way to the point of discharge or discharge point(s). Identifying methods to protect the Sewer By-Pass System(s) equipment and piping from traffic load,

vehicles/equipment, pedestrians, vandalism and weather-related damage. Include description of planned/scheduled work activities.

2. Sewer By-Pass-equipment types, capabilities and testing requirements

a. The Contractor shall submit Dewatering System Curves, Hydraulic Calculations, Pump Data Sheets, Pump Performance Curves, Pump Dimensional Drawings, Engine Data Sheets, Critically Silenced Data Sheets, Automatic Pump Controller Data Sheets and Bill of Materials. The Contractor shall size the primary & redundant backup Sewer By-Pass System(s) to handle the peak flow of the section of sewer line(s) to be by-passed and pumped.

b. The Contractor shall include a 100% redundant backup Sewer By-Pass system(s) capable of handling peak flows. The backup pump(s) will be equipped with Automatic Pump Controller with mechanical floats that will start and stop the backup pump(s) at a predetermined sewage level.

c. The Contractor shall use the backup system(s) to mitigate any additional wet weather flows, perform the necessary maintenance and repairs on the bypass system(s), and exercise and ensure the operability of the backup system(s). The Contractor shall operate the backup bypass system(s) for a minimum of 25% of the time on a daily basis. The backup bypass system shall be fully installed, operational, and ready for immediate use.

d. Each sewage pump(s), including the primary pump(s) (sound attenuated enclosure required) and backup pump(s) (may require sound attenuated enclosure on case by case basis, example residential neighborhood, school zone etc), shall be a complete unit with its own suction and discharge piping. Including a Flush-Tee with a Ball Valve and Flush Adapter (for filling discharge lines and pressure testing bypass system) and fitted with inline check and gate valves. The passage of solid handling capabilities at minimum 3" diameter, continuous self-prime run dry, minimum suction lift of 28', 12 hour minimum fuel tank.

e. The Contractor shall provide a Pipe Data Sheet; it shall include grade, diameter and type, the pipe or lay flat hose must be specifically designed for sewage applications. (Note: District prefers hard pipe wherever possible). The discharge side of the primary and back-up pump(s) must run independent/individual lines for 100% back-up piping capabilities. Spare piping/Lay flat hose of correct size and coupling must be available on site. All connections shall be quick-connect fittings with gaskets. The locking devices must be secure (wire tied; zip tied) so a connection cannot disconnect.

f. The Contractor shall provide Suction Hose Data Sheet (same as above). All connections shall be quick-connect fittings with gaskets. When using lay flat hose, the contractor shall utilize an appropriately weighted pipe by-pass hose end-adaptor for discharging into downstream M/H, Lay flat hose will not be allowed to extend into manholes.

g. The Contractor shall provide mechanical plug(s) and/or pneumatic plugs with district approval. The plug(s) must be securely affixed by a chain and an appropriate fastener, such as a clevis fastener (shackle) that is moused. The chain must be in good repair, strength, and of the appropriate length and diameter. The tie off must be physically attached to a fix solid item that will not fail or move under normal circumstance.

h. Road Ramps (built-in piping) maybe acceptable for low-traffic temporary crossings. Provide Road Ramp Data Sheets when proposing vehicular access over pipeline(s). By-Pass piping, when crossing areas subject to traffic loads, shall be constructed in trenches with adequate cover and otherwise protected from damage due to traffic.

i. High Pressure Vent (AirVac) when required, Provide High Pressure Vent Data Sheets with Saddle Data Sheets. All AirVac drain lines must be able to drain back into a nearby M/H or connected to a secure 55 gallon minimum holding tank, barrel etc.

j. The Contractor shall provide a temporary means to maintain and appropriately handle the sewage flow in the sewer system as required to complete the necessary construction. The Contractor shall continuously monitor the sewage flow levels downstream, upstream and the entire length of the Sewer By-Pass System(s) to detect any possible failure that may cause a sewage backup and spill.

k. The Contractor shall provide a containment zone around each pump in the event of a leak or rupture. The containment must be capable of holding sewage and/or other leaking liquids from the pump(s) by way of a two (2) layer sandbag berm with a visqueen barrier or equal. The berm/equal must fully encompass the zone.

l. The Contractor shall submit as part of the Sewer By-Pass Plan their Sewer By-Pass equipment maintenance procedures and Inspection frequency. The Contractor shall routinely inspect and maintain the complete Sewer By-Pass(s), including the backup system(s). The Contractor shall maintain a log (**include a copy of the maintenance log in the plan**) of the inspections and maintenance in a manner acceptable to the JCSD Inspector.

m. For Sewer By-Pass pumping on minimal flowing lines, based on a case-by-case basis, it may be acceptable to the JCSD Sewer Systems Supervisor in concurrence with the JCSD Deputy Director of Operations to utilize varying capacity Pumper Truck(s) and/or Vactor Truck(s) as the primary(s) and backup equipment. The case-by-case bases is founded on minimal flow estimates, Traffic Control restrictions and limitations, timed distance to and from the discharge location, overall logistics, weather concerns and other factors.

n. The Contractor shall provide protection around both the U/S and D/S M/H openings for pedestrian and employee safety (safety yellow M/H guard rails or equal).

o. Before testing the full operation of the Sewer By-Pass, the Contractor shall demonstrate to the satisfaction of the Sewer Systems Supervisor, Sewer Foreman and JCSD Inspector that the primary pumps(s) and backup pump(s), all piping, valving, and appurtenances are fully functional, adequate, and shall certify the same in writing.

p. Testing of the Sewer By-Pass, the Contractor shall at the beginning of each Sewer By-Pass start-up, run both the primary pump(s) and backup pump(s) with "clean potable water only". Filling the Sewer By-Pass Systems – "Fill system with clean potable water only". The gallonage of clean potable water required is based on the total length x diameter of the discharge piping. Cap/plug the downstream end of the discharge piping and fill system(s), begin to pressurize system(s) per the manufactures specifications, inspect for leaks. If leaks are observed, make necessary adjustments to system(s), re-fill system(s) and re-test until sound. (Don't forget to remove the cap/plug at the downstream end of the system). This step is intended to ensure that the pumps are operational and to ensure leak-free piping, hoses and appurtenances.

   Draining of the Sewer By-Pass - Upon shutting down the Sewer By-Pass at the end of each shift flush with potable water the entire Sewer By-Pass system using the pipe diameter guide above plus + 1,000 gallons. Flush with clean potable water only prior to disconnecting any piping, hose and appurtenances; ensure Sewer By-Pass system is empty before disconnecting system. (No Sewage can escape from the Sewer By-Pass during system operation and/or during system removal)

q. The Contractor shall observe and comply with JCSD'S policy of "ZERO SPILLS" and shall be in full charge and be responsible for the Jobsite, the construction work and subject to the directions of the JCSD Sewer Systems Supervisor.

r. The Contractor shall provide one dedicated fuel tank for every pump/generator, if fuel/generator driven pumps are used. The Contractor shall provide a fuel level indictor outside each fuel tank and ensure the fuel type is clearly labeled. Example, "Diesel Fuel Only". The Contractor shall take the necessary measures to ensure the fuel supply is protected against contamination. This includes, but is not limited to, fuel line water traps, fuel line filters, and protecting fuel stores from precipitation. The Contractor shall continuously (while in use) monitor the fuel level in the tanks and ensure that the fuel level does not drop below a level equivalent to two (2) hours of continuous Sewer By-Pass system operation.

s. The Contractor shall provide an emergency standby power generator, sized appropriately for the task and outfitted with all necessary appurtenances to adequately operate the pump if electric power driven pumps are used.

t. Night work- Adequate lighting, namely light tower(s) are required at the U/S M/H(s) to clearly illuminate the pumping systems. On a case-by-case basis, adequate lighting may be required along the length of the discharge system and at D/S M/H(s). per CA-MUTCD guidelines.

u. All costs associated with Sewer By-Pass requirements shall be included in the Bid Item.

3. Confined Space Entry Program (CSEP)

a. The Contractor shall submit a Confined Space Entry Plan (CSEP) and Procedure (**including a copy of their confined space entry permit form**) along with Confined Space Entry proof of certificates/training records for all entrants, attendants and supervisors. Ensure certified/competent employees are on-site during all Confined Space Entries.

b. Include a list of Confined Space Entry Equipment, such as but not limited to: Davit Arms, Tripods, Winches, Self-Retracting Lifelines (SRL's), Harnesses, Communication Equipment, Atmospheric Monitors, Blowers, SCBA and/or Airline Breathing Apparatus, Rescue equipment, including all required PPE, etc. in a manner acceptable to the JCSD Inspector.

4. Traffic Control Plan

a. The Contractor will provide an approved Traffic Control Plan for the scheduled work that includes the area/location of all Sewer By-Pass activities. CA-MUTCD guidelines will be followed.

5. Storm Drain-Site Layout Drawing & Protection Requirements

a. The Contractor shall identify on their Storm Drain-Site Layout Drawing all storm drain system inlets (waterways, channels, catch basins, culverts, basins etc.) within the vicinity and down gradient of the proposed Sewer By-Pass Plans. All storm drain inlets must be adequately protected in place at all times while Sewer By-Pass pressure testing, and subsequent live Sewer By-Pass activities are underway.

Section 2] Overflow Emergency Response Plan (OERP)
Per JCSD 2019 OERP – Element 6: Sanitary Sewer Overflow Emergency Response Plan

Contractors working on District Sewer Facilities - Project Specific Requirements:

Purpose
The purpose of the Overflow Emergency Response Plan (OERP) is to support an orderly and effective response to Sanitary Sewer Overflows (SSOs). The OERP provides guidelines for Contractors/District personnel to follow in responding to, cleaning up, and reporting SSOs that may occur within the District's service area.

Policy
The District must report all wastewater overflows found and to take the appropriate action to secure the wastewater overflow area, properly report to the appropriate regulatory agencies, relieve the cause of the overflow, and ensure that the affected area is cleaned as soon as possible to minimize health hazards to the public and protect the environment. The District's goal is to respond to sewer system overflows as soon as possible following notification. The District will follow reporting procedures in regard to sewer spills as set forth by the Santa Ana Regional Water Quality Control Board (SARWQCB) and the California State Water Resources Control Board (SWRCB).

Goals
The goals with respect to responding to SSOs are:

- Work safely;
- Respond quickly to minimize the volume of the SSO;
- Eliminate the cause of the SSO;
- Prevent sewage system overflows or leaks from entering the storm drain system or receiving waters to the maximum extent practicable;
- Contain the spilled wastewater to the extent feasible;
- Minimize public contact with the spilled wastewater;
- Mitigate the impact of the SSO;
- Meet the regulatory reporting requirements;
- Evaluate the causes of failure related to certain SSOs; and
- Revise response procedures resulting from the debrief and failure analysis of certain SSOs.

Contractor Observation
The following procedures are to be followed in the event that a contractor causes or witnesses a Sanitary Sewer Overflow. If the contractor causes or witnesses an SSO they should:

1. Immediately notify the District
2. Protect storm drains
3. Protect the public
4. Provide Information to the District Collections Crew such as start time, appearance point, suspected cause, weather conditions, etc.
5. Direct ALL media and public relations requests to the Community Affairs Officer.
6. Initiate Spill Containment Measures immediately.

Initiate Spill Containment Measures

The Contractor should attempt to contain as much of the spilled sewage as possible using the following steps:

- Determine the immediate destination of the overflowing sewage.
- Plug storm drains using plugs, sandbags, and/or plastic (Visqueen Barrier) to contain the spill, whenever appropriate. If spilled sewage has made contact with the storm drainage system, attempt to contain the spilled sewage by plugging downstream storm drainage facilities.
- Contain/direct the spilled sewage using dike/dam or sandbags.
- Pumping or by Vactor/ Pumper Truck around the blockage/pipe failure/pump station.

Contractors Working On District Sewer Facilities

a. All Contractors working on District sewer facilities and conveyance systems will be required to develop a project-specific OERP. All Contractor personnel will be required to receive training in the Contractor's OERP and to follow that OERP in the event of a Sanitary Sewer Overflow (SSO). The OERP must be approved by the Sewer System Supervisor and/or designee prior to training of the Contractor's staff or subcontractors. The Contractor OERP training requirements will include all records for scheduled training classes and will include date, time, length of training, place, OERP content, name of trainer(s), and names of attendees.

b. The Contractor shall provide for an emergency response unit that will be immediately dispatched to the job site in case of a sewage spill(s). The emergency response unit shall consist of emergency response equipment and personnel trained in its use.

c. The Contractor shall provide OERP procedures to adequately address all perceived emergency sewer overflows that could occur during sewer bypass activities.

d. If any emergency should arise during Sewer By-Pass activities, the JCSD Sewer Supervisor shall be contacted Immediately at the office (951) 685-7434 ext. 174 and/or cell phone (951) 675-8692. Also, immediately contact all the listed JCSD Emergency Contacts on page #7.

e. The Contractor shall observe and comply with all Federal, State, and local laws, ordinances, codes, orders, and regulations which in any manner affect the conduct of the work, specifically as it relates to sewage spills. The Contractor shall be fully responsible for preventing sewage spillage, containing any sewage spillage, recovery and legal disposal of any spilled sewage, any and all fines, penalties, claims and liability arising from negligently causing a sewage spillage and any violation of any law, ordinance, code, order, or regulation as a result of the spillage.

f. The Contractor shall include in their Spill Response Procedures the means and methods of mitigating a sewer spill, monitoring and documenting the event, including notification processes. The Contractor shall continuously monitor the operation of the Sewer By-Pass and all impacted facilities (while in use). When the Sewer By-Pass is not in use, no part of the By-Pass may cause a disruption to the sewer system.

g. In case of a sewage spill, the Contractor shall, without instructions from JCSD, act immediately to control the spill and take all appropriate steps to contain an SSO in accordance with the OERP. The Contractor shall immediately notify JCSD personnel.

h. If any sewage flow enters or/is perceived to have entered into a storm drain system (waterways, channels, catch basins, culverts etc) those affected storm drains must be cleaned from the point of entry to the point of containment if achieved. Cleaning will be required for all areas affected by the sewage spill, all sewage and /or debris must be legally disposed of at the Contractors expense.

i. The Contractor shall be fully responsible for preventing sewage spillage, containing any sewage spillage, recovery and legal disposal of any spilled sewage, any and all fines, penalties, claims and liability arising from negligently causing a sewage spillage and any violation of any law, ordinance, code, order, or regulation as a result of the spillage.

j. The Contractors representatives shall be accessible and available at all times to respond immediately to any construction-related emergencies. The Contractor shall furnish all necessary materials, supplies, tools, equipment, labor, and other services for spill containment and cleanup.

k. Notification to Riverside County Flood Control, City of Jurupa Valley and/or City of Eastvale if any sewage flows enters a storm drain. Include all applicable contact information in the OERP.

l. Develop and include an Emergency Notification Procedure. The procedure will include an emergency response roster with the Contractors emergency contact numbers and arrangements for backup personnel and equipment, and an emergency notification roster of the designated JCSD representatives.

m. Direct ALL media and public relations requests to the JCSD Community Affairs Officer, Alison Loukeh office (951) 685-7434 Ext 426 aloukeh@jcsd.us.

Include the following JCSD emergency contacts in the OERP.
JCSD emergency contacts to assist in first response on ALL Emergency Situation:

a)	Jim Payfer	(951) 675-8692 (cell) Sewer Systems Supervisor, jpayfer@jcsd.us
b)	Russell Hench	(951) 790-7081 (cell) Sewer Service & Maint. Foreman, rhench@jcsd.us
c)	Josh Guy	(951) 830-0869 (cell)Sewer System Pump Maint. Worker (Interim) jguy@jcsd.us
d)	Juan Flores	(951) 790-7524 (cell) Sewer Service and Maint. Worker II, jflores@jcsd.us
e)	Alex Ramirez	(951) 790-7687 (cell) Sewer Service and Maint. Worker II, aramirez@jcsd.us
f)	Ben Armel	(909) 730-6879 (cell) Deputy Director of Operations, barmel@jcsd.us
g)	Tonya Waters	(951) 807-5584 (cell) Senior Construction Inspector, twaters@jcsd.us
h)	Jose Garcia	(909) 714-5922 (cell) Construction Inspector, jgarcia@jcsd.us
i)	Alison Loukeh	(951) 685-7434 (Ex.426) JCSD Community Affairs Officer, aloukeh@jcsd.us
j)	WEBB Inspector	TBA

- Ensure a digital camera and extra batteries and/or charging device is on-site in the event of any spill. Provide digital photographs of all areas impacted and documentation on all corrective actions taken.
- The Contractor shall provide a quantity of pre-made gravel and/or Sandbags to be on-site (quantity to be determined on scope/logistics of project). The Contractor shall provide Visqueen (polyethylene sheeting) number of rolls (quantity to be determined) and have on site at all times. (4 mils minimum, 20'x100' rolls).
- Will Vactor truck(s) be on-site during operation? If not, what is your maximum response time? Name of vendor, capacity of equipment and emergency contact information.
- Will Pumper truck(s) be on-site during operation? If not, what is your maximum response time? Name of vendor, capacity of equipment and emergency contact information.
- Will a High Velocity Jet Rodder or Mechanical Rodding Machine be on-site during operation? If not, what is your maximum response time? Name of vendor, reach (available cable length) of equipment and emergency contact information.
- Will extra 2", 4" & 6" trash pumps be on-site during operation? And, with sufficient lengths of pipes/hoses for emergency response? Provide information on the above mentioned equipment and appurtenances.

Listed below is helpful information and links that make clear the requirements within this document. Copies of the Orders listed below are available upon request.

To provide a consistent, statewide regulatory approach to address SSOs, the State Water Resources Control Board (State Water Board) adopted Statewide General Waste Discharge Requirements (WDRs) for Sanitary Sewer Systems, Water Quality Order No. 2006-0003 (Sanitary Sewer Systems WDR) on May 2, 2006. The Sanitary Sewer Systems WDR requires public agencies that own or operate sanitary sewer systems to develop and implement sewer system management plans and report all SSOs to the State Water Board's online SSO database. The Sanitary Sewer Systems WDR and its supporting documents can be viewed through the links below:

STATE WATER RESOURCES CONTROL BOARD - ORDER NO. 2006-0003-DWQ
STATEWIDE GENERAL WASTE DISCHARGE REQUIREMENTS FOR SANITARY SEWER SYSTEMS
http://www.waterboards.ca.gov/board_decisions/adopted_orders/water_quality/2006/wqo/wqo2006_0003.pdf

STATE OF CALIFORNIA WATER RESOURCES CONTROL BOARD ORDER NO. WQ 2013-0058-EXEC
AMENDING MONITORING AND REPORTING PROGRAM FOR STATEWIDE GENERAL WASTE DISCHARGE REQUIREMENTS FOR SANITARY SEWER SYSTEMS
ATTACHMENT A - STATE WATER RESOURCES CONTROL BOARD ORDER NO. WQ 2013-0058-EXEC
AMENDING MONITORING AND REPORTING PROGRAM FOR STATEWIDE GENERAL WASTE DISCHARGE REQUIREMENTS FOR SANITARY SEWER SYSTEMS
http://www.waterboards.ca.gov/board_decisions/adopted_orders/water_quality/2013/wqo2013_0058exec.pdf

http://www.waterboards.ca.gov/water_issues/programs/sso/index.shtml

Natural Waterways

The Department of Fish and Wildlife will be notified by CalOES as appropriate in the event of:

- Fish kill
- SSO greater than or equal to 1,000 gallons

Fish and Wildlife will provide the professional guidance needed to effectively clean up spills that occur in these sensitive environments. Clean up should proceed quickly in order to minimize negative impact. Sewage causes depletion of dissolved oxygen, which will kill aquatic life. Any water that is used in the cleanup should be de-chlorinated prior to use, and when possible, the clean-up water will be removed and disposed of within the sanitary sewer system.

Jurupa Community Services District
Overflow Emergency Response Plan

Contractor Orientation

The following procedures are to be followed in the event that you cause or witness a Sanitary Sewer Overflow.

Contractor causes or witnesses a Sanitary Sewer Overflow

Immediately notify JCSD

Jim Payfer, Sewer Systems Supervisor: (951) 675-8692

Russell Hench, Sewer Service & Maintenance Foreman: (951) 790-7081

Protect the storm drains
using mats, sandbags, plugs, dikes, berms, etc.

Protect the Public
If the spill is entering an area where public contact may occur, and if it is safe to do so, monitor the location until the JCSD Collections Crew arrives.

Provide Information
Provide JCSD Collections Crew with information about the overflow such as start time, what has been done to date, appearance point, suspected cause, weather conditions, etc.

Direct ALL media and public relations requests to:

JCSD Community Affairs Officer
(951) 685-7434

Element 6:
OVERFLOW EMERGENCY RESPONSE PLAN

The section of the SSMP provides an overview and summary of the District's overflow emergency response plan, documents and procedures for sewer overflows. Complete documentation of overflow emergency response plan and procedures are attached in Appendix B. The OERP was prepared in 2014 by David Patzer, DKF Solutions Group and updated in July 2019 by District Staff. This section fulfills the Overflow Emergency Response Plan requirement of the SWRCB (Element 6) SSMP requirements.

6.1 Regulatory Requirements for Overflow Emergency Response Plan Element

The summarized requirements for the Overflow Emergency Response Plan element of the SSMP are as follows:

WDR Requirement:

The collection system agency shall develop and implement an overflow emergency response plan (OERP) that identifies measures to protect public health and the environment. At a minimum, this plan must include the following:

(a) Proper notification procedures so that the primary responders and regulatory agencies are informed of all SSOs in a timely manner;

(b) A program to ensure appropriate response to all overflows (SSO's);

(c) Procedures to ensure prompt notification to appropriate regulatory agencies and other potentially affected entities (e.g. health agencies, regional water boards, water suppliers, etc…) of all SSOs that potentially affect public health or reach the waters of the State in accordance with the MRP. All SSOs shall be reported in accordance with this MRP,

he California Water Code, other State Law, and other applicable Regional Water Board WDR or NPDES permit requirements. The SSMP should identify the officials who will receive immediate notification; (Note; the Monitoring and Reporting Program (MRP) regulations were revised on September 9, 2013. Attached below is a link to the CWIQS website: http://www.waterboards.ca.gov/water_issues/programs/ciwqs/

(d) Procedures to ensure that appropriate staff and contractor personnel are aware of and follow the Overflow Emergency Response Plan and are appropriately trained;

(e) Procedures to address emergency operations, such as traffic and crowd control and other necessary response activities; and

(f) A program to ensure that all reasonable steps are taken to contain untreated wastewater and prevent discharge of untreated wastewater to waters of the United States and minimize or correct any adverse impact on the environment resulting from the SSOs, including such accelerated or additional monitoring as may be necessary to determine the nature and impact of the discharge.

6.2 Element 6 Attachments

Supporting information for Element 6 is included in Appendix C. This appendix includes the following documents:

Attachment E6-A: District Sanitary Sewer Overflow Emergency Response Plan
Attachment E6-B: Sewer Department Standard Operating Procedures for Sewer Lift Station Failure
Attachment E6-C: Sanitary Sewer Overflow Standard Operating Procedure for Sampling

6.3 Overview of Sanitary Sewer Overflow Response Documents

The District has three separate documents that define procedures or guidelines for responding to sewer overflows or other sewer-related emergencies (e.g., blockages or Sewer Lift Station failures).

The Sanitary Sewer - Overflow Emergency Response Plan (OERP) has been adopted as a general District policy and provides the overarching overflow emergency response procedures from the receipt of a SSO complaint, through response and cleanup, to reporting of the SSO to the appropriate government agencies. This document is relevant to anyone involved in the OERP process, including the person initially receiving information about SSOs, the response field crew and supervisor, the person responsible for submitting SSO reports, and other emergency responders who could potentially be involved in the process (water department).

The Standard Operating Procedures for Sewer Lift Station Failure provide brief instructions on who to contact and how to respond in the case of a failure at the District's lift stations. This document is most relevant to maintenance staff responsible for responding to a Sewer Lift Station failure.

The Overflow Emergency Response Plan and Standard Operating Procedures for Sewer Lift Station Failure are summarized in the following subsections. These two documents are included in Attachment E-6A and E6-B, respectively. These documents provide the procedures and guidelines necessary for fulfilling the SWRCB emergency response plan requirements.

6.4 Summary of Sanitary Sewer Overflow Emergency Response Plan

The District's overflow emergency response plan is divided into seven sections, as follows:

I. Authority
II. General (objectives and organization)
III. Overflow Emergency Response Plan and Procedures
IV. Public Advisory Procedure
V. Regulatory Agency Notification Procedure
VI. Media Notification Procedures
VII. Distribution and Maintenance of SSOOERP

Objectives of the District's Overflow Emergency Response Plan (OERP) are to protect public health and the environment, satisfy regulatory agency requirements, and minimize risk of

enforcement actions against the District. Additional objectives include providing appropriate customer service and protecting District personnel, the collection system and facilities, and private and public property.

Initial Notification and Response

Section 6.6 of the OERP details response procedures from initial notification through field response and internal reporting. Subsections include the following:

A. *Receipt of Information Regarding an SSO:* This subsection provides the contact numbers and chain of communication for receiving SSO reports, including Sewer Lift Station failures. This subsection also details the information that should be obtained regarding SSO's. Refer to Element 2 (Organization) of this SSMP for a flow chart depicting the chain of communication.

B. *Dispatching of Appropriate Crews to the Site(s) of Sanitary Sewer Overflow (SSO):* This subsection details protocols for dispatching the appropriate crews an emergency response equipment and discusses additional communication between the responding crew(s) and supervisors. Guidelines for completing and documenting a preliminary damage assessment are provided, and coordination with any hazardous material response is explained.

C. *Sanitary Sewer Overflow (SSO) Correction, Containment, and Clean-Up:* This subsection describes the responsibilities of the responding crew(s) while on-site. Upon arrival, the crew(s) are responsible for determining the cause of the SSO, assessing the need for additional emergency response equipment or additional staffing assistance and notifying the contact for the Riverside County Department of Environmental Health if private property is affected. Responding crews take immediate steps to stop and mitigate the SSO. This subsection also discusses measures that should be taken for containment, sampling, and site cleanup. Section IV of the plan is referenced for determining whether public advisory notices are to be posted.

   For more detailed information on the actual methods for containing an SSO, removing a blockage, and proper cleaning up on a site, response crews should refer to the Sewer Department's SSO Response Operational Guidelines.

D. *SSO Report:* The Sewer System Supervisor is responsible for submitting an SSO report to the Sewer Operations Manager. This subsection details the information to be included in the SSO report, including indication whether the SSO reached surface waters of the state, start and stop time frame of the SSO, volume of the SSO, and a damage assessment report.

Officials receiving immediate notification of the SSO vary depending on the size of the SSO and whether or not the SSO contains hazardous materials, affects surface waters of the state, or has the potential to impact human health and the environment. Appendix B, Document 1 lists these officials, and the circumstances under which they are immediately notified.

Public Notification

Sections 6.6.1 Public Observation per the OERP discusses circumstances under which the public should be notified of any SSO and establishes responsibilities for posting notices or contacting the media. Potential public notification measures include temporary signage (posted at required intervals) to indicate any polluted surface water or groundwater due to an SSO and notification through media outlets. The Sewer System Supervisor is responsible for determining whether temporary signage and further notifications are necessary. The JCSD Public Information Officer is the contact person for all media notification for the District.

Agency Reporting

Section 6.13 of the Overflow emergency response plan details reporting requirements to the State Office of Emergency Services (OES). Criteria for reporting deadlines are specified per WDR Requirements (revised Monitoring and Reporting Program of the WDR), and the section includes a decision-making flowchart.

Distribution, Updates, and Training

In addition to Sewer Department staff, Section 6.16 of the OERP specifies additional departments and staff that should receive training on the OERP. This includes the JCSD Water Department, Customer Service Department, and Finance Department. This section also provides for annual review and update of the OERP, as well as annual training sessions for all those above mentioned personnel.

Initial and Annual Refresher Training

All District personnel who may have a role in responding to, reporting, and/or mitigating a sewer system overflow (SSO) should receive training on the contents of this OERP. All new employees should receive training before they are placed in a position where they may have to respond. Current employees should receive annual refresher training on this plan and the procedures to be followed.

Affected employees will receive annual training on the following topics by knowledgeable trainers:

- The District's Overflow Emergency Response Plan (OERP)
- SSO Volume Estimation Techniques
- Researching and documenting SSO Start Times
- Impacted Surface Waters: Response Procedures
- SWRCB Employee Knowledge Expectations
- Employee Core Competency Evaluations

The District will verify that annual safety training requirements are current for each employee, and that employees are competent in the performance of all core competencies. This will be verified through electronic testing, interviews and observations. The District will address,

SSO Training Record Keeping

Records are kept on all training that is provided in support of this OERP. The records for all scheduled training courses and for each overflow emergency response plan training event and

will include date, time, length or training, place, content, name of trainer(s), and names of attendees.

Contractors Working On District Sewer Facilities

All contractors working on District sewer facilities will be required to develop a project-specific OERP. All contractor personnel will be required to receive training in the contractor's OERP and to follow that OERP in the event that they cause or observe an SSO. The OERP must be approved by the Sewer Operations Manager or designee prior to training of the contractor's staff or subcontractors. (The training requirements will include the same required data as in 6.16.3 of the OERP)

Sanitary Sewer Overflow Response Operational Guidelines

The SSO Response Operational Guidelines (OERP 6.7) are a collection of flowcharts, forms, and detailed response procedures directed at first responders and response crews. The Guidelines are divided into two main sections. The first section includes procedures and forms for responding to a sewer backup into a home or business, and the second includes procedures and forms for responding to an SSO in a public street. For more information on how SSO's are documented and photographed please refer to the OERP.

Sewer Backup Into a Home or Business

This section includes flow charts to determine the source of the backup, instructions on filling out the appropriate forms, and tips for communicating effectively with homeowners. Forms to be filled out include a first responder form, which describes the location of the backup and provides an initial damage assessment, building history form, and lateral TV report. This section also includes a claim letter and form to provide to the homeowner or property manager.

Sanitary Sewer Overflows

This section includes procedures and instructions for containment, blockage clearing, and area cleanup for an SSO. Guidelines for estimating spill volume, as well as the reporting form to be filled out are also included.

SSO Categories

Category 1: Discharge of untreated or partially treated wastewater of any volume resulting from a sanitary sewer system failure or flow condition that either:

- Reaches surface water and/or drainage channel tributary to a surface water; or
- Reached a Municipal Separate Storm Sewer System (MS4) and was not fully captured and returned to the sanitary sewer system or otherwise captured and disposed of properly.

Category 2: Discharge of untreated or partially treated wastewater greater than or equal to 1,000 gallons resulting from a sanitary sewer system failure or flow condition that either:

- Does not reach surface water, a drainage channel, or an MS4, or
- The entire SSO discharged to the storm drain system was fully recovered and disposed of properly.

Category 3: All other discharges of untreated or partially treated wastewater resulting from a sanitary sewer system failure or flow condition.

Water Quality Monitoring Plan

A Water Quality Monitoring Plan will be implemented immediately upon discovery of any Category 1 SSO of 50,000 gallons or more in order to assess impacts from SSOs to surface waters. The SSO Water Quality Monitoring Program will:

1. Contain protocols for water quality monitoring.
2. Account for spill travel time in the surface water and scenarios where monitoring may not be possible (e.g. safety, access restrictions, etc.)
3. Require water quality analyses for ammonia and bacterial indicators to be performed by an accredited or certified laboratory.
4. Require monitoring instruments and devices used to implement the SSO Water Quality Monitoring Program to be properly maintained and calibrated, including any records to document maintenance and calibration, as necessary, to ensure their continued accuracy.
5. Within 48 hours of the District becoming aware of the SSO, require water quality sampling for ammonia and enterococcus.

SSO Technical Report

The District will submit an SSO Technical Report in the CIWQS Online SSO Database within 45 calendar days of the SSO end date for any SSO in which 50,000 gallons or greater are spilled to surface waters. The Sewer Operations Manager will supervise the preparation of this report. This report, which does not preclude the Water Boards from requiring more detailed analyses if requested, shall include at a minimum, the following:

Causes and Circumstances of the SSO:

- Complete and detailed explanation of how and when the SSO was discovered.
- Diagram showing the SSO failure point, appearance point(s), and final destination(s).
- Detailed description of the methodology employed and available data used to calculate the volume of the SSO and, if applicable, the SSO volume recovered.
- Detailed description of the cause(s) of the SSO.
- Copies of original field crew records used to document the SSO.
- Historical maintenance records for the failure location.

District's Response to SSO:

- Chronological narrative description of all actions taken by the District to terminate the spill.
- Explanation of how the SSMP Overflow Emergency Response Plan was implemented to respond to and mitigate the SSO.

Final corrective action(s) completed and/or planned to be completed, including a schedule for actions not yet completed.

Water Quality Monitoring:

- Description of all water quality sampling activities conducted including analytical results and evaluation of the results.
- Detailed location map illustrating all water quality sampling points.

Attachment E6-A: District Sanitary Sewer Overflow Emergency Response Plan

JURUPA COMMUNITY SERVICES DISTRICT

Overflow Emergency Response Plan

Effective Date:	July 22, 2019
Revised Date:	
Approved by:	Board of Directors
Signature:	/s/ Jane F. Anderson
Date:	Jane F. Anderson, President of the Board of Directors July 22, 2019

Prepared by David Patzer, DKF Solutions Group
(707) 373-9709 dpatzer@dkfsolutions.com

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Element 6: Sanitary Sewer Overflow Emergency Response Plan

6.1 Purpose

The purpose of the Overflow Emergency Response Plan (OERP) is to support an orderly and effective response to Sanitary Sewer Overflows (SSOs). The OERP provides guidelines for District personnel to follow in responding to, cleaning up, and reporting SSOs that may occur within the District's service area. This OERP satisfies the SWRCB Statewide General Waste Discharge Requirements, which require wastewater collection agencies to have an Overflow Emergency Response Plan.

6.2 Policy

The District's employees are required to report all wastewater overflows found and to take the appropriate action to secure the wastewater overflow area, properly report to the appropriate regulatory agencies, relieve the cause of the overflow, and ensure that the affected area is cleaned as soon as possible to minimize health hazards to the public and protect the environment. The District's goal is to respond to sewer system overflows as soon as possible following notification. The District will follow reporting procedures in regards to sewer spills as set forth by the Santa Ana Regional Water Quality Control Board (*SARWQCB)* and the California State Water Resources Control Board (*SWRCB)***.**

6.3 Definitions As Used In This OERP

Nuisance - California Water Code section 13050, subdivision (m), defines nuisance as anything that meets all of the following requirements:

a. Is injurious to health, or is indecent or offensive to the senses, or an obstruction to the free use of property, so as to interfere with the comfortable enjoyment of life or property.
b. Affects at the same time an entire community or neighborhood, or any considerable number of persons, although the extent of the annoyance or damage inflicted upon individuals may be unequal.
c. Occurs during, or as a result of, the treatment or disposal of wastes.

Private Lateral Sewage Discharges – Sewage discharges that are caused by blockages or other problems within a privately owned lateral.

Sanitary Sewer Overflow (SSO) - Any overflow, spill, release, discharge or diversion of untreated or partially treated wastewater from a sanitary sewer system. SSOs include:

(i) Overflows or releases of untreated or partially treated wastewater that reach waters of the United States;
(ii) Overflows or releases of untreated or partially treated wastewater that do not reach waters of the United States; and
(iii) Wastewater backups into buildings and on private property that are caused by blockages or flow conditions within the publicly owned portion of a sanitary sewer system.

NOTE: Wastewater backups into buildings caused by a blockage or other malfunction of a building lateral that is privately owned are not SSOs.

SSO Categories -

Category 1: Discharge of untreated or partially treated wastewater of any volume resulting from a sanitary sewer system failure or flow condition that either:

- Reaches surface water and/or drainage channel tributary to a surface water; or
- Reached a Municipal Separate Storm Sewer System (MS4) and was not fully captured and returned to the sanitary sewer system or otherwise captured and disposed of properly.

Category 2: Discharge of untreated or partially treated wastewater greater than or equal to 1,000 gallons resulting from a sanitary sewer system failure or flow condition that either:

- Does not reach surface water, a drainage channel, or an MS4, or
- The entire SSO discharged to the storm drain system was fully recovered and disposed of properly.

Category 3: All other discharges of untreated or partially treated wastewater resulting from a sanitary sewer system failure or flow condition.

Sanitary sewer system – Any publicly-owned system of pipes, pump stations, sewer lines, or other conveyances, upstream of a wastewater treatment plant headworks used to collect and convey wastewater to the publicly owned treatment facility. Temporary storage and conveyance facilities (such as vaults, temporary piping, construction trenches, wet wells, impoundments, tanks, etc.) are considered to be part of the sanitary sewer system, and discharges into these temporary storage facilities are not considered to be SSOs.

Untreated or partially treated wastewater – Any volume of waste discharged from the sanitary sewer system upstream of a wastewater treatment plant headworks.

6.4 Regulatory Requirements for OERP Element of SSMP

GWDR Requirement

The collection system agency shall develop and implement an overflow emergency response plan that identifies measures to protect public health and the environment. At a minimum, this plan must include the following:

(a) Proper notification procedures so that the primary responders and regulatory agencies are informed of all SSOs in a timely manner;

(b) A program to ensure appropriate response to all overflows;

(c) Procedures to ensure prompt notification to appropriate regulatory agencies and other potentially affected entities (e.g. health agencies, regional water boards, water suppliers, etc.) of all SSOs that potentially affect public health or reach the waters of the State in accordance with the Monitoring and Reporting Program (MRP). All SSOs shall be reported in accordance with this MRP, the California Water Code, other State Law, and other applicable Regional Water Board Waste Discharge Requirements or National Pollutant Discharge Elimination System (NPDES) permit requirements. The Sewer System Management Plan should identify the officials who will receive immediate notification;

(d) Procedures to ensure that appropriate staff and contractor personnel are aware of and follow the Emergency Response Plan and are appropriately trained;

(e) Procedures to address emergency operations, such as traffic and crowd control and other necessary response activities; and
(f) A program to ensure that all reasonable steps are taken to contain untreated wastewater and prevent discharge of untreated wastewater to Waters of the United States and minimize or correct any adverse impact on the environment resulting from the SSOs, including such accelerated or additional monitoring as may be necessary to determine the nature and impact of the discharge.

The Sewer System Management Plan and critical supporting documents are available to the public at www.jcsd.us.

6.5 Goals

The District's goals with respect to responding to SSOs are:

- Work safely;
- Respond quickly to minimize the volume of the SSO;
- Eliminate the cause of the SSO;
- Prevent sewage system overflows or leaks from entering the storm drain system or receiving waters to the maximum extent practicable;
- Contain the spilled wastewater to the extent feasible;
- Minimize public contact with the spilled wastewater;
- Mitigate the impact of the SSO;
- Meet the regulatory reporting requirements;
- Evaluate the causes of failure related to certain SSOs; and
- Revise response procedures resulting from the debrief and failure analysis of certain SSOs.

6.6 SSO Detection

The processes that are employed to notify the District of the occurrence of an SSO include: observation by the public, receipt of an alarm, or observation by District staff during the normal course of their work.

The District operates 13 wastewater lift stations. In the event of any pump station failure, the high level sensor activates the SCADA alarm system and the District is notified. To prevent overflow, wastewater from the wet well can either be pumped into a vacuum truck for disposal to a nearby sanitary sewer manhole, or bypassed around the station into the sanitary sewer system. The Regional Lift Station also has 5MG storage ponds. River Road Lift Station has upstream storage capacity and diversion to the Brine Line capability.

6.6.1 PUBLIC OBSERVATION

Public observation is the most common way that the District is notified of blockages and spills. Contact numbers and information for reporting sewer spills and backups are in the phone book, District bills, and on the District's website: http://www.jcsd.us. The District's telephone number for reporting sewer problems is (951) 685-7434.

Normal Work Hours
When a report of a sewer spill or backup is made during normal work hours, the District Operator receives the call, forwards it to the Operations Assistant. They then forward the service request to the Sewer System Supervisor or Foreman and they will dispatch an available Collections Crew.

After Hours
After hours calls are automatically forwarded to an answering service. The Service contacts the Water Duty Operator who contacts the Sewer Duty Operator.

When calls are received, either during normal work hours or after hours, the individual receiving the call will complete the Customer Complaint Form and collection information including:

- Time and date of call
- Specific location of potential problem
- Nature of call
- In case of SSO, estimated start time of overflow
- Caller's name and telephone number
- Caller's observation (e.g., odor, duration, location on property, known impacts, indication if surface water impacted, appearance at cleanout or manhole)
- Other relevant information

The following is an overview of receiving a sewage overflow or backup report:

Receive notification of Overflow/ Backup or Unauthorized Discharge

Has the overflow impacted private property?

NO

Collection Crew performs the following:

Follow the instructions on the Sanitary Sewer Overflow Packet:

- Notify Sewer System Supervisor or designee of the incident
- Relieve blockage and clean impacted areas
- Forward the completed Sanitary Sewer Overflow Packet to the Sewer System Supervisor or designee
- Sewer System Supervisor or designee: Perform required regulatory reporting in accordance with the Regulatory Notifications Packet (*inside the Sewer Overflow Packet)*

YES

Is it possible that the overflow/ backup is due to a failure in the District-owned/ maintained sewer lines?

YES

Collections Crew performs the following:

Follow the instructions on the Sanitary Sewer Backup Packet:

- Notify Sewer System Supervisor or designee of the incident
- Relieve blockage and clean impacted areas
- Provide the customer the Customer Service Packet
- Forward the completed Sanitary Sewer Backup Packet to the Sewer System Supervisor or designee
- Sewer System Supervisor or designee:
  - Perform required regulatory reporting in accordance with the Regulatory Notifications Packet *(inside the Sewer Backup Packet)*
  - Notify Accounting Manager of incident

NO

Collections Crew performs the following:

Follow the instructions on the Sanitary Sewer Backup Packet:

If customer is <u>not</u> home:

- Complete Door Hanger and leave on customer's door

If customer is home:

- Explain to customer that the blockage is in their lateral and that the District does not have legal authority to maintain or perform work on privately owned laterals.
- Recommend to customer they hire a contractor to clear their line.
- Give customer the Sewer Spill Reference Guide pamphlet.

Accounting Manager performs the following:

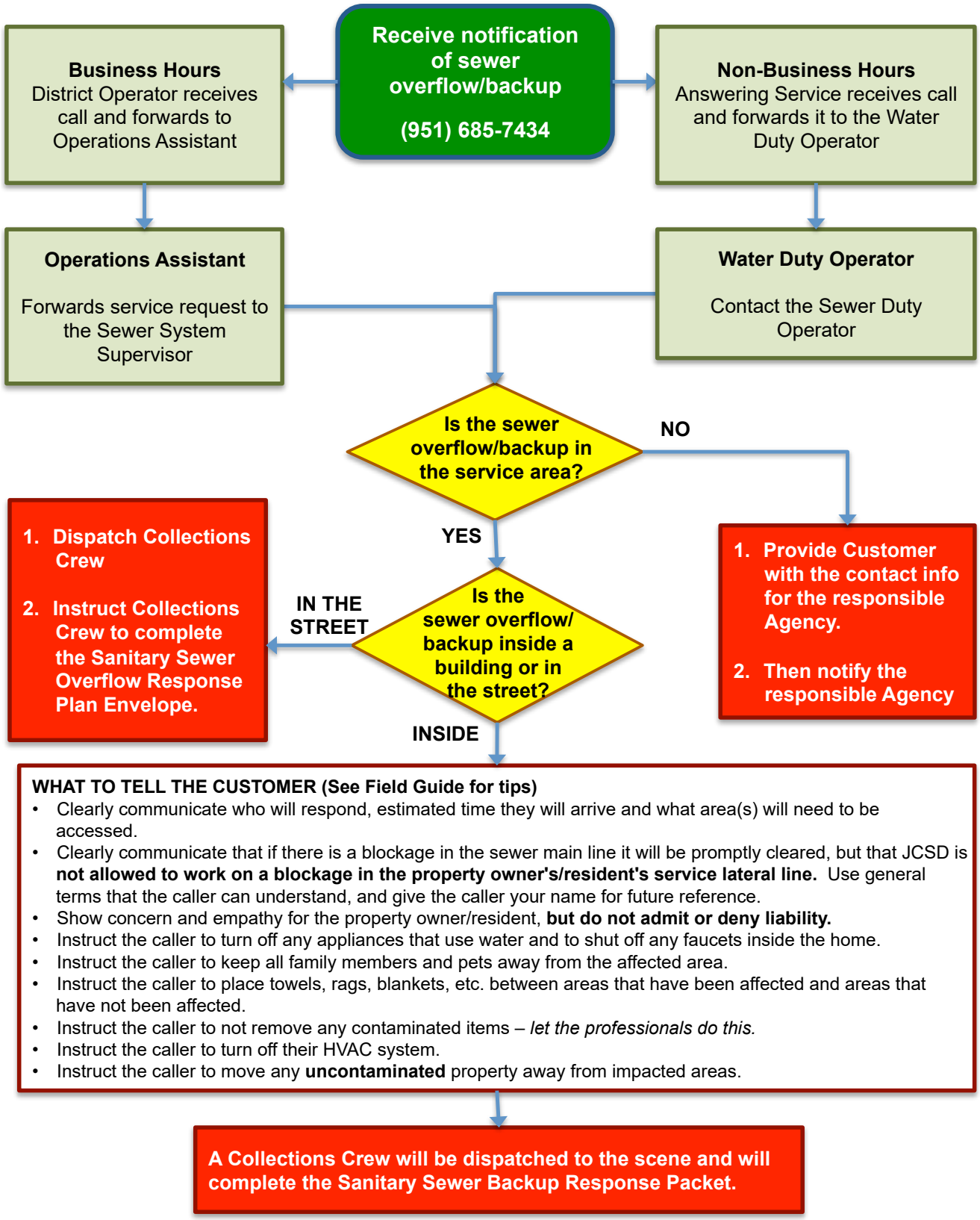
1. Review incident reports, claim form and other incident information and forward, as appropriate, to:
   Travelers
   Latham Street Suite 201
   Riverside, CA 92501
   (951) 788-8500
2. Communicate with claimant as appropriate
3. Communicate with Travelers to adjust and administer the claim to closure

6.6.2 DISTRICT STAFF OBSERVATION

District staff conducts periodic inspections of its sewer system facilities as part of their routine activities. Any problems noted with the sewer system facilities are reported to appropriate District staff that, in turn, responds to emergency situations. Work orders are issued to correct non-emergency conditions.

6.7 SSO Response Procedures

6.7.1 Sewer Overflow/Backup Response Summary



6.7.2 First Responder Priorities

The first responder's priorities are:

- To follow safe work practices.
- To respond promptly with the appropriate and necessary equipment.
- To promptly notify the Sewer System Supervisor in event of any SSO's.
- To contain the spill wherever feasible.
- To initiate the documentation process for the event.
- To restore the flow as soon as practicable.
- To minimize public access to and/or contact with the spilled sewage.
- To return the spilled sewage to the sewer system.
- To restore the area to its original condition (or as close as possible).
- To complete the documentation process for the event, including photographs and videos.

6.7.3 Safety

The first responder is responsible for following safety procedures at all times. Special safety precautions must be observed when performing sewer work. There may be times when District personnel responding to a sewer system event are not familiar with potential safety hazards peculiar to sewer work. In such cases it is appropriate to take the time to discuss safety issues, consider the order of work, and check safety equipment before starting the job.

6.7.4 Initial Response

The first responder must respond to the reporting party/problem site and visually inspect for potential sewer stoppages or overflows.

The first responder should:

- Note arrival time at the site of the overflow/backup.
- Verify the existence of a sewer system spill or backup and take phtographs.
- Determine if the overflow or blockage is from a public or private sewer.
- Identify and assess the affected area and extent of spill.
- Notify the Sewer System Supervisor of all findings. The Sewer System Supervisor will contact the caller if time permits.
- If the spill is large or in a sensitive area, document conditions upon arrival with photographs. Decide whether to proceed with clearing the blockage to restore the flow or to initiate containment measures. The guidance for this decision is:
    - Spills that are self-contained: Proceed with clearing the blockage.
    - Spills where containment is anticipated to be simple: Proceed with the containment measures, then proceed with clearing the line, and/or bypassing measures if the line cannot be opened.
    - Moderate or large spills where containment is anticipated to be difficult: Proceed with clearing the blockage. Call for immediate additional assistance and implement containment measures and/or bypassing measures if the line cannot be opened.

6.7.5 Restore Flow

Using the appropriate cleaning equipment, set up downstream of the blockage and hydro-clean upstream from a clear manhole. Attempt to remove the blockage from the system and observe the flows (always use a trap) to ensure that the blockage does not recur downstream. If the blockage cannot be cleared within a reasonable time from arrival, or sewer requires construction repairs to restore flow, then initiate containment and/or bypass pumping. If assistance is required, immediately contact other employees, contractors, and equipment suppliers.

6.7.6 Initiate Spill Containment Measures

The first responder should attempt to contain as much of the spilled sewage as possible using the following steps:

- Determine the immediate destination of the overflowing sewage.
- Plug storm drains using plugs, sandbags, and/or plastic (Visqueen Barrier) to contain the spill, whenever appropriate. If spilled sewage has made contact with the storm drainage system, attempt to contain the spilled sewage by plugging downstream storm drainage facilities.
- Contain/direct the spilled sewage using dike/dam or sandbags.
- Pump around the blockage/pipe failure/pump station.

6.8 Water Quality

6.8.1 Waters of the State

The following Waters of the State are in the Jurupa Community Services District's service area. In the event that these waters are impacted by a sanitary sewer overflow, the District has identified the following response measures, equipment and vendors:

Water Body	Response Measures	Equipment	Vendors
Santa Ana River	• Post signs • Limit access • Notify Agencies	• SSO Signs/Stakes • Barricades/Tape	
Pyrite Creek	• Build • Containment • Post Signs • Limit Access • Notify	• Tractor & Dump Trucks • SSO Signs/Stakes • Barricade/Tape	• IEUA • ERNIE • Godwin • WMWD
Ranch Drain Creek	• Build • Containment • Post Signs • Limit Access • Notify	• Tractor & Dump Trucks • SSO Signs/Stakes • Barricade/Tape	• IEUA • ERNIE • Godwin • WMWD
San Sevaine Channel	• Build • Containment • Post Signs • Limit Access • Notify	• Tractor & Dump Trucks • SSO Signs/Stakes • Barricade/Tape	• IEUA • ERNIE • Godwin • WMWD
Day Creek Channel	• Build • Containment • Post Signs • Limit Access • Notify	• Tractor & Dump Trucks • SSO Signs/Stakes • Barricade/Tape	• IEUA • ERNIE • Godwin • WMWD

6.8.2 Water Quality Sampling and Testing

Water quality sampling and testing is required whenever spilled sewage enters a water body and is performed to determine the extent and impact of the SSO. The water quality sampling procedures are:

- The first responders should call to have samples collected as soon as possible after the discovery and mitigation of the SSO event.
  - During Business Hours: Industrial Waste Inspectors (951) 685-7434
  - After Business Hours: Source Control Supervisor

- The water quality samples should be collected from upstream of the spill, from the spill area, and downstream of the spill in flowing water (e.g. creeks). The water quality samples should be collected near the points of entry of the spilled sewage.

- The samples shall then be brought to Babcock Laboratories, 6100 Quail Valley Court, Riverside, CA 92507.

6.8.3 Water Quality Monitoring Plan

A Water Quality Monitoring Plan will be implemented immediately upon discovery of any Category 1 SSO of 50,000 gallons or more in order to assess impacts from SSOs to surface waters. The SSO Water Quality Monitoring Program will:

1. Contain protocols for water quality monitoring.
2. Account for spill travel time in the surface water and scenarios where monitoring may not be possible (e.g. safety, access restrictions, etc.)
3. Require water quality analyses for ammonia and bacterial indicators to be performed by an accredited or certified laboratory.
4. Require monitoring instruments and devices used to implement the SSO Water Quality Monitoring Program to be properly maintained and calibrated, including any records to document maintenance and calibration, as necessary, to ensure their continued accuracy.
5. Within 48 hours of the District becoming aware of the SSO, require water quality sampling for ammonia and enterococcus.

6.8.4 SSO Technical Report

The District will submit an SSO Technical Report in the CIWQS Online SSO Database within 45 calendar days of the SSO end date for any SSO in which 50,000 gallons or greater are spilled to surface waters. The Sewer Operations Manager will supervise the preparation of this report. This report, which does not preclude the Water Boards from requiring more detailed analyses if requested, shall include at a minimum, the following:

<u>Causes and Circumstances of the SSO:</u>

- Complete and detailed explanation of how and when the SSO was discovered.
- Diagram showing the SSO failure point, appearance point(s), and final destination(s).
- Detailed description of the methodology employed and available data used to calculate the volume of the SSO and, if applicable, the SSO volume recovered.
- Detailed description of the cause(s) of the SSO.
- Copies of original field crew records used to document the SSO.
- Historical maintenance records for the failure location.

<u>District's Response to SSO:</u>

- Chronological narrative description of all actions taken by the District to terminate the spill.
- Explanation of how the SSMP Overflow Emergency Response Plan was implemented to respond to and mitigate the SSO.

- Final corrective action(s) completed and/or planned to be completed, including a schedule for actions not yet completed.

Water Quality Monitoring:

- Description of all water quality sampling activities conducted including analytical results and evaluation of the results.
- Detailed location map illustrating all water quality sampling points.

6.9 Recovery and Cleanup

The recovery and cleanup phase immediately begins when the flow has been restored and the spilled sewage has been contained to the extent possible. The SSO recovery and cleanup procedures are:

6.9.1 Estimate the Volume of Spilled Sewage

Use the methods outlined in the Field Guide to estimate the volume of the spilled sewage. Document the estimate using photos of the SSO site before, during and after the recovery operation.

6.9.2 Recovery of Spilled Sewage

Vacuum up and/or pump the spilled sewage and discharge it back into the sanitary sewer system.

6.9.3 Clean-up

Clean up procedures should be implemented to reduce the potential for human health issues and adverse environmental impacts that are associated with an SSO event. The procedures described are for dry weather conditions and should be modified as required for wet weather conditions. Where cleanups are beyond the capabilities of District staff, cleanup contractors will be used and monitored by District staff.

Private Property

District crews are responsible for the cleanup when the property damage is minor in nature and is outside of private building dwellings. In all other cases, affected property owners can call a water damage restoration contractor to complete the cleanup and restoration. If the overflow into property is the definite cause of District system failure, the property owner can call out a water damage restoration contractor to complete the cleanup and restoration. In both cases, District claim forms will be issued if requested by the property owners.

Hard Surface Areas

Collect all signs of sewage solids and sewage-related material with the use of all necessary personal protective equipment and utilizing Vactor trucks or pumper trucks, water hoses, water brooms, wet vacuums on small spills and various hand tools (rakes, brooms, shovels). Always protect your hands and eyes while performing sewage cleanup work. Wash down the affected area with clean water until the water runs clear.

Take reasonable steps to contain, control and vacuum up the wastewater. Allow area to dry. Repeat the process if additional cleaning is required.

Landscaped and Unimproved Natural Vegetation
Collect all signs of sewage solids and sewage-related material with the use of all necessary personal protective equipment and utilizing Vactor trucks or pumper trucks, water hoses, water brooms, wet vacuums on small spills and various hand tools (rakes, brooms, shovels). Always protect your hands and eyes while performing sewage cleanup work. Wash down the affected area with clean water until the water runs clear. The flushing volume should be approximately three times the estimated volume of the spill. Contain, control and vacuum up the wash water so that none is released. Allow the area to dry. Repeat the process if additional cleaning is required.

Natural Waterways
The Department of Fish and Wildlife will be notified by CalOES as appropriate in the event of:

- Fish kill
- SSO greater than or equal to 1,000 gallons

Fish and Wildlife will provide the professional guidance needed to effectively clean up spills that occur in these sensitive environments. Clean up should proceed quickly in order to minimize negative impact. Sewage causes depletion of dissolved oxygen, which will kill aquatic life. Any water that is used in the cleanup should be de-chlorinated prior to use, and when possible the clean up water will be removed and disposed of within the sanitary sewer system.

Wet Weather Modifications
Omit flushing and sampling during heavy storm events (i.e., sheet of rainwater across paved surfaces) with heavy runoff where flushing is not required and sampling would not provide meaningful results. NOTE: If no flushing and/or sampling is performed due to weather related events, this non-action must be documented and provided to the regulatory agencies requiring this data.

6.10 Public Notification

Signs will be posted and barricades put in place to keep vehicles and pedestrians away from contact with spilled sewage. County Environmental Health instructions and directions regarding placement and language of public warnings will be followed. Additionally, the Sewer System Supervisor will use his/her best judgment regarding supplemental sign placement in order to protect the public and local environment. Signs will not be removed until directed by County Environmental Health, Sewer System Supervisor, or designee.

Creeks, streams, ponds and rivers that have been contaminated as a result of an SSO will be posted at visible access locations until the risk of contamination has subsided to acceptable background bacteria levels. The warning signs, once posted, will be checked every day to ensure that they are still in place and that the signs are still legible (Inclement weather damage, wind damage, graffiti, etc.) and replaced as necessary. Photographs of each sign placement will be taken and accounted for. The total number of signs will be documented and maintained throughout the SSO event and subsequent posting period.

In the event that an overflow occurs at night, the location should be inspected first thing the following day. The field crew will look for any signs of sewage solids and sewage-related material that may warrant additional cleanup activities, if additional clean up work is deemed necessary, notify the Sewer System Supervisor on the post-event findings and begin the clean up process. The crew will take additional photos before and after the re-cleaning effort.

When contact with the local media is deemed necessary, the Community Affairs Officer will provide the media with all revelvant information.

6.11 Failure Analysis Investigation

The objective of the failure analysis investigation is to determine the "root cause" of the SSO and to identify corrective action(s) needed that will reduce or eliminate future potential for the SSO to recur.

The investigation should include reviewing all relevant data to determine appropriate corrective action(s) for the line segment. The investigation should include:

- Reviewing and completing the Sewer Overflow Report,
- Reviewing the incident timeline and other documentation regarding the incident,
- Reviewing communications with the reporting party and witness.
- Review volume estimate, volume recovered estimate, volume estimation assumptions and associated drawings,
- Reviewing available photographs and videos,
- Interviewing staff that responded to the spill, as well as contracted assistance
- Reviewing past maintenance records,
- Reviewing past CCTV records,
- Conducting a CCTV inspection to determine the condition of the line segment immediately following the SSO and reviewing the video and logs,
- Reviewing any FOG related information or results

The product of the failure analysis investigation should be the determination of the root cause and the identification of the corrective actions. The Collection System Failure Analysis Form should be used to document the investigation.

6.12 Post SSO Event Debriefing

Every SSO event is an opportunity to evaluate the response and reporting procedures. Each overflow event is unique, with its own elements and challenges including volume, cause, location, terrain, and other parameters.

As soon as possible after a Category 1 and/or Category 2 SSO event, all of the participants, from the person who received the call to the last person to leave the site, should meet to review the procedures used and to discuss what worked and where improvements could be made in responding to and mitigating future SSO events. The results of the debriefing should be recorded and tracked to ensure the action items are prioritized and completed.

6.13 Notification, Reporting, Monitoring and Recordkeeping Requirements

In accordance with the Statewide General Waste Discharge Requirements for Sanitary Sewer Systems (SSS WDRs), the Jurupa Community Services District maintains records for each sanitary sewer overflow. Records include:

- Documentation of response steps and/or remedial actions
- Photographic evidence to document the extent of the SSO, field crew response operations, and site conditions after field crew SSO response operations have been completed. The date, time, location, and direction of photographs taken will be documented.
- Documentation on how the estimations on the volume of discharged and/or recovered overflow were calculated

ELEMENT	REQUIREMENT	METHOD
NOTIFICATION	Within two hours of becoming aware of any Category 1 SSO greater than or equal to 1,000 gallons discharged to surface water or spilled in a location where it probably will be discharged to surface water, the District will notify the California Office of Emergency Services (CalOES) and obtain a notification control number.	Call Cal OES at: **(800) 852-7550**
REPORTING	• Category 1 SSO: The District will submit draft report within three business days of becoming aware of the SSO and certify within 15 calendar days of SSO end date. • Category 2 SSO: The District will submit draft report within 3 business days of becoming aware of the SSO and certify within 15 calendar days of the SSO end date. • Category 3 SSO: The District will submit certified report within 30 calendar days of the end of month in which SSO the occurred. • SSO Technical Report: The District will submit within 45 calendar days after the end date of any Category 1 SSO in which 50,000 gallons or greater are spilled to surface waters. • "No Spill" Certification: The District will certify that no SSOs occurred within 30 calendar days of the end of the month or, if reporting quarterly, the quarter in which no SSOs occurred. • Collection System Questionnaire: The District will update and certify every 12 months	Enter data into the CIWQS Online SSO Database[1] (http://ciwqs.waterboards.ca.gov/), certified by the Legally Responsible Official(s)[2]. All information required by CIWQS will be captured in the Sanitary Sewer Overflow Report. Certified SSO reports may be updated by amending the report or adding an attachment to the SSO report within 120 calendar days after the SSO end date. After 120 days, the State SSO Program Manager must be contacted to request to amend an SSO report along with a justification for why the additional information was not available prior to the end of the 120 days.
WATER QUALITY MONITORING	The District will conduct water quality sampling within 48 hours after initial SSO notification for Category 1 SSOs in which 50,000 gallons or greater are spilled to surface waters.	Water quality results will be uploaded into CIWQS for Category 1 SSOs in which 50,000 gallons or greater are spilled to surface waters.
RECORD KEEPING	The District will maintain the following records: • SSO event records. • Records documenting Sanitary Sewer Management Plan (SSMP) implementation and changes/updates to the SSMP. • Records to document Water Quality Monitoring for SSOs of 50,000 gallons or greater spilled to surface waters. • Collection system telemetry records if relied upon to document and/or estimate SSO Volume.	Self-maintained records shall be available during inspections or upon request.

For reporting purposes, if one SSO event of whatever category results in multiple appearance points in a sewer system, a single SSO report is required in CIWQS that includes the GPS coordinates for the location of the SSO appearance point closest to the failure point, blockage or location of the flow condition that cause the SSO, and descriptions of the locations of all other discharge points associated with the single SSO event.

[1] In the event that the CIWQS online SSO database is not available, the Sewer System Supervisor will notify SWRCB by phone and will provide all required information in accordance with the time schedules identified above. In such an event, the District will submit the appropriate reports using the CIWQS online SSO database when the database becomes available. A copy of all documents that certify the submittal in fulfillment of this section shall be retained in the SSO file.

[2] The District always has at least one LRO. Any change in the LRO(s) including deactivation or a change to contact information, will be submitted to the SWRCB within 30 days of the change by calling (866) 792-4977 or emailing help@ciwqs.waterboards.ca.gov.

6.14 Complaint Records

The District maintains records of all complaints received whether or not they result in sanitary sewer overflows. These complaint records include:

- Date, time, and method of notification
- Date and time the complainant or informant first noticed the SSO
- Narrative description describing the complaint
- A statement from the complainant or informant, if they know, of whether or not the potential SSO may have reached waters of the state
- Name, address, and contact telephone number of the complainant or informant reporting the potential SSO (if not reported anonymously)
- Follow-up return contact information for each complaint received (if not reported anonymously)
- Final resolution of the complaint
- Work Order request information used to document all feasible and remedial actions taken

The District's New World ERP/Cityworks is used to maintain complaint records. The procedure is as follows:

During Business Hours:

1. The Operations Assistant enters the Work Order into the New World/Cityworks or will ask the Customer Service Representative to do so.
2. New World/Cityworks generates a hardcopy Work Order for the Collections Crew to complete.
3. The Collections Crew will route the completed Work Order to their Supervisor and then to the Customer Service Representative
4. The Customer Service Representative closes out the Work Order.

After Business Hours:

1. The Answering Service sends an email to the Customer Service Representative who generates the electronic work order.
2. The On Call Operator completes the Call Out Sheet and this is used to help complete the Work Order in the New World/CItyworks.

All records will be maintained for a minimum of five years whether or not they result in an SSO.

6.15 Equipment

This section provides a list of specialized equipment that is required to support this Overflow Emergency Response Plan.

- *Closed Circuit Television (CCTV) Inspection Unit:* A CCTV Inspection Unit is required to determine the root cause for all SSOs from gravity sewers and force mains.
- *Camera:* A digital or disposable camera is required to record the conditions upon arrival, during clean up, and upon departure including any follow up activity at the site of the event.
- *Emergency Response Trucks:* A utility body pickup truck, or open bed is required to store and transport the equipment needed to effectively respond to sewer emergencies. The equipment and tools should include containment and clean up materials and traffic control devices.
- *Portable Generators, Portable Pumps, Piping, and Hoses:* Equipment used to bypass pump, divert, or power equipment to mitigate an SSO.
- *Combination/Sewer Cleaning Trucks:* Combination/high-velocity sewer cleaning trucks with vacuum tanks are required to clear blockages in gravity sewers, vacuum spilled sewage, and wash down the impacted area following the SSO event.

The District has the following equipment, which may be necessary in the event of a sanitary sewer overflow or backup:

\Jurupa Community Services District\Equipment\ATS (8)

Equipment	Year, Make, Model	(No Meter)	Unit #	Serial #	Type	Tag #	Operator
ATS Chandler - GE Zenith	GE Zenith ZTS2L40EX-7	0	ATS Chandler	1324344	Automatic Tran		,
ATS Clay/Van - Eaton	Kohler KCP-AMTC-0225S	0	ATS Clay/Van	SGM32DHD7	Automatic Tran		,
ATS Florine - Eaton	Eaton ATC3C2X30225XKV	0	ATS Florine	065237	Automatic Tran		,
ATS Hamner - ASCO	ASCO C7ATS3150N5	0	ATS Hamner	177899	Automatic Tran		,
ATS Linares	GE Zenith ZTG000A00020E	0	ATS Linares	1673606-1	Automatic Tran		,
ATS Regional 1 - GE Zenith	GE Zenith ZS5DB10041-07E(	0	TS Regional 1	1615877-1	Automatic Tran	Inside buildir	,
ATS Regional 2 - GE Zenith	GE Zenith ZTG000A0004E	0	TS Regional 2	1662054-1	Automatic Tran		,
ATS River Rd. - GE Zenith	GE Zenith ZG5SR1003P-070	0	ATS River Rd.	1472840	Automatic Tran		,

\Jurupa Community Services District\Equipment\Arrow/Message Boards (2)

Equipment	Year, Make, Model	Mileage	Unit #	Serial #	Type	Tag #	Operator
E166 - 2016 Wanco WVMBM-3LP	2016 Wanco WVMBM-3LP	0	E166	181818-01-02	Message Boarc	Truck 092	,
E167 - 2016 Wanco WVMBM-3LP	2016 Wanco WVMBM-3LP	0	E167	181818-01-01	Message Boarc	Truck 131	,

\Jurupa Community Services District\Equipment\Compressors (2)

Equipment	Year, Make, Model	Mileage	Unit #	Serial #	Type	Tag #	Operator
E1811 - 2018 Ingersoll-Rand 7100E15-V	2018 Ingersoll-Rand 7100E15	0	E1811	CBV597136	120 gallon stati	Regional	,
E932 - 1993 CompAir 68-PUAS-I-SS	1993 CompAir 68-PUAS-I-SS	0	E932	068-000008	Compressor		,

\Jurupa Community Services District\Equipment\Cranes (3)

Equipment	Year, Make, Model	Hours	Unit #	Serial #	Type	Tag #	Operator
E1412 - 2014 Gorbet FS300-18-W16C12	2014 Harrington/Gorbet ER2A	0	E1412	00159165/515279	3 Ton Free star	River RD.	,
E792 - 1979 Yale PC21331 20/7	1979 Yale PC21331 20/7	0	E792	AX22332	4,000LB Crane	Regional	,
E873 - 1987 Auto Crane 3203-prx	1987 Auto Crane 3203-prx	0	E873	320304-034-AT-12-87	3200lb Auto Cr	Truck 022	,

\Jurupa Community Services District\Equipment\Generators (12)

Equipment	Year, Make, Model	Mileage	Unit #	Serial #	Type	Tag #	Operator
E002 - 2000 Cummins DGEA-4477650	2000 Cummins DGEA-447765	157	E002	C000078509	Generator	Chandler lift	,
E024 - 2002 Cummins DGDA-5005773	2002 Cummins DGDA-500577	123.8	E024	L010310999	Generator	Hamner lift	,
E053 - 2005 Caterpillar SR4B	2005 Caterpillar SR4B	318	E053	AFH00365	Generator	River Rd.	,

\Jurupa Community Services District\Equipment\Generators (12)

Equipment	Year, Make, Model	Mileage	Unit #	Serial #	Type	Tag #	Operator
E1024 - 2010 Caterpillar D100-6	2010 Caterpillar D100-6	120.2	E1024	N3R00911	Stationary Gen	Florine	,
E1332 - 2013 Caterpillar D100-6	2013 Caterpillar D100-6	46.2	E1332	N3R03423	generator 157H	Linares	,
E135 - 2013 Honda EU2000I	2013 Honda EU2000I	0	E135	EAAJ-2610414	Generator 200(	Regional	,
E153 - 2015 Honda EU2000I	2015 Honda EU2000I	0	E153	EACT-1220837	Generator 200(	Regional	,
E1530 - 2015 Kohler 30REOZIC	2015 Kohler 30REOZIC	37.2	E1530	5GM32DJJ	Generator 49H	Clay LS	,
E157 - 2015 Cummins Onan 7HGJAE-21	2015 Cummins Onan 7HGJAE	3,576	E157	D150810978	Generator	Truck#105	,
E163 - 2016 Honda EU3000is	2016 Honda EU3000is	0	E163	EZGF-1645158	Genrator 3000	Confined sp(	,
E781 - 1978 Katolight D400FPZH	1978 Katolight D400FPZH	739.5	E781	78869 S-29107	Generator	Regional	,
E982 - 1998 Caterpillar 3306B	1998 Caterpillar 3306B	293	E982	09NR02746	Generator	Regional	,

\Jurupa Community Services District\Equipment\Ice machine (2)

Equipment	Year, Make, Model	Mileage	Unit #	Serial #	Type	Tag #	Operator
E1221 - 2012 Ice-O-Matic ICE0400HA4	2012 Ice-O-Matic ICE0400HA	0	E1221	12111280010229	ice maker (Reg	Regional	,
E1816 - 2018 Best Choice Products SKY	2018 Best Choice Products SI	0	E1816	1712000140	Ice maker	Warehouse	,

\Jurupa Community Services District\Equipment\Misc Equipment (4)

Equipment	Year, Make, Model	Mileage	Unit #	Serial #	Type	Tag #	Operator
E1210 - 2012 Plimbers Depot, INC.	2012 Plimbers Depot, INC.	0	E1210		Jetting nozzle t	Warehouse	,
E1334 - 2013 Labconco 4420421	2013 Labconco 4420421	0	E1334	130272048	Dishwasher	Regional	,
E1533 - 2015 Hammerhead 26022	2015 Hammerhead 26022	0	E1533	139911	Pneumatic Pier	Regional	,
E159 - 2015 McBratney Company AB-24	2015 McBratney Company AB	36.9	E159	AB1915000N10615	Blower confine	Riv.Rd.SE61	,

\Jurupa Community Services District\Equipment\Pressure washer (1)

Equipment	Year, Make, Model	Mileage	Unit #	Serial #	Type	Tag #	Operator
E1425 - 2014 Troy-Bilt 2800	2014 Troy-Bilt 2800	0	E1425	1402205600681	2800 PSI press	Regional	,

\Jurupa Community Services District\Equipment\Skid Steer and attachments (6)

Equipment	Year, Make, Model	(No Meter)	Unit #	Serial #	Type	Tag #	Operator
E1117 - 2011 CAT BU118	2011 CAT BU118	140	E1117	LXB01025	Sweeper		,
E1118 - 2011 Caterpillar 351-9371	2011 Caterpillar 351-9371	0	E1118	65SSFP011054	48" Fork lift atta	Regional	,
E1212 - 2012 CAT BR172	2012 CAT BR172	0	E1212	TAB02254	Brush cutter	Regional	,
E1213 - 2012 CAT 217-6229	2012 CAT 217-6229	0	E1213	65SSIG001478	78" Grapple bu	Regional	,
E1214 - 2012 CAT 279-5403	2012 CAT 279-5403	0	E1214	65SSMP002115	78" Multipurpos	Regional	,

\Jurupa Community Services District\Equipment\Skid Steer and attachments (6)

Equipment	Year, Make, Model	Hours	Unit #	Serial #	Type	Tag #	Operator
E131 - 2013 CAT 272DXHP	2013 CAT 272DXHP	422.8	E131	SHY00358	Skid Steer	Regional	,

\Jurupa Community Services District\Equipment\Stompers (1)

Equipment	Year, Make, Model	Mileage	Unit #	Serial #	Type	Tag #	Operator
E1520 - 2015 Multiquip	2015 Multiquip MVC-88VTHW	5	E1520	T2A7046	Plate Compactc	Regional	,

\Jurupa Community Services District\Equipment\Trailers (3)

Equipment	Year, Make, Model	Mileage	Unit #	Serial #	Type	Tag #	Operator
E142 - 2014 Hydro Engineering CMT14-2	2014 Hydro Engineering CMT	0	E142	N/A	Trash pump ho:	Regional	,
E1521 - 2015 Carson Trailer RC 162	2015 Carson Trailer RC 162	0	E1521	4HXRC1628GC178440	Confined space	Regional	,
E156 - 2015 Zieman 2324E	2015 Zieman 2324E	0	E156	1ZCT31E21FZ344998	Tilt trailer	Yard	,

\Jurupa Community Services District\Equipment\Trash Pump (4)

Equipment	Year, Make, Model	Mileage	Unit #	Serial #	Type	Tag #	Operator
E041 - 2004 Multiquip MQ-41TDH	2004 Multiquip MQ-41TDH	0	E041	41TDH-4366	Trash Pump	Regional	,
E046 - 2004 Godwin Pump CD225M	2004 Godwin Pump CD225M	0	E046	0437622703	8" dry prime pu	Regional	,
E143 - 2014 Godwin Pump CD150M	2014 Godwin Pump CD150M	23.7	E143	14620365-01	Towable 6" Dri-	Regional	,
E1532 - 2015 Godwin Pump GTP-100HX	2015 Godwin Pump GTP-100H	0	E1532	140901168	Wet-Prime Tras	Regional	,

\Jurupa Community Services District\Equipment\Video Truck (8)

Equipment	Year, Make, Model	Mileage	Unit #	Serial #	Type	Tag #	Operator
E1014 - 2010 Cues Ultra Shorty	2010 Cues Ultra Shorty	0	E1014	10073001	Variable Weigh	Truck 105	,
E1015 - 2010 Cues Steerable pipe rangei	2010 Cues Steerable pipe ran	0	E1015	10080305	3 Wheeled tran	Truck 105	,
E1016 - 2010 Cues OZII	2010 Cues OZII	0	E1016	10042305	Pan/Tilt zoom c	Truck 105	,
E1017 - 2010 Cues Granite XP	2010 Cues Granite XP	0	E1017	10062202	Wireless GPS r	Truck 105	,
E1018 - 2010 Cues N/A	2010 Cues N/A	0	E1018	10080401	Cable Reel	Truck 105	,
E1019 - 2010 Cues	2010 Cues	0	E1019	10080305	Cable reel conti	Truck 105	,
E1021 - 2010 Western Mule P-5A	2010 Western Mule P-5A	0	E1021	P05260386	Truck mounted	Truck 105	,
E1716 - 2017 Cues OZII	2017 Cues OZII	0	E1716	17091840	Pan/Tilt zoom c	Truck 105	,

\Jurupa Community Services District\Equipment\Welder (2)

Equipment	Year, Make, Model	Mileage	Unit #	Serial #	Type	Tag #	Operator
E137 - 2013 Miller Multimatic 200	2013 Miller Multimatic 200	0	E137	MD101069N	120v welder	Regional	,

\Jurupa Community Services District\Equipment\Welder (2)

Equipment	Year, Make, Model	Hours	Unit #	Serial #	Type	Tag #	Operator
E1518 - 2015 Miller Bobcat 250 EFI	2015 Miller Bobcat 250 EFI	0	E1518	MF050147R	Welder	Truck#022	,

\Jurupa Community Services District\Vehicles\Sewer (15)

Equipment	Year, Make, Model	Mileage	Unit #	Serial #	Type	Tag #	Operator
022 - 2002 GMC C-6500	2002 GMC C-6500	70,840	022	1GDK7H1C92J505068	Truck	1120970	Ramirez, Alex
041 - 2004 International DT-530	2004 International DT-530	60,067	041	1HTWHADT44J026231	Truck	1181058	,
061 - 2006 Ford f-350 Service body	2006 Ford f-350 Service body	125,352	061	1FDWF36566EB96675	Truck	1241143	,
092 - 2009 International 7400	2009 International Work Star 7	37,796	092	1HTWGAZT29J123124	Jet Truck	1298767	Flores, Juan
093 - 2009 Ford F-250 Service Body	2009 Ford F-250 Service Body	85,895	093	1FDSX20509EB09002	Truck	1333863	Tapia, Luis
103 - 2010 Dodge Dakota	2010 Dodge Dakota	47,581	103	1D7RE3BP6AS151909	Truck	1306124	Payfer, Jim
105 - 2010 Ford E-450	2010 Ford E-450	48,252	105	1FDXE4FS9ADA10452	Video box truck	1302309	Soria, Rudy
114 - 2011 Ford F-250 Service Body	2011 Ford F-250 Service Body	112,490	114	1FCBF2A67BEA37442	Truck	1302331	Medina, Fidel
131 - 2013 Mack GU 713	2013 Mack GU 713	26,702	131	1M2AX09C2DM016899	Truck	1402347	Guy, Josh
142 - 2014 Ford F-150	2014 Ford F-150	37,807	142	1FTEX1CM6EKG35371	Truck	1404906	Call truck, Call truck
161 - 2016 Chevy Equinox	2016 Chevy Equinox	29,049	161	3GNFLEEK4G6194968	SUV	1404937	DuCasse, Dan
176 - 2017 Ram 4500	2017 Ram 4500	555	176	3C7WRKFJ1HG711003	Truck dually co		,
181 - 2018 Ram 3500	2018 Ram 3500	9	181	3C7WRSBJ7JG236856	Truck dually w/		,
184 - 2018 Chevy Colorado Extra Cab	2018 Chevy Colorado Extra C	4,914	184	1GCHSBEA7J1215199	Truck	1438725	Hench, Russell
185 - 2018 Ford F-650	2018 Ford F-650	0	185	1FDNX6EE4JDF04159	Truck W/utility		,

\Jurupa Community Services District\Vehicles\Water quality/ industrial waste (3)

Equipment	Year, Make, Model	Mileage	Unit #	Serial #	Type	Tag #	Operator
071 - 2007 Ford F-150	2007 Ford F-150	85,441	071	1FTRF12WX7KC19981	Truck	1263477	Johnson, Matt
0813 - 2008 Ford Ranger	2008 Ford Ranger	59,577	0813	1FTYR10U68PA52172	Truck	1302332	Vasquez, Alfredo
115 - 2011 Chevy Express 1500	2011 Chevy Express 1500	71,353	115	1GCSGAF48B1172598	Van	1344124	McCall, Quincy

Total equipment listed = 76

6.16 SSO Response Training

This section provides information on the training that is required to support this Overflow Emergency Response Plan.

6.16.1 Initial and Annual Refresher Training

All District personnel who may have a role in responding to, reporting, and/or mitigating a sewer system overflow should receive training on the contents of this OERP. All new employees should receive training before they are placed in a position where they may have to respond. Current employees should receive annual refresher training on this plan and the procedures to be followed.

Affected employees will receive annual training on the following topics by knowledgeable trainers:

- The District's Overflow Emergency Response Plan (OERP)
- SSO Volume Estimation Techniques
- Researching and documenting SSO Start Times
- Impacted Surface Waters: Response Procedures
- SWRCB Employee Knowledge Expectations
- Employee Core Competency Evaluations

The District will verify that annual safety training requirements are current for each employee, and that employees are competent in the performance of all core competencies. This will be verified through electronic testing, interviews and observations. The District will address, through additional training/instruction, any identified gaps in required core competencies.

Through SWRCB Employee Knowledge Expectations training the employee should be able to answer the following:

- Please briefly describe your name and job title.
- Please describe for us approximately when you started in this field and how long you have worked for your agency.
- Please expand on your current position duties and role in responding in the field to any SSO complaints.
- Please describe your SOPs used to respond/mitigate SSOs when they occur.
- Describe any training your agency provides or sends you to for conducting spill volume estimates.
- We are interested in learning more about how your historical SSO response activities have worked in the field. We understand from discussions with management earlier that you use the OERP from the SSMP. Please elaborate on how you implement and utilize the procedures in the plan.

- Historically, before any recent changes, can you please walk us through how you would typically receive and respond to any SSO complaints in the field?
- Can you tell us who is responsible for estimating SSO volumes discharged? If it is you, please describe how you go about estimating the SSO volume that you record on the work order/service request forms?
- What other information do you collect or record other than what is written on the work order form?
- Describe if and when you ever talk with people that call in SSOs (either onsite or via telephone) to further check out when the SSO might have occurred based on what they or others know? If you do this, can you tell us where this information is recorded?
- We understand you may be instructed to take pictures of some sewer spills/backups into structures. Other than these SSOs, when else would you typically take any pictures of an SSO?
- Please walk us through anything else you'd like to add to help us better understand how your field crews respond and mitigate SSO complaints.

6.16.2 SSO Response Drills

Periodic training drills should be held to ensure that employees are up to date on these procedures, equipment is in working order, and the required materials are readily available. The training drills will cover scenarios typically observed during sewer related emergencies (e.g. mainline blockage, mainline failure, force main failure, pump station failure, and lateral blockage). The results and the observations during the drills will be recorded and action items should be tracked to ensure completion.

6.16.3 SSO Training Record Keeping

Records should be kept of all training that is provided in support of this plan. The records for all scheduled training courses and for each overflow emergency response training event and will include date, time, length or training, place, content, name of trainer(s), and names of attendees.

6.17 Authority

- Health & Safety Code Sections 5410-5416
- CA Water Code Section 13271
- Fish & Wildlife Code Sections 5650-5656
- State Water Resources Control Board Order No. 2006-0003-DWQ

Jurupa Community Services District

SEWER DEPARTMENT
Customer Incident Report Form

Customer Information

Name: _____

Agency: _____

Address: _____

Problem Location: _____

Cross Street: _____
(CIRCLE) *Eastvale or Jurupa*

Phone/cell: _____

Phone (Office): _____ *ext:* _____

Thomas Guide Page: _____

Brief description of the incident/emergency:
_____
_____
_____
_____

Ask what Time the caller observed and/or noticed the Incident/Emergency? TIME: _____:_____AM/PM
SSO Confirmed YES / NO (CIRCLE)

Return Call on the Final Deposition of Incident
TIME: _____:_____AM/PM

DATE: _____/_____/_____

By whom: _____

Name of contact: _____

WORK ORDER#_____

DATE: _____/_____/_____

TIME: _____:_____ AM/PM

- ☑ the appropriate Box
- ☐ SEWER TROUBLE
- ☐ SEWER BACKING
- ☐ SEWER LEAK
- ☐ HOUSE/BUILDING FLOODING
- ☐ LOCATE SEWER LATERAL
- ☐ BAD ODOR
- ☐ ROACHES/VERMIN
- ☐ M/H COVER OFF/LOOSE/NOISY
- ☐ **SSO**
- ☐ VANDALISM
- ☐ SEWER LIFT STATION ISSUE
- ☐ OTHER_____

EMPLOYEE ASSIGNED:_____
DATE: _____/_____/_____
ARRIVAL TIME: _____:_____ AM/PM

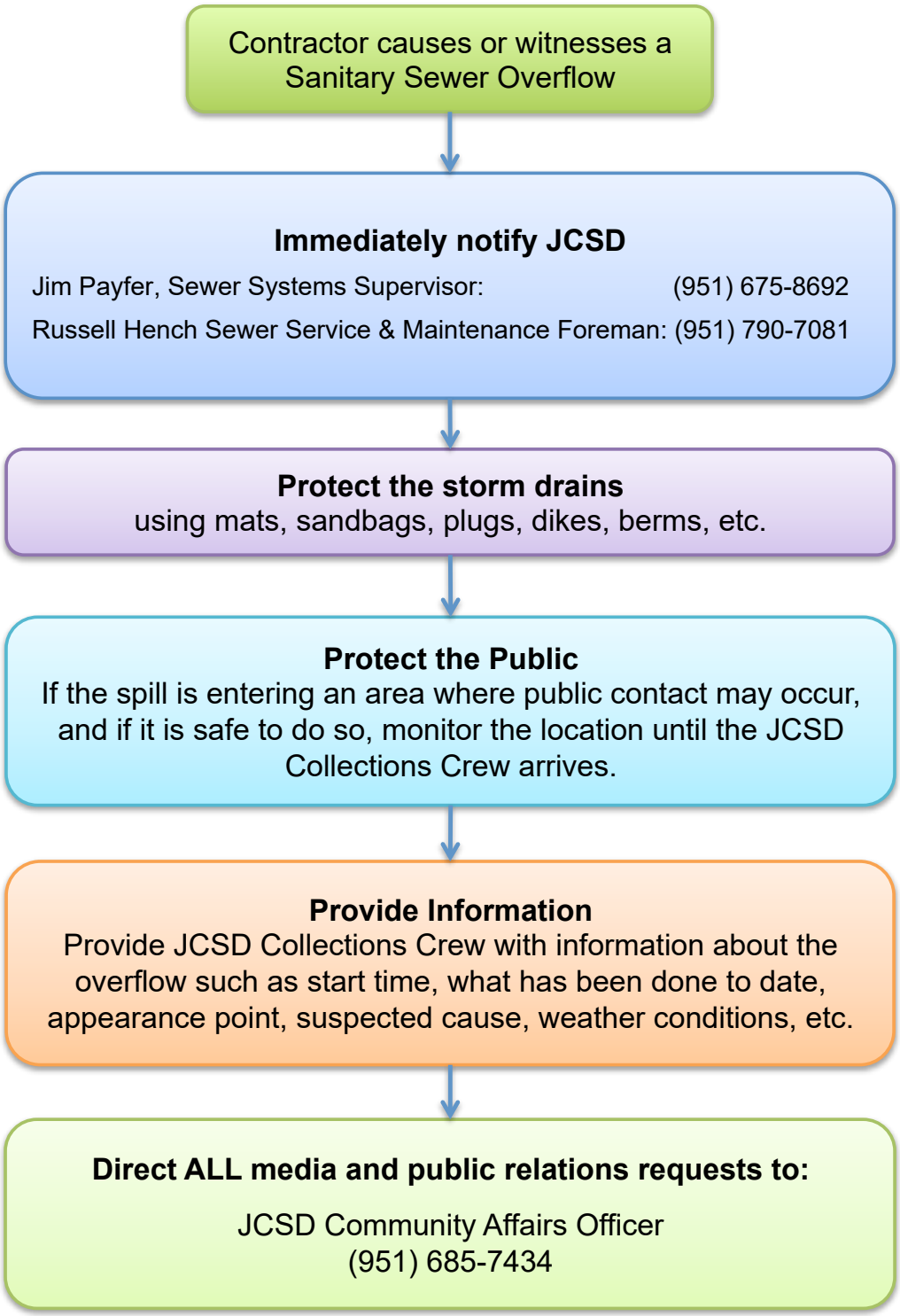
On site: Observations /Work performed:

Remarks:
_____
_____
_____
_____
_____
_____
_____
_____
_____

(Use reverse side of WO)

Contractor Orientation

The following procedures are to be followed in the event that you cause or witness a Sanitary Sewer Overflow.



Sanitary Sewer Overflows

How to avoid them and what to do if you don't

What? A sanitary sewer overflow (SSO) is a discharge of untreated human and industrial waste before it reaches the wastewater treatment facility.

Where? SSOs usually occur through manholes, plumbing fixtures and service cleanouts.

Why? SSOs are usually caused by grease, debris, root balls, or personal hygiene products blocking the sewer lines, unusually high flow volume, or insufficient bypass pumping equipment.

If you cause or witness an SSO, immediately contact:

Jurupa Community Services District

(951) 685-7434

How to prevent SSOs:

…when clearing plugged sewer laterals:

- Remove root balls, grease blockages and any other debris from the sewer
- If you can't prevent root balls, grease or debris from entering the sewer main, call us at (951) 685-7434, so we can work with you to remove the blockage and prevent blockages further downstream
- Use plenty of water to flush lines.

…when constructing or repairing sewer laterals:

- Contact Development Engineering at (951) 685-7434 for a permit and lateral specifications.
- Check your work area. Make sure there is no debris left in the sewer line before you backfill.
- Avoid offset joints, which may make sewer lines vulnerable to root intrusion and grease or debris accumulation. Properly bed your joints and don't hammer tap.

Jurupa Community Services District 11201 Harrel Street, Jurupa Valley, CA 91752 www.jcsd.us

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Jurupa Community Services District

(951) 685-7434

Jurupa Community Services District

11201 Harrel Street

Jurupa Valley, CA 91752

www.jcsd.us

Extreme Weather/Natural Disaster Planning: HIGH PRIORITY ASSETS

The following assets need to be monitored and inspected prior to, during, and following an extreme weather event or natural disaster:

Critical Asset	Location	Access issues	Description of what to monitor and inspect	Inspection following event/ disaster
Regional Lift Station	10124 Limonite Avenue Jurupa Valley, CA 91752	Access from West	• High Flows • River Damage • Pond holding capacity	• River Berm • Ponds • Pumps & Grinders
River Road Lift Station	14688 River Road	N/A	• High Flows • Pump Operation	• Pumps • Grinder
Regional Lift Station Force Main	• General drive to Riverside Plant • River Crossings, Low areas	Walk, use Crest Street	Exposed or damaged pipe	• Pipes • Manholes
All Lift Stations	Various	N/A	Damage	Facility

Contact Information

The following vendors provide services related to overflow emergency response.

Vendor	Service	Telephone
Godwin Pumps	Equipment Rental	(951) 681-3636
Rain for Rent	Equipment Rental	(951) 653-2171
Jericho Systems	Environmental Consulting	(909) 915-5900
Tom Dodson and Associates	Environmental Consulting	(909) 882-3612

The District has Mutual Aid Agreements with the following:

Agency/Network	Contact/Telephone
ERNIE: Emergency Response Network of the Inland Empire	Cecilia Contreras (909) 885-4900
IEUA: Inland Empire Utilities Agency and the Regional Contracting Agencies	(909) 993-1935

REGULATORY NOTIFICATIONS PACKET

Instructions:

1. Receive call from on-site Collections Crew reporting a Sanitary Sewer Overflow.
2. Open this packet.
3. Refer to the Regulatory Reporting Guide for instructions.
4. Use the SSO Reporting Checklist (RN-2) for the appropriate category of spill to document that all notifications are made according to the reporting schedule.

Contents:

Print on 6”x9” envelope

Reporting Instructions				
Deadline	**See reverse side for contact information and definitions of the categories** of spills of untreated or partially treated wastewater from publically owned sanitary sewer system			**Spill from Private Lateral**
	Category 1	**Category 2**	**Category 3**	
2 hours after awareness of SSO	• If SSO is greater than or equal to 1,000 gallons, call CalOES at (800) 852-7550. • Notify the Santa Ana Regional Water Quality Control Board • Notify Riverside County Environmental Health • Make Additional Notifications as necessary (see RN-1c)	• Notify Riverside County Environmental Health • Make Additional Notifications as necessary (see RN-1c)	• Notify Riverside County Environmental Health • Make Additional Notifications as necessary (see RN-1c)	-
48 Hours after awareness of SSO	If 50,000 gal or more were not recovered, begin water quality sampling and initiate impact assessment	-	-	-
3 Days after awareness of SSO	Submit Draft Spill Report in the CIWQS* database	Submit Draft Spill Report in the CIWQS* database	-	-
15 Days after response conclusion	Certify Spill Report in CIWQS*. Update as needed until 120 days after SSO end time	Certify Spill Report in the CIWQS* database. Update as needed until 120 days after SSO end time	-	-
30 Days after end of calendar month in which SSO occurred	-	-	Certify Spill Report in the CIWQS* database. Update as needed until 120 days after SSO end time	-
45 days after SSO end time	If 50,000 gal or more were not recovered, submit SSO Technical Report using CIWQS*	-	-	-

* In the event that the CIWQS online SSO database is not available, notify the State Water Resources Control Board (SWRCB) by phone or email and provide required information until the CIWQS online SSO database becomes available. See contact information on Side B.

Note: For reporting purposes, if one SSO event results in multiple appearance points, complete one SSO report in the CIWQS SSO Online Database, and report the location of the SSO failure point, blockage or location of the flow condition that caused the SSO, in the CIWQS SSO Online Database, including all the discharge points associated with the SSO event.

Contact Information

Contact	Telephone/Fax/Email
California Governor's Office of Emergency Services	(800) 852-7550 (916) 845-8911
Riverside County Department of Environmental Health	(951) 358-5316
Santa Ana Regional Water Quality Control Board, Najah Amin	(951) 782-4130
State Water Resources Control Board (SWRCB):	
Armando Martinez, Water Resources Control Engineer	(916) 341-5586 Armando.Martinez@waterboards.ca.gov

Additional Notifications

- Refer to the Emergency Notifications Sheet for additional contact information.

Authorized Personnel

The following District personnel are authorized to perform regulatory reporting:

Name	Job Title	Telephone	✔ If LRO*
Dan DuCasse	Sewer Operations Manager	(951) 685-7434	✔
Jim Payfer	Sewer Systems Supervisor	(951) 685-7434	✔

*The District's Legally Responsible Official (LRO) is authorized to electronically sign and certify SSO reports in CIWQS

Definitions of Spill Categories

The response crew will complete the SSO Report form in the SSO Packet to document how category was determined.

Category	Definition
Category 1:	Discharge of untreated or partially treated wastewater of any volume resulting from a sanitary sewer system failure or flow condition that either: • Reaches surface water and/or drainage channel tributary to a surface water; or • Reached a Municipal Separate Storm Sewer System (MS4) and was not fully captured and returned to the sanitary sewer system or otherwise captured and disposed of properly.
Category 2:	Discharge of untreated or partially treated wastewater greater than or equal to 1,000 gallons resulting from a sanitary sewer system failure or flow condition that either: • Does not reach surface water, a drainage channel, or an MS4, or • The entire SSO discharged to the storm drain system was fully recovered and disposed of properly.
Category 3:	All other discharges of untreated or partially treated wastewater resulting from a sanitary sewer system failure or flow condition

Use this Checklist for Category 1 SSOs only

STEP 1: Receive call from crew.

STEP 2: 2-hour Notification

- ☐ If SSO is greater than or equal to 1,000 gallons, notify CalOES within 2 hours of the time the agency was notified of the spill: (800) 852-7550
  - Date Called: _____
  - Time called: _____ : _____ ☐AM ☐PM
  - CalOES Control number: _____
- ☐ Notify Riverside County Department of Environmental Health
- ☐ Notify Najah Amin at the Santa Ana Regional Water Quality Control Board
- ☐ Refer to the Emergency Notification Sheet (RN-1c) and make any additional notifications.

STEP 4: Within 48-Hours after awareness of SSO

- ☐ Only if 50,000 gallons or more was not recovered, implement Water Quality Monitoring Plan.

STEP 5: Within 3 Days after awareness of SSO

- ☐ Submit a Draft Spill Report using the CIWQS online reporting database.

STEP 6: Within 15 Days after response conclusion

- ☐ Certify the Spill Report using the CIWQS online reporting database. Updates to the Spill Report may be made for up to 120 days following the conclusion of the SSO Response.

STEP 7: Within 45 Days after SSO end time

- ☐ Within 45 days after the conclusion of the SSO Response, submit an SSO Technical Report using the CIWQS online reporting database only if 50,000 gallons or more was spilled to surface waters.

Use this Checklist for Category 2 and 3 SSOs only

STEP 1: Receive call from crew.

STEP 2: Make notifications

- ☐ Notify Riverside County Department of Environmental Health
- ☐ Notify Najah Amin at the Santa Ana Regional Water Quality Control Board
- ☐ Refer to the Emergency Notification Sheet (RN-1c) and make any additional notifications.

STEP 3: Submit Draft Spill Report (Category 2 only)

- ☐ Submit a Draft Spill Report using the CIWQS online reporting database within 3 days after awareness of Category 2 SSO.

STEP 4: Certify Spill Report

- ☐ Certify the Spill Report using the CIWQS online reporting database:
  - Category 2 SSO: Within 15 days after the conclusion of the response
  - Category 3 SSO: Within 30 days after the end of the calendar month in which the SSO occurred

- ☐ Updates to the Spill Report may be made for up to 120 days following the conclusion of the SSO Response.

BACKUP PACKET

Table of Contents

For pre-assembled packets contact DKF Solutions Group at 707.373.9709 or losscontrol@sbcglobal.net

In the event of a **Sewer Backup** into a home/business
READ THIS FIRST

Notifications Trigger:	Contact Immediately:	Telephone:
For all backups into/onto private property possibly due to problems in the public sewer	Sewer System Supervisor	(951) 685-7434
For restoration/remediation	Wizard Restorations	(877) 379- 6889
	Chino Water Damage	(909) 703-3595
For any media requests	Community Affairs Officer	(951) 685-7434

Maintenance Crew:

- ❑ Open this envelope.
- ❑ Follow instructions on BP-1 Backup Response Flowchart
- ❑ If Category 1 SSO greater than or equal to 1,000 gallons, contact the Sewer Operations Manager and Sewer System Supervisor to notify CalOES.
- ❑ If the backup appears to be due to a failure in the District-owned sewer line and the customer is home, give them the Customer Service Packet and have them initial this envelope below:
  Customer acknowledges receipt of Customer Service Packet: _____
  If customer is not home, complete door hanger and hang it on the customer's door or doors (there may be multiple entrances).
- ❑ Complete the Chain of Custody record (right) and forward this packet to the Sewer System Supervisor.

Print Name: _____

Initial: _____

Date: _____

Time: _____

Sewer System Supervisor:

- ❑ Open this envelope. Review forms.
- ❑ Open the Regulatory Notifications Packet and make required notifications.
- ❑ Complete the Claims Submittal Checklist (enclosed). Copy all items on the Claims Submittal Checklist for internal archiving purposes.
- ❑ Complete the Chain of Custody record (right) and forward the originals to the Sewer Operation Manager.
- ❑ Debrief using the Collection System Failure Analysis form.

Print Name: _____

Initial: _____

Date: _____

Time: _____

Sewer Operation Manager

- ❑ Review all reports and data.
- ❑ Complete the Chain of Custody record (right) and forward this packet to the Accounting Manager.

Print Name: _____

Initial: _____

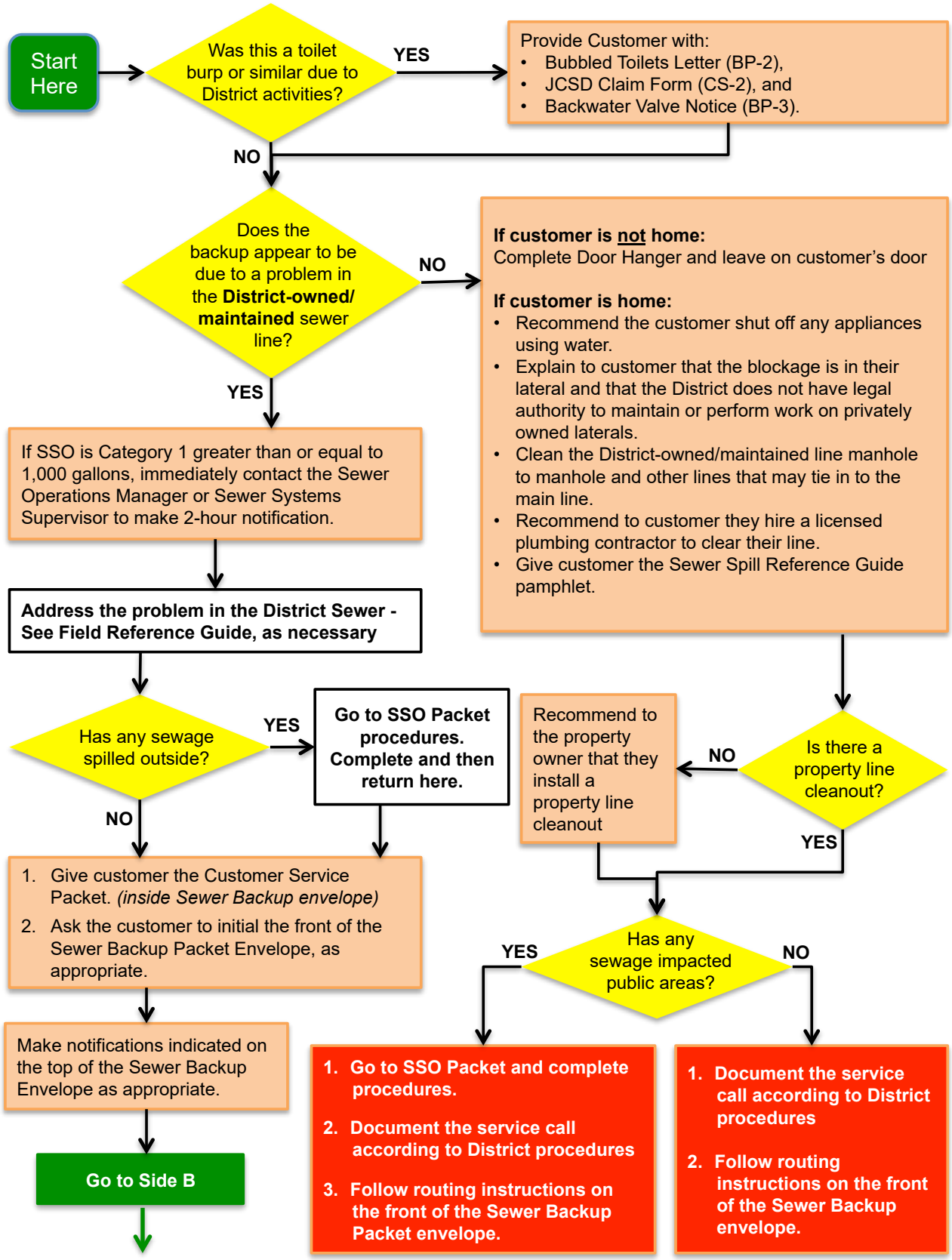
Date: _____ Time: _____

Accounting Manager

- ❑ Refer to the Claims Handling Procedure Summary

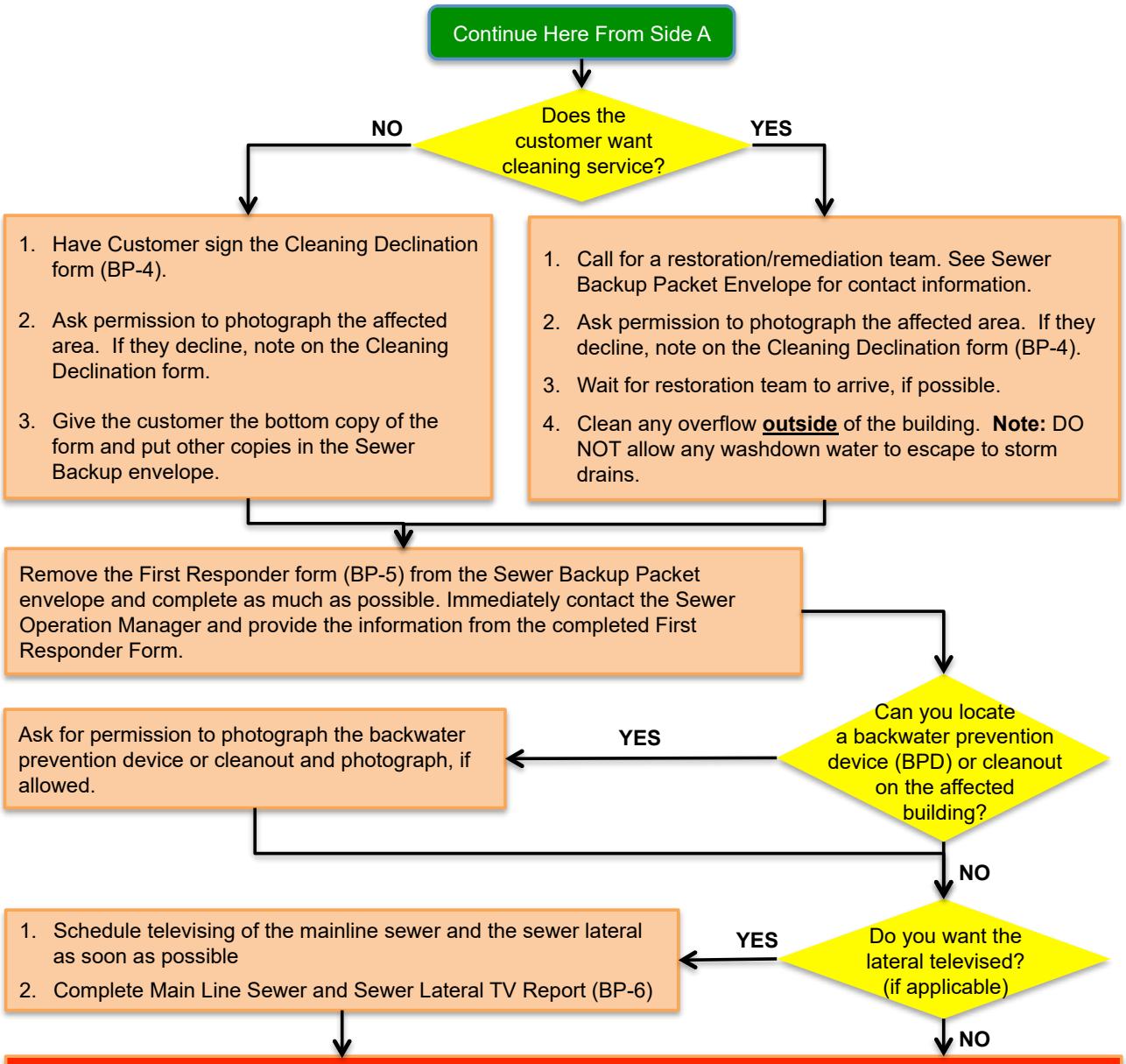
Backup Response Flowchart

BP-1
Side A



Backup Response Flowchart

BP-1
Side B



MEDIA AND PUBLIC RELATIONS GUIDELINES:

Exercise caution in contacts with the public or media when you respond to a spill. Any information you provide or statements you make may become pertinent in the event of possible court action, it is important to AVOID THE FOLLOWING:

- Giving out the wrong information,
- Speculating about the situation you are responding to
- Making accusations against customers, businesses or other agencies
- Providing incorrect facts about a company or other agency

Be courteous and attempt to provide accurate information to questions within the limits above. In some cases, it may be appropriate to say that we do not have any information, or to delay answering a question and then to say when an answer might be available.

In most cases, refer media requests to the media coordinator indicated on the front of the Sewer Overflow Packet envelope.

Dear Jurupa Community Services District Customer,

Thank you for informing us that your toilet bubbled while our crews were working in proximity of your property. We apologize for the inconvenience and hope that this letter will answer some of your questions about bubbling toilets.

1. **Is this a health risk?**
   The water that came out of your toilet is potable water from the toilet bowl. Unless your toilet was in use when this occurred, this water is normally no different than that encountered while cleaning your toilet.

2. **What is the District doing in the street?**
   In order to insure reliable sewer service, the District inspects, cleans, and repairs its sewer system on a continuous basis.

3. **How does sewer cleaning cause my toilet to bubble?**
   Typical industry cleaning equipment uses high-pressure water to clean sewers. The first step is to use the high-pressure water jets to propel the hose and cleaning nozzle upstream as far as 800 feet. During this process, air within the main sewer pipe is displaced and sometimes goes up the private lateral pipe and releases though the toilet. This can also happen during the cleaning phase, when high-pressure water is pulled downstream to the cleaning truck.

4. **What causes the air to come from my toilet?**
   Over the years, District crews have found that the bubbling of toilets have many causes, some of which are:
   - Obstructed vent pipes within houses, apartments and businesses;
   - Vent pipes that are positioned too far from the toilet;
   - Lateral pipes that may be in use as the crew is cleaning (e.g. draining washing machine, draining bathtub, etc.);
   - Lateral pipes that may have obstructions that are causing them to hold water (e.g. roots, grease, etc.).
   - Non-functioning backwater prevention devices, if originally equipped.

5. **What does District staff do, once informed of a bubbling toilet?**
   Once notified of a bubbling toilet, the crew leader explains to the customer what has happened, and checks to see if there is a clean-out in the customer's yard that could be opened in the future during cleaning. The crew leader then makes notes and completes paperwork that puts the address on the District's computerized notification list. In the future, crews will notice that this address was "bubbled" at one time, and, before commencing the cleaning, they will notify the occupant of the possibility of bubbling toilets. In the event the occupant is not present when the cleaning begins, the crews will attempt to open clean-outs and/or lower water pressure to avoid bubbling.

6. **What can I do to prevent my toilet from bubbling?**
   When a sewer begins to drain slowly, it may be a sign that it needs to be cleaned or repaired. Trees and shrubs may have root structures that are entering the lateral pipe. The homeowner needs to make sure to have a clean-out for accessing the line. Unless there is a cleanout on the property line, it is the homeowner's responsibility to keep the sewer lateral pipe in good working condition. **The District also recommends the homeowner install a backwater prevention device to prevent bubbling or sewer back-ups into the home.**

It is always a good idea to keep the toilet lid down when not in use, and not install carpets in the bathroom unless they can be easily removed and cleaned. For more information, please visit our website at www.jcsd.us or call the Sewer Operations Manager at (951) 685-7434 ext. 107.

Sincerely,

Jurupa Community Services District

Jurupa Community Services District

BP-3a

BACKWATER VALVE NOTICE
Install an approved type of backwater valve

INFORMATION FOR THE PROPERTY OWNER, OWNERS AGENT, MANAGER OR TENANT OF THE PROPERTY LOCATED AT:

_____.

Within the Jurupa Community Services District, County of Riverside, California.
Date Notice Issued: _____.
*JCSD Issuing Representative:*_____.

_____. _____.

[Signature of: Owner, Owners Agent, Manager or Tenants] *[Date Received]*

The Jurupa Community Services District while investigating a complaint regarding the backflow of sewage into your premises observed the Non-conformance with established Ordinances and the Uniform Plumbing Code. The section addressing the concerns is quoted for your information. The section that applies to your property is identified by a check mark.

References: *Jurupa Community Services District - Ordinance No. #5, Section 7. (Ordinance No's #35 & #78)*

The California Code of Regulations-Title 24, Part 5 - California Building Standards Code. Part 5 is known as the California Plumbing Code and incorporates, by adoption, the 2012 edition of the Uniform Plumbing Code (UPC). The Uniform Plumbing Code Designated as an American National Standard, the Uniform Plumbing Code is a model code developed by the International Association of Plumbing and Mechanical Officials (IAPMO) to govern the installation and inspection of plumbing systems as a means of promoting the public's health, safety and welfare.

Jurupa Community Services District - Ordinance No. #5

- **Section 7 - Maintenance: Back Flow Valves**: Back flow valves shall be required by the district for houses whose elevation is lower than the top of the existing upstream manhole from that connection.

California Plumbing Code; CHAPTER 1, ADMINISTRATION, DIVISION II;
101.7 Maintenance

- The plumbing and drainage system of any premises under the Authority Having Jurisdiction shall be maintained in a sanitary and safe operating condition by the owner or the owner's agent.

101.11.1 Health and Safety

- Where compliance with the provisions of this code fail to eliminate or alleviate a nuisance, or other dangerous or insanitary condition that involves health or safety hazards, the owner or the owner's agent shall install such additional plumbing and drainage facilities or shall make such repairs or alterations as may be ordered by the Authority Having Jurisdiction.

101.11.4 Operating Condition

- Plumbing systems, materials, and appurtenances, both existing and new, and parts thereof shall be maintained in operating condition. Devices or safe-guards required by this code shall be maintained in conformance with the code edition under which installed. The owner or the owner's designated agent shall be responsible for maintenance of plumbing systems. To determine compliance with this subsection, the

Authority Having Jurisdiction shall be permitted to cause any plumbing system to be re-inspected.

California Plumbing Code; CHAPTER 7, SANITARY DRAINAGE, PART I;
710.0 Drainage of Fixtures Located below the Next Up-stream Manhole or Below the Main Sewer Level

- **710.1 Backflow Protection**. Fixtures installed on a floor level that is lower than the next upstream manhole cover of the public or private sewer shall be protected from backflow of sewage by installing an approved type of backwater valve. Fixtures on such floor level that are not below the next upstream manhole cover shall not be required to be protected by a backwater valve. Fixtures on floor levels above such elevation shall not discharge through the backwater valve. Cleanouts for drains that pass through a backwater valve shall be clearly identified with a permanent label stating “backwater valve downstream”.

- **710.2 Sewage Discharge**. Drainage piping serving fixtures that are located below the crown level of the main sewer shall discharge into an approved water-tight sump or receiving tank, so located as to receive the sewage or wastes by gravity. From such sump or receiving tank, the sewage or other liquid wastes shall be lifted and discharged into the building drain or building sewer by approved ejectors, pumps, or other equally efficient approved mechanical devices.

- **710.6 Backwater valves**. Backwater valves, gate valves, fullway ball valves, unions, motors, compressors, air tanks, and other mechanical devices required by this section shall be located where they will be accessible for inspection and repair and, unless continuously exposed, shall be enclosed in a masonry pit fitted with an adequately sized removable cover. Backwater valves shall have bodies of cast-iron, plastic, brass, or other approved materials; shall have noncorrosive bearings, seats, and self-aligning discs; and shall be constructed so as to ensure a positive mechanical seal. Such backwater valves shall remain open during periods of low flows to avoid screening of solids and shall not restrict capacities or cause excessive turbulence during peak loads. Unless otherwise listed, valve access covers shall be bolted type with gasket, and each valve shall bear the manufacturer's name cast into the body and the cover.

Jurupa Community Services District
Overflow Emergency Response Plan

Sanitary Sewer Backup Response Packet
Declination of Sewage Cleaning Services

BP-4

Customer Information		
NAME:	ADDRESS:	TELEPHONE:

ON (date)	AT (time)	Approximately (quantity)	GALLONS OF:
			☐ Sewage ☐ Grey Water ☐ Toilet Bowl Water ☐ Odor ☐ Other (describe): ☐ Information from customer:

Overflowed from (or odor emanating from)	The overflow affected the following areas *(check one):*
☐ Toilet ☐ Shower/Tub ☐ Washer ☐ Floor drain ☐ Other (describe): ☐ Verbal information from customer:	☐ Bathroom ☐ Bedroom ☐ Hallway ☐ Garage ☐ Kitchen ☐ Crawlspace ☐ Other (specify):

The overflow affected the following flooring: **and/or additional materials:**

☐ Tile ☐ Wood Flooring ☐ Area Rugs ☐ Towels
☐ Linoleum ☐ Carpet ☐ Clothing ☐ Other (specify):
☐ Other (specify):

Photos: ☐ Were Not Taken due to customer refusal to allow areas to be photographed ☐ Were Taken, number of photos:

This Form Completed By: **Date:** _____
Time:

CUSTOMER, please read the following and sign below:
I/We acknowledge the Jurupa Community Services District (*District)* has offered to provide professional cleaning and decontamination services to remediate the sewage backup and/or overflow described above and that we declined the offer. We further understand and acknowledge that because we have declined, any necessary remediation activities will be conducted without District assistance, and that the District will not accept responsibility for work performed by persons other than those engaged by the District. The District will also not accept responsibility for any charges related to this incident that are not usual and customary. Please refer to the Customer Service Packet for whom to contact if you have any questions.

Customer Signature*:		**Date:**
The information above was explained to the customer by the following employee:	**Name:**	**Title:**
	Signature:	**Date:**

**Note to responders: if customer declines to sign this form, then have a co-worker sign here as a witness:*
Name: _____ *Signature:* _____ *Date:* _____

Recommendations to customer to clean up the spill:

- Keep pets and children out of the affected area
- Turn off heating/air conditioning systems
- Consider contracting an IICRC-certified professional cleaning and decontamination service. Refer to www.iicrc.org.
- Wear personal protective equipment such as rubber boots, rubber gloves, and goggles during cleanup of the affected area.
- Remove and discard items that cannot be washed and disinfected (such as: mattresses, rugs, cosmetics, baby toys, etc.)
- Remove and discard drywall and insulation that has been contaminated with sewage or flood waters.
- Thoroughly clean all hard surfaces (such as flooring, concrete, molding, wood and metal furniture, countertops, appliances, sinks and other plumbing fixtures) with hot water and laundry or dish detergent.
- Help the drying process with fans, air conditioning units, and dehumidifiers.
- After completing cleanup, wash your hands with soap and water. Use water that has been boiled for 1 minute (allow water to cool before washing your hands.) OR use water that has been disinfected (solution of 1/8 teaspoon of household bleach per 1 gallon of water). Let it stand for 30 min. If water is cloudy, use ¼ teaspoon of household bleach per 1 gallon of water.
- Wash all clothes worn during the cleanup in hot water and detergent (wash separately from uncontaminated clothes).
- Wash clothes contaminated with flood or sewage water in hot water and detergent. Use a laundromat for washing large quantities of clothes and linens until your onsite wastewater system has been professionally inspected and serviced.
- Seek immediate attention if you become injured or ill.
- Clean and disinfect your personal protective equipment.

Distribution Instructions – Top Copy to District records; Middle Copy to Accounting Manager; Bottom Copy to Customer

Jurupa Community Services District
Overflow Emergency Response Plan

Sanitary Sewer Backup Response Packet
First Responder Form

BP-5
Side A

Fill out this form as completely as possible.
Ask customer if you may enter the home. If so, take photos of damaged and undamaged areas.

PERSON COMPLETING THIS FORM:	PHONE: DATE: TIME:
TIME STAFF ARRIVED ON-SITE:	
DID CUSTOMER CALL CLEANING CONTRACTOR? ☐ Yes ☐ No If YES, name of contractor:	
RESIDENT:	PROPERTY MANAGERS: OWNER/TENANT:
STREET ADDRESS: CITY, STATE AND ZIP: PHONE:	STREET ADDRESS: CITY, STATE AND ZIP: PHONE:
IS NEAREST UPSTREAM MANHOLE VISIBLY HIGHER THAN THE DRAIN THAT OVERFLOWED? ☐ Yes ☐ No	
# OF PEOPLE LIVING AT RESIDENCE:	

Approximate Age of Home:	# of Bathrooms:	# of Rooms Affected:
Approximate Amount of Spill (gallons):	Approximate Time Sewage Has Been Sitting (hrs/days):	

Numbers of Pictures Taken: _____
☐ Digital ☐ Film ☐ No photos were taken due to customer refusal to allow areas to be photographed

Does property have a Property Line Cleanout?	☐ YES ☐ NO ☐ Unknown
Ask the Customer if they have a Backwater Prevention Device (BPD)?	☐ YES ☐ NO ☐ Unknown
If yes, was the BPD operational at the time of the overflow?	☐ YES ☐ NO ☐ Unknown
Have there ever been any previous spills at this location?	☐ YES ☐ NO ☐ Unknown
Has the resident had any plumbing work done recently? *If YES, please describe:*	☐ YES ☐ NO

GO TO SIDE B

SANITARY SEWER LINE BLOCKAGE LOCATION

Draw sketch of the event:

Recommended Follow-Up Action(s):

Place completed form in Sewer Backup Envelope and follow routing instructions

Sanitary Sewer Backup Response Packet

Main Line Sewer and Sewer Lateral TV Report

BP-6

PLEASE COMPLETE AS THOROUGHLY AS POSSIBLE

PERSON COMPLETING THIS FORM:

DATE:
PHONE:

CAMERA TYPE:

AFFECTED PROPERTY STREET ADDRESS:

CITY, STATE AND ZIP:

PHONE

LOCATION OF CAMERA ENTRY:

LOCATION OF CAMERA STOP:

DESCRIBE AREA TV'd:

UPSTREAM MANHOLE #:

PLEASE CHECK ALL THAT WERE DISCOVERED – *Describe Extent & Location Using Camera Entry Point As Reference*:

- ❒ Broken Lateral – Describe:
  Depth:
- ❒ Roots – Severity: ☐ Light ☐ Moderate ☐ Heavy
- ❒ Grease – Severity: ☐ Light ☐ Moderate ☐ Heavy
- ❒ Sag – Describe:
  Depth:
  Length:
- ❒ BPD – Describe:
  Location:
- ❒ Cleanout – Describe:
  Operational: ☐ Yes ☐ No
  Location:
- ❒ Joint/Junction – Describe:
  Depth
- ❒ Grade – Describe:
- ❒ Grit – Severity: ☐ Light ☐ Moderate ☐ Heavy
- ❒ Other – Describe:

TIME OF OVERFLOW:

TIME BLOCKAGE RELIEVED:

TIME LATERAL TV'd:

DEPTH OF LATERAL:

RECOMMENDED
FOLLOW UP WORK ACTIONS:

Mark for USA location? ☐ Yes ☐ No

Lateral Locations Marked in Green Paint? ☐ Yes ☐ No

SIGNATURE OF EMPLOYEE PERFORMING TV WORK:

DATE

****Attach Granite XP Lateral Report with still images (full size)****

If applicable, place completed form in Sewer Backup Packet and follow routing instructions.

INSTRUCTIONS: Complete all items *EXCEPT* those that are shaded gray

Spill Category *(check one)*:

- ☐ Category 1: Discharge of untreated or partially treated wastewater of any volume resulting from a sanitary sewer system failure or flow condition that either (1) Reaches surface water and/or drainage channel tributary to a surface water; OR (2) Reached a Municipal Separate Storm Sewer System (MS4) and was not fully captured and returned to the sanitary sewer system or otherwise captured and disposed of properly.
- ☐ Category 2: Discharge of untreated or partially treated wastewater greater than or equal to 1,000 gallons resulting from a sanitary sewer system failure or flow condition that either (1) Does not reach surface water, a drainage channel, or an MS4, OR (2) The entire SSO discharged to the storm drain system was fully recovered and disposed of properly.
- ☐ Category 3: All other discharges of untreated or partially treated wastewater resulting from a sanitary sewer system failure or flow condition
- ☐ Private Lateral Sewer Discharge

Describe in detail the basis for choosing the spill category:

☐ **IMMEDIATE NOTIFICATION: If this is a Category 1 spill greater than or equal to 1,000 gallons discharged to surface water or spilled in a location where it probably will be discharged to surface water, notify CalOES within 2 hours at (800) 852-7550.**

A. SPILL LOCATION

Spill Location Name:		
Latitude Coordinates:	Longitude Coordinates:	
If multiple appearance points, use the GPS coordinates for the location of the SSO appearance point closest to the failure point/blockage.		
Street Name and Number:		
Nearest Cross Street:	City:	Zip Code:
County:	Spill Location Description:	

B. SPILL DESCRIPTION

Spill Appearance Point (check one or more): ☐ Building/Structure ☐ Force Main ☐ Gravity Sewer ☐ Pump Station ☐AirVac or Blow-off ☐ Other Sewer System Structure *(i.e. cleanout)* ☐ Manhole- Structure ID#: ☐ Other *(specify):*

Did the spill reach a drainage channel and/or surface water? ☐ Yes (*Category 1)* ☐No

If the spill reached a storm drain, was it fully captured and returned to the Sanitary Sewer? ☐ Yes ☐No (*Category 1)*

Was this spill from a private lateral? ☐ Yes ☐No If YES, name of responsible party:

Discharged into: ☐Surface water ☐Waters of the state ☐Drainage channel ☐Pond ☐Stream ☐River ☐Catch basin ☐Lined channel ☐Unlined channel ☐Separate storm drain ☐Paved surface ☐Unpaved surface ☐Building/structure ☐Street/curb/gutter ☐Other:
Provide name(s) of affected drainage channels, etc.:

Total Estimated spill volume *(in gallons)*: gallons

Est. volume that reached a separate storm drain that flows to a surface water body:	gal	Recovered:	gal
Est. volume that reached a drainage channel that flows to a surface water body:	gal	Recovered:	gal
Est. volume discharged directly to a surface water body:	gal	Recovered:	gal
Est. volume discharged to land:	gal	Recovered:	gal

Calculation Methods: ☐Eyeball ☐Photo Comparison ☐Upstream Connections ☐Area/Volume ☐Lower Lateral ☐Other (describe):

NOTE: Attach all Spill Volume Estimation documentation including calculations and summary.

C. SPILL OCCURRING TIME

Estimated spill start date:	Estimated spill start time:
Date spill reported to sewer department:	Time spill reported to sewer crew:
Date sewer crew arrived:	Time sewer crew arrived:
Who was interviewed to help determine start time?	
Estimated spill end date:	Estimated spill end time:

NOTE: Attach detailed start time determination documentation.

D. CAUSE OF SPILL

Location of Blockage: ☐ Main ☐ Lateral ☐Private Lateral ☐M/H or Vault ☐AIRVAC or blow-off ☐Other:

SSO cause(s) *(check all that apply)*:
☐ Debris/Blockage ☐ Flow exceeded capacity ☐Grease ☐ Operator error ☐ Roots
☐ Pipe problem/failure ☐ Pump station failure ☐ Rainfall exceeded design ☐ Vandalism ☐ Inflow/infiltration
☐ Animal carcass ☐ Electrical power failure ☐ Bypass ☐ Pressure Bypass ☐ Debris from laterals
☐ Construction Debris ☐ Contractor error ☐ Flow-through Bypass (inside M/H)
☐ Other (specify):

Diameter (in inches) of pipe at point of blockage/spill cause (if applicable):

Sewer pipe material at point of blockage/spill cause (if applicable):

Estimated age of sewer asset at the point of blockage or failure (if applicable):

Description of terrain surrounding point of blockage/spill cause: ☐ Flat ☐ Mixed ☐ Steep ☐ Under body of water

E. SPILL RESPONSE

Spill response activities (check all that apply): ☐Cleaned up ☐Contained all/portion of spill ☐CCTV inspection ☐Restored flow ☐Returned all/portion of spill to sanitary sewer ☐Other (specify):

Spill response completed (date & time):

Visual inspection result of impacted waters (if applicable):

Any fish killed? ☐ Yes ☐ No Any ongoing investigation? ☐ Yes ☐ No

Were health warnings posted? ☐ Yes ☐ No If yes, provide health warning/closure posting/details:

Were samples of impacted waters collected? ☐ Yes ☐ No
If YES, select the analyses: ☐ DO ☐ Ammonia ☐ Bacteria ☐ pH ☐ Temperature ☐ Other:

Recommended corrective actions: (check all that apply and provide detail)
☐ Clean line again ASAP:
☐ CCTV:
☐ Re-CCTV:
☐ Additional work:
☐ Cleaning schedule change:
☐ Cleaning method change:
☐ Fog investigation:
☐ Repair line segment:
☐ Replace line segment:
☐ Repair or replace M/H, C/O or vault
☐ R&R AirVac or blow-off
☐ Additional comments:

List all agency personnel involved in the response including name, title and their role in the response:

Name	Title	Role

F. NOTIFICATION DETAILS (if applicable)

CalOES contacted date/time: Control Number: Spoke to:

G. RECOMMENDED FOLLOW-UP ACTIONS TO PREVENT FUTURE OCCURRENCES

CURRENT PM FREQUENCY: DATE OF LAST PM:

RECOMMENDED ACTIONS: ☐ CCTV ☐ RE-RUN CCTV ☐ CHANGE CLEANING SCHEDULE
☐ REPAIR LINE SEGMENT ☐ REPLACE LINE SEGMENT ☐ OTHER (describe):

NOTES:

Place completed form in Sewer Backup Envelope and follow routing instructions.

Sewer System Supervisor

1. **Complete the following information:**

   Title: _____

   Name: _____

   Phone: _____

   Today's Date: _____

2. **Copy the items listed below and retain for internal archiving purposes.**

3. **Place the originals back in the Backup Response Envelope and forward envelope with original forms to the Sewer Operations Manager:**

   - ☐ **Form BP-4: Declination of Sewage Cleaning Services Form**
   - ☐ **Form BP-5: First Responder Form**
   - ☐ **Form BP-6: Lateral TV Report**
   - ☐ **Form BP-7: Sanitary Sewer Overflow Report**
   - ☐ **Form BP-8: Claims Submittal Checklist** *(this form)*
   - ☐ **All photos taken** *(hardcopy or electronic)* and description text and details added to photos
   - ☐ **Digital photos downloaded to server** *(provide link)*:
   - ☐ **Any other information you feel is important in this claim**

4. **Complete Form BP-9: Collection System Failure Analysis**

Sewer System Supervisor or Other Reporting Authority

Go to Regulatory Notifications Packet and make all appropriate notifications.

Sewer Operations Manager

1. **Verify that package is complete**
2. **Forward package to Accounting Manager.**

Accounting Manager

1. **Verify claims packet is complete.**
2. **Notify Travelers:**

   Latham Street Suite 201
   Riverside, CA 92501
   (951) 788-8500

To be completed by the Sewer System Supervisor or Sewer Operations Manager

Incident Report #		Prepared By	
SSO/Backup Information			
Event Date/Time	Address		
Volume Spilled	Volume Recovered		
Cause(s)			
Summary of Historical SSOs/Backups/Service Calls/Other Problems			
Date	Cause(s)	Date Last Cleaned	Crew
Records Reviewed By		Record Review Date	
Summary of CCTV Information			
CCTV Inspection Date		Inspection Tape Name/Number	
CCTV Inspection Tape Reviewed By		CCTV Review Date	
Observations			

Recommendations	
	No Changes or Repairs Required
	Maintenance Equipment
	Maintenance Frequency
	Repair (Location and Type)
	Add to Capital Improvement Rehabilitation/Replacement List: ☐Yes ☐ No
Sewer Systems Supervisor Review Date	
Sewer Operations Manager Review Date	

Jurupa Community Services District
Overflow Emergency Response Plan

Customer Service Packet

Contents:

Form	Form Number
Customer Information Letter	CS-1
Claim Form	-2
Sewer Spill Reference Guide	pamphlet

Instructions:

1. Review the Customer Information letter to determine actions that need to be taken immediately.
2. See the Customer Information letter for information about filing a claim.
3. Review the Sewer Spill Reference Guide pamphlet.

If you have any questions contact:

Regarding Sewer Issues: Sewer Operations Manager at (951) 685-7434 ext. 107
Regarding Submitting a Claim for Damages: Accounting Manager (951) 685-7434

This packet provided by: _____ **Phone:** _____

Paquete informativo del servicio al cliente

Contenido:

Formulario	Número de formulario
Carta informativa para el cliente	CS-1
Guía de referencia sobre desbordes cloacales	folleto

Instrucciones:

1. Analice la carta informativa para el cliente a fin de determinar las medidas que se deben tomar de manera inmediata.
2. Consulte la carta informativa para el cliente a fin de obtener información sobre cómo presentar un reclamo.
3. Analice el folleto de la Guía de referencia sobre desbordes cloacales.

En caso de preguntas, comuníquese con:

Para temas cloacales: Gerente de Operaciones de Alcantarilla, llamando al (951) 685-7434

Para presentar un reclamo por daños: Gerente de Contabilidad, llamando al (951) 685-7434

Este paquete suministrado por: _____ **Teléfono:** _____

Print on 6” x 9” envelope

Sanitary Sewer Backup Response Packet

Customer Information Regarding Sewer Backup Claims

CS-1

Dear Resident:

We recognize that sewer back flow incidents can be stressful and require immediate response when all facts concerning how an incident occurred are unknown. Rest assured that we do all we can to prevent this type of event from occurring. Nevertheless, occasionally tree roots or other debris in the sewer lines cause a backup into homes immediately upstream of the blockage. At this time the District is investigating the cause of this incident.

If the District is found to be responsible for the incident, we are committed to cleaning and restoring your property, and protecting the health of those affected during the remediation process.

The cleaning contractor provided by the District has been selected because of their adherence to established protocols that are designed to assure all parties thorough, cost-effective and expeditious cleaning services. You also have the right to select your own cleaning contractor, but the District does not guarantee payment of fees/expenses incurred and reserves the right to dispute fees/expenses deemed not usual and customary.

If you wish to discuss this matter, please contact the Sewer Operations Manager at (951) 685-7434 ext. 107. If you wish to submit a claim for damages, please complete the enclosed claim form and submit it to the Accounting Manager at 11201 Harrel Street, Jurupa Valley, CA 91752.

Claims against the District must comply with the California Government Code Sec. 910-913.2. The Accounting Manager has the responsibility for processing any claims for damages that are submitted and can be reached at (951) 685-7434.

What you need to do now:

The District has prepared this brief set of instructions to help you minimize the impact of the loss by responding promptly to the situation.

- Do not attempt to clean the area yourself, let the cleaning and restoration company handle this.
- Keep people and pets away from the affected area(s).
- Turn off all appliances that use water.
- Turn off heating/air conditioning systems.
- Do not remove items from the area – the cleaning and restoration company will handle this.
- If you had recent plumbing work, contact your plumber or contractor and inform them of this incident.
- If you intend to file a claim, do so as soon as practical in order to have your claim considered.
    - **Please Note:** The general provisions for the filing of claims against public entities are contained in Part 3 (*commencing at Section 900)* of Division 3.6 of the Government code. Certain claims are not governed by these provisions, including tax and assessment matters, liens, employee compensations, workers' compensation, unemployment compensation, welfare, securities, and others.
    - The form and contents of a claim are specified by Section 910, et seq. A claim relating to a cause of action for death or for injury to person or to personal property or growing crops shall be presented not later than six months after accrual of the cause of action; other claims shall be presented within one year (*Section 911.2).*
    - Claims are to be presented by delivery or mailing to the Accounting Manager at 11201 Harrel Street, Mira Loma, CA 91752. *(Section 915).*
    - It is suggested that the claimant refer to claims law and be fully advised with respect to the exceptions and further provisions contained therein.

Important Legal Notice: For your protection, read carefully, obtain a reliable translation, and/or consult your attorney.

Jurupa Distrito de Servicios Comunitarios
Desbordamiento del Plan de Respuesta a Emergencias

Paquete informativo de la respuesta ante desbordes

Información del cliente sobre reclamos por desbordes cloacales

CS-1 S

Estimado Vecino:

Reconocemos que los incidentes provocados por el reflujo de aguas cloacales pueden ser estresantes y exigen una respuesta inmediata cuando se desconocen los hechos relacionados con la causa del incidente. Tenga la seguridad de que hacemos todo lo posible para evitar que sucedan este tipo de incidentes. Sin embargo, las raíces de los árboles u otros desechos que se encuentran en las cañerías principales del sistema cloacal provocan, de vez en cuando, un desborde en el interior de las viviendas justo arriba de la obstrucción. En este momento, el Distrito está investigando la causa de este incidente.

Si se determina que el Distrito es responsable del incidente, nos comprometemos a limpiar y restaurar su propiedad, así como a proteger la salud de aquellas personas que hayan sido afectadas durante el proceso de reparación.

La empresa de servicios de limpieza que provee el Distrito fue seleccionada debido a su cumplimiento con los protocolos establecidos, los que se diseñaron para garantizar servicios de limpieza cuidadosos, expeditivos y de bajo costo a todas las partes. También tiene derecho a elegir su propia empresa de servicios de limpieza; sin embargo, el Distrito no garantiza el pago de cargos y/o gastos que incurra y se reserva el derecho a objetar los cargos y/o gastos que considere que no son habituales.

Si desea discutir este tema, por favor comuníquese con el Gerente de Operaciones de alcantarillado al (951) 685-7434 ext. 107. Si desea presentar una reclamación por daños y perjuicios, por favor complete el formulario de solicitud adjunto y enviarlo a la Gerente de Contabilidad en 11201 Harrel Street, Mira Loma, CA 91752.

Los reclamos presentados contra la Ciudad deben cumplir con las disposiciones de los artículos 910-913.2 del Código del Gobierno de California (*California Government Code Sec. 910-913.2*). El Gerente de Contabilidad tiene la responsabilidad de procesar cualquier reclamo por daños y perjuicios que se le presenten y se puede llegar al (951) 685-7434.

Lo que necesita saber en este momento:

El Distrito redactó esta breve serie de instrucciones para ayudarlo a minimizar el impacto de la pérdida respondiendo de manera inmediata ante la situación.

- No intente limpiar la zona usted mismo; permita que la empresa de limpieza y restauración se encargue de esto.
- Mantenga a las personas y a las mascotas alejadas de la(s) zona(s) afectada(s).
- Apague todos los aparatos que utilicen agua.
- Apague los sistemas de calefacción y/o aire acondicionado.
- No quite los elementos que se encuentran en la zona; la empresa de limpieza y restauración se encargará de esto.
- Si recientemente se realizaron obras de plomería, comuníquese con su plomero o servicio de plomería e infórmele sobre este incidente.
- Si tiene pensado presentar un reclamo, hágalo lo antes posible para que éste sea tenido en cuenta.
    - **Observación:** Las disposiciones generales que rigen la presentación de reclamos contra organismos públicos están incluidas en la Parte 3 (*que comienza en el Artículo 900)* del Capítulo 3.6 del Código del Gobierno (*Division 3.6 of the Government code*). Existen determinados reclamos que no se rigen por estas disposiciones, incluyendo los asuntos relacionados con los impuestos y las tasaciones, los gravámenes, la remuneración para los empleados, las indemnizaciones de los trabajadores, el subsidio de desempleo, la asistencia social, los títulos y demás.
    - La forma y el contenido del reclamo se especifican en el Artículo 910 y siguientes. Un reclamo que esté relacionado con la causa de acción por muerte o lesión de una persona o de los bienes personales o de la cosecha en crecimiento deberá presentarse antes de que se cumplan los seis meses posteriores a dicha causa de acción; los demás reclamos deberán presentarse dentro del período de un año (*Artículo 911.2).*
    - Los reclamos deberán presentarse ante a la Gerente de Contabilidad *(Artículo 915),* en persona o por correo.
    - Se sugiere que el reclamante haga referencia a la legislación sobre reclamos y que usted esté completamente asesorado sobre las excepciones y demás disposiciones incluidas en dicha legislación.

Aviso legal importante: Para su protección, lea atentamente el material, obtenga una traducción confiable y/o hable con su abogado.

CLAIM FORM

11201 Harrel Street
Jurupa Valley, CA 91752
www.jcsd.us

Phone (951) 685-7434
Fax (951) 685-1153
info@jcsd.us

PLEASE RETURN TO: ACCOUNTING MANAGER

COMPLETE THE FOLLOWING, ADDING ADDITIONAL SHEETS IF NECESSARY:

1. PRINT CLAIMANT'S NAME: _____
2. PRINT CLAIMANT'S ADDRESS: _____
   (Street or P.O Box Number, City, State, Zip Code)

_____

3. AMOUNT OF CLAIM $ _____(Attach copies of bills/estimates)
4. PRINT ADDRESS TO WHICH NOTICES ARE TO BE SENT IF DIFFERENT FROM LINE 2:

_____

(Street, P.O Box Number, City, State, Zip Code)

5. DATE OF INCIDENT: _____ TIME OF INCIDENT: _____
   LOCATION OF INCIDENT: _____
   _____
6. DESCRIBE THE INCIDENT OR ACCIDENT INCLUDING YOUR REASON FOR BELIEVING THAT THE DISTRICT IS LIABLE FOR YOUR DAMAGES (Attach additional sheets if necessary)
   _____
   _____
   _____
7. DESCRIBE ALL DAMAGES WHICH YOU BELIEVE YOU HAVE INCURRED AS RESULT OF THE INCENT (Attach additional sheets if necessary)
   _____
   _____
   _____
8. NAME (S) OF PUBLIC EMPLOYEE(S) CAUSING THE DAMAGES YOU ARE CLAIMING:
   _____
   _____

_____ _____

SIGNATURE OF CLAIMANT DATE

Any person who, with intent to defraud, presents any false or fraudulent claim may be punished by imprisonment or fine or both.

(**Note: Claims must be filed within 180 days of incident**. See Government Code Section 900 et seq.)

OVERFLOW PACKET

For pre-assembled packets contact DKF Solutions Group at 707.373.9709 or kpatzer@dkfsolutions.com

In the event of a **Sanitary Sewer Overflow**
READ THIS FIRST

☐ **Check here if you believe that fats, oils and/grease (FOG) caused or contributed to the SSO.**

Instructions	Chain of Custody
Collections Crew: 1. Open this envelope. 2. Follow the instructions on the Overflow Response Flowchart 3. If Category 1 SSO greater than or equal to 1,000 gallons, contact the Sewer Operations Manager or Sewer System Supervisor to notify CalOES. 4. Reference the SMART Field Guide as necessary 5. Complete the Chain of Custody record (right) and forward this packet to the Sewer System Supervisor.	Print Name: _____ Initial: _____ Date: _____ Time: _____
Sewer System Supervisor: 1. Open this envelope. Review forms. 2. Complete the Regulatory Notifications Packet. 3. Archive this packet and all other information regarding this overflow incident according to District policy. 4. Debrief using the Collection System Failure Analysis Form.	Print Name: _____ Initial: _____ Date: _____ Time: _____

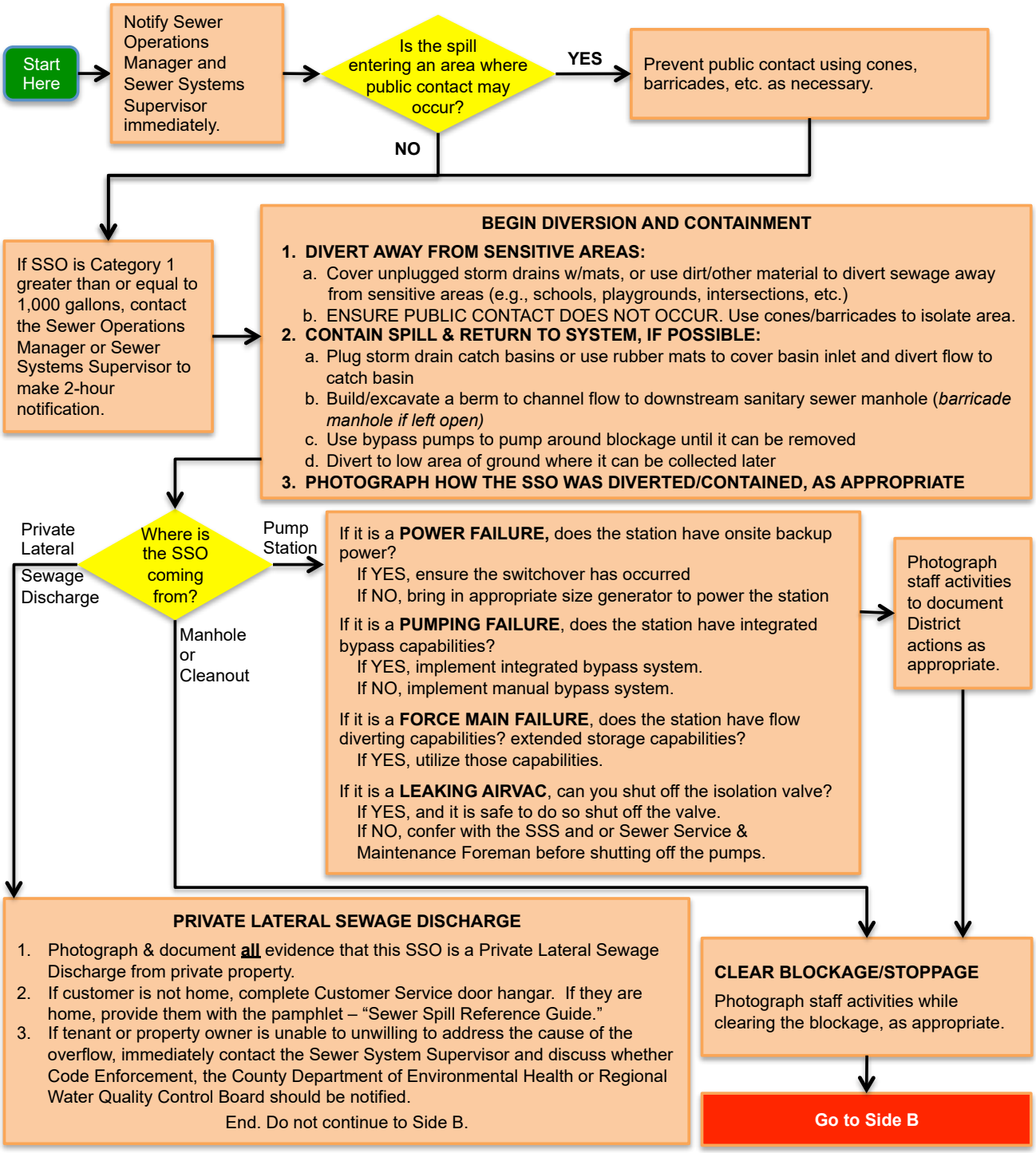
To have receiving waters sampled:	**Contact:**	**Telephone:**
During business hours	Source Control Supervisor	(951) 685-7434 ext. 173
After business hours	Source Control Supervisor	(951) 685-7434
For any media requests:	Community Affairs Officer	(951) 685-7434

Jurupa Community Services District
Sewer Overflow and Backup Response Plan

Overflow Emergency Response Plan

Overflow Response Flowchart

OP-1
Side A



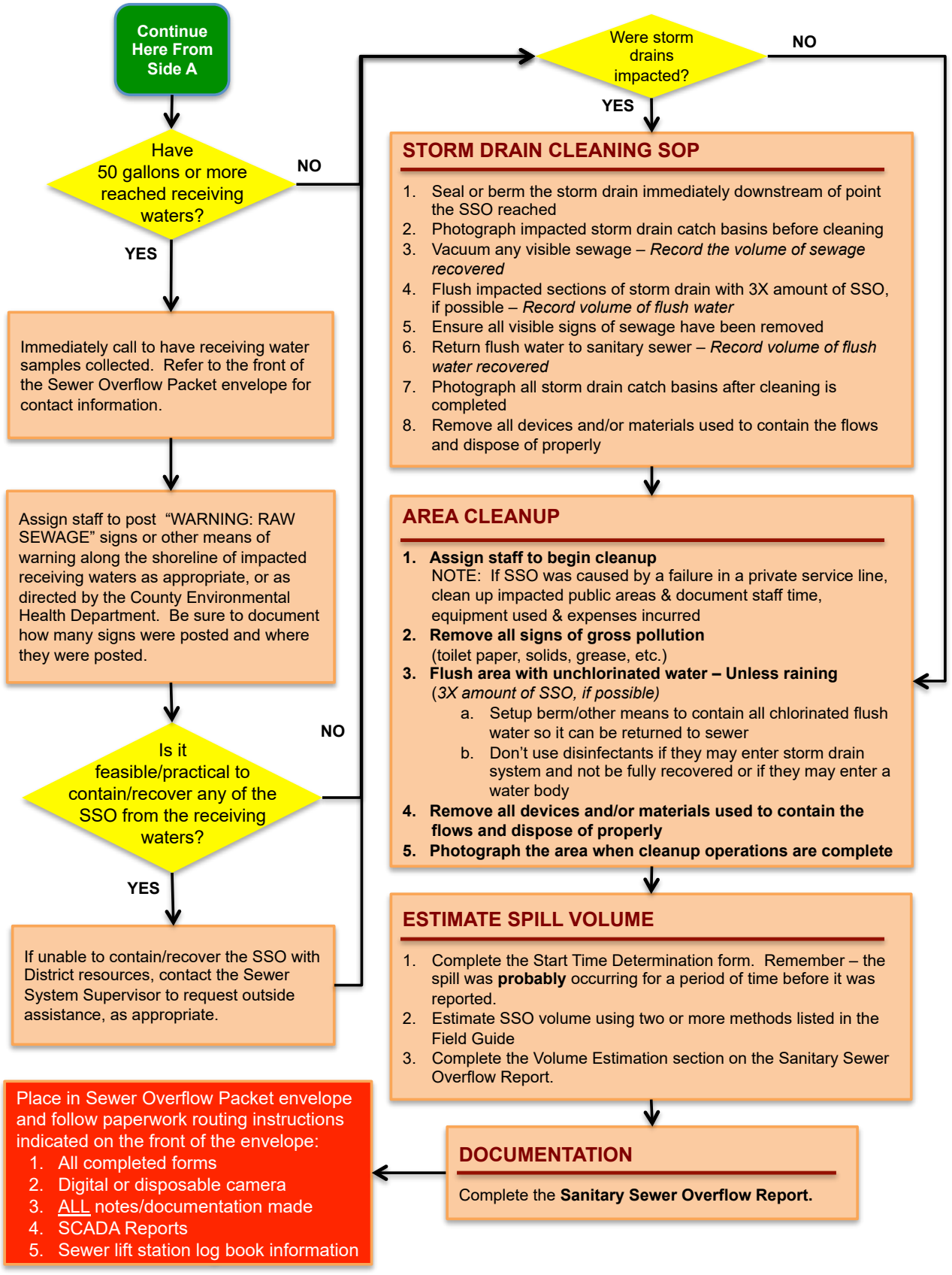
MEDIA AND PUBLIC RELATIONS GUIDELINES:

Exercise caution in contacts with the public or media when you respond to a spill. Any information you provide or statements you make may become pertinent in the event of possible court action, it is important to **AVOID THE FOLLOWING**:

- Giving out the wrong information including providing incorrect facts about a company or other agency
- Making accusations against customers, businesses or other agencies
- Speculating about the situation you are responding to

Be courteous and attempt to provide accurate information to questions within the limits above. In some cases, it may be appropriate to say that we do not have any information, or to delay answering a question and then to say when an answer might be available.

In most cases, refer media requests to the media coordinator indicated on the front of the Sewer Overflow Packet envelope.



INSTRUCTIONS: Complete all items *EXCEPT* those that are shaded gray

Spill Category *(check one)*:

- ☐ Category 1: Discharge of untreated or partially treated wastewater of any volume resulting from a sanitary sewer system failure or flow condition that either (1) Reaches surface water and/or drainage channel tributary to a surface water; OR (2) Reached a Municipal Separate Storm Sewer System (MS4) and was not fully captured and returned to the sanitary sewer system or otherwise captured and disposed of properly.
- ☐ Category 2: Discharge of untreated or partially treated wastewater greater than or equal to 1,000 gallons resulting from a sanitary sewer system failure or flow condition that either (1) Does not reach surface water, a drainage channel, or an MS4, OR (2) The entire SSO discharged to the storm drain system was fully recovered and disposed of properly.
- ☐ Category 3: All other discharges of untreated or partially treated wastewater resulting from a sanitary sewer system failure or flow condition
- ☐ Private Lateral Sewer Discharge

Describe in detail the basis for choosing the spill category:

☐ **IMMEDIATE NOTIFICATION: If this is a Category 1 spill greater than or equal to 1,000 gallons discharged to surface water or spilled in a location where it probably will be discharged to surface water, notify CalOES within 2 hours at (800) 852-7550.**

A. SPILL LOCATION

Spill Location Name:		
Latitude Coordinates:	Longitude Coordinates:	
If multiple appearance points, use the GPS coordinates for the location of the SSO appearance point closest to the failure point/blockage.		
Street Name and Number:		
Nearest Cross Street:	City:	Zip Code:
County:	Spill Location Description:	

B. SPILL DESCRIPTION

Spill Appearance Point (check one or more): ☐ Building/Structure ☐ Force Main ☐ Gravity Sewer ☐ Pump Station ☐AirVac or Blow-off ☐ Other Sewer System Structure *(i.e. cleanout)* ☐ Manhole- Structure ID#: ☐ Other *(specify):*

Did the spill reach a drainage channel and/or surface water? ☐ Yes (*Category 1)* ☐No

If the spill reached a storm drain, was it fully captured and returned to the Sanitary Sewer? ☐ Yes ☐No (*Category 1)*

Was this spill from a private lateral? ☐ Yes ☐No If YES, name of responsible party:

Discharged into: ☐Surface water ☐Waters of the state ☐Drainage channel ☐Pond ☐Stream ☐River ☐Catch basin ☐Lined channel ☐Unlined channel ☐Separate storm drain ☐Paved surface ☐Unpaved surface ☐Building/structure ☐Street/curb/gutter ☐Other:
Provide name(s) of affected drainage channels, etc.:

Total Estimated spill volume *(in gallons)*: gallons

Est. volume that reached a separate storm drain that flows to a surface water body:	gal	Recovered:	gal
Est. volume that reached a drainage channel that flows to a surface water body:	gal	Recovered:	gal
Est. volume discharged directly to a surface water body:	gal	Recovered:	gal
Est. volume discharged to land:	gal	Recovered:	gal

Calculation Methods: ☐Eyeball ☐Photo Comparison ☐Upstream Connections ☐Area/Volume ☐Lower Lateral ☐Other (describe):

NOTE: Attach all Spill Volume Estimation documentation including calculations and summary.

C. SPILL OCCURRING TIME

Estimated spill start date:	Estimated spill start time:
Date spill reported to sewer department:	Time spill reported to sewer crew:
Date sewer crew arrived:	Time sewer crew arrived:
Who was interviewed to help determine start time?	
Estimated spill end date:	Estimated spill end time:

NOTE: Attach detailed start time determination documentation.

D. CAUSE OF SPILL

Location of Blockage: ☐ Main ☐ Lateral ☐Private Lateral ☐M/H or Vault ☐AIRVAC or blow-off ☐Other:

SSO cause(s) *(check all that apply)*:
☐ Debris/Blockage ☐ Flow exceeded capacity ☐Grease ☐ Operator error ☐ Roots
☐ Pipe problem/failure ☐ Pump station failure ☐ Rainfall exceeded design ☐ Vandalism ☐ Inflow/infiltration
☐ Animal carcass ☐ Electrical power failure ☐ Bypass ☐ Pressure Bypass ☐ Debris from laterals
☐ Construction Debris ☐ Contractor error ☐ Flow-through Bypass (inside M/H)
☐ Other (specify):

Diameter (in inches) of pipe at point of blockage/spill cause (if applicable):

Sewer pipe material at point of blockage/spill cause (if applicable):

Estimated age of sewer asset at the point of blockage or failure (if applicable):

Description of terrain surrounding point of blockage/spill cause: ☐ Flat ☐ Mixed ☐ Steep ☐ Under body of water

E. SPILL RESPONSE

Spill response activities (check all that apply): ☐ Cleaned up ☐ Contained all/portion of spill ☐ CCTV inspection ☐ Restored flow
☐ Returned all/portion of spill to sanitary sewer ☐Other (specify):

Spill response completed (date & time):

Visual inspection result of impacted waters (if applicable):

Any fish killed? ☐ Yes ☐ No Any ongoing investigation? ☐ Yes ☐ No

Were health warnings posted? ☐ Yes ☐ No If yes, provide health warning/closure posting/details:

Were samples of impacted waters collected? ☐ Yes ☐ No
If YES, select the analyses: ☐ DO ☐ Ammonia ☐ Bacteria ☐ pH ☐ Temperature ☐ Other:

Recommended corrective actions: (check all that apply and provide detail)
☐ Clean line again ASAP:
☐ CCTV:
☐ Re-CCTV:
☐ Additional work:
☐ Cleaning schedule change:
☐ Cleaning method change:
☐ Fog investigation:
☐ Repair line segment:
☐ Replace line segment:
☐ Repair or replace M/H, C/O or vault
☐ R&R AirVac or blow-off
☐ Additional comments:

List all agency personnel involved in the response including name, title and their role in the response:

Name	Title	Role

F. NOTIFICATION DETAILS (if applicable)

CalOES contacted date/time: Control Number: Spoke to:

G. RECOMMENDED FOLLOW-UP ACTIONS TO PREVENT FUTURE OCCURRENCES

CURRENT PM FREQUENCY: DATE OF LAST PM:

RECOMMENDED ACTIONS: ☐ CCTV ☐ RE-RUN CCTV ☐ CHANGE CLEANING SCHEDULE
☐ REPAIR LINE SEGMENT ☐ REPLACE LINE SEGMENT ☐ OTHER (describe):

NOTES:

Place completed form in Sewer Backup Envelope and follow routing instructions.

Sanitary Sewer Overflow Response
Collection System Failure Analysis

OP-3

To be completed by the Sewer System Supervisor or Sewer Operations Manager

Incident Report #		Prepared By	
SSO/Backup Information			
Event Date/Time	Address		
Volume Spilled	Volume Recovered		
Cause(s)			
Summary of Historical SSOs/Backups/Service Calls/Other Problems			
Date	Cause(s)	Date Last Cleaned	Crew
Records Reviewed By		Record Review Date	
Summary of CCTV Information			
CCTV Inspection Date		Inspection Tape Name/Number	
CCTV Inspection Tape Reviewed By		CCTV Review Date	
Observations			

Recommendations	
	No Changes or Repairs Required
	Maintenance Equipment
	Maintenance Frequency
	Repair (Location and Type)
	Add to Capital Improvement Rehabilitation/Replacement List: ☐Yes ☐ No
Sewer Systems Supervisor Review Date	
Sewer Operations Manager Review Date	

MISC

jurupa
COMMUNITY SERVICES DISTRICT

On (date) _____, at (location)

_____,
we responded to a reported blockage of the sanitary sewer service to your property.

We discovered a blockage in:

- ☐ The JCSD sanitary sewer main and cleared the line. If you are still experiencing sewer trouble after the JCSD main line sewer was cleared, please re-contact our office.
- ☐ Your sanitary sewer lateral, which is your responsibility to maintain.

If you require assistance to clear your lateral you can look in your telephone book under "Sewer Contractors" or "Plumbing Drains & Sewer Cleaning". If you plan to hire a contractor we recommend getting estimates from more than one company. We also recommend hiring an IICRC-certified contractor. Refer to www.iicrc.org.

Jurupa Community Services District representative notes: _____

_____

_____

Jurupa Community Services District Representative:

_____

For questions or comments, please call

Jurupa Community Services District
(951) 685-7434

jurupa
COMMUNITY SERVICES DISTRICT

On (date) _____, at (location)

_____,
we responded to a reported blockage of the sanitary sewer service to your property.

We discovered a blockage in:

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Jurupa Community Services District representative notes: _____

_____

_____

Jurupa Community Services District Representative:

_____

For questions or comments, please call

Jurupa Community Services District
(951) 685-7434

Overflow Emergency Response Plan
Public Posting

DANGER

RAW SEWAGE • AVOID CONTACT

PELIGRO

AGUA CONTAMINADA • EVITE TODO CONTACTO

For more information **Para mas informacion**

Jurupa Community Services District

(951) 685-7434

How a Sewer System Works

A property owner's sewer pipes are called ***service laterals*** and are connected to larger local main and regional trunk lines.
Service laterals run from the connection at the home to the connection with the public sewer. These laterals are the responsibility of the property owner and must be maintained by the property owner.

Is my home required to have a backflow prevention device?

Section 710.1 of the Uniform Plumbing Code (U.P.C.) states: *"Drainage piping serving fixtures which have flood level rims located below the elevation of the next upstream manhole cover or private sewer serving such drainage piping* ***shall*** *be protected from backflow of sewage by installing an approved type of backwater valve."* The intent of Section 710.1 is to protect the building interior from mainline sewer overflows or surcharges.

Additionally, U.P.C. 710.6 states: *"Backwater valves* ***shall*** *be located where they will be accessible for inspection and repair at all times and, unless continuously exposed, shall be enclosed in a masonry pit fitted with an adequately sized removable cover."*

If you have a sewage spill from your private sewer line that impacts storm drains, waterways or public property, contact:

Jurupa Community Services District
(951) 685-7434

Riverside County
Department of Environmental Health
(951) 358-5316

California Health and Safety Code, Sections 5410-5416 requires:

- No person shall discharge raw or treated sewage or other waste in a manner that results in contamination, pollution, or a nuisance.
- Any person who causes or permits a sewage discharge to any state waters:
  - Must immediately notify the local health agency of the discharge.
  - Shall reimburse the local health agency for services that protect the public's health and safety.
  - Who fails to provide the required notice to the local health agency is guilty of a misdemeanor and shall be punished by a fine (between $500–$1,000) and/or imprisonment for less than one year.

Santa Ana Regional
Water Quality Control Board
(951) 782-4130

Requires the prevention, mitigation, response to, and reporting of sewage spills.

California Governor's Office of Emergency Management (CalOES)
800.852.7550

California Water Code, Article 4, Chapter 4, Sections 13268-13271 & California Code of Regulations, Title 23, Division 3, Chapter 9.2, Article 2, Sections 2250-2260 require:

- Any person who causes or permits sewage in excess of 1,000 gallons to be discharged to state waters shall immediately notify the Office of Emergency Services.
- Any person who fails to provide the notice required by this section is guilty of a misdemeanor and shall be punished by a fine (less than $20,000) and/or imprisonment for not more than one year.

Jurupa COMMUNITY SERVICES DISTRICT

Sewer Spill Reference Guide

Your Responsibilities as a Private Property Owner

Provided to you by:

Jurupa Community Services District

11201 Harrel Street
Jurupa Valley, CA 91752

(951) 685-7434

How do sewage spills happen?

Sewage spills occur when the wastewater in underground pipes overflows through a manhole, cleanout, or broken pipe. Most spills are relatively small and can be stopped and cleaned up quickly, but left unattended they can cause health hazards, damage to homes and businesses, and threaten the environment, local waterways, and beaches.

CAUTION!

When trying to locate a sewer problem, never open manholes or other public sewer structures. Only our crews are allowed to open & inspect these structures.

Common causes of sewage spills

- Grease build-up
- Tree roots
- Broken/cracked pipes
- Missing or broken cleanout caps
- Undersized sewers
- Groundwater/rainwater entering the sewer system through pipe defects and illegal connections
- Vandalism

Prevent most sewage backups with a Backflow Prevention Device

This type of device can help prevent sewage backups into homes and businesses. If you don't already have a Backflow Prevention Device, contact a professional plumber or contractor to install one as soon as possible.

Protect the environment!

If you let sewage from your property discharge to a gutter or storm drain, you may be subject to penalties and/or out-of-pocket costs for clean-up and enforcement efforts. A property owner may be charged for costs incurred by agencies responding to spills from private properties.

What to look for:

Sewage spills can be a very noticeable gushing of water from a manhole or a slow water leak that may take time to be noticed. Don't dismiss unaccounted-for wet areas. Look for:

- Drain backups inside the building.
- Wet ground and/or water leaking around manhole lids onto your street.
- Leaking water from cleanouts or outside drains
- Unusual odorous wet areas: sidewalks, external walls, ground/landscape around a building.

The following are indicators of a possible obstruction in your sewer line:

- Water comes up in floor drains, showers or toilets.
- Toilets, showers or floor drains below ground level drain very slowly.
- Water is flowing out of a private clean-out.

What to do if there is a spill:

Immediately notify the Jurupa Community Services District. Our crews locate the blockage and determine if it is in the public sewer; if it is the crew removes the blockage and arranges for cleanup.

If the backup is in your private internal plumbing or in the private service laterals, you are required to immediately:

- Control and minimize the spill by shutting off or not using the water
- Keep sewage out of the storm drain system using sandbags, dirt and/or plastic sheeting
- Call a plumbing professional to clear blockages and make repairs as needed. Look in the yellow pages under "Plumbing Drain & Sewer Cleaning" or "Sewer Contractors."
- Always notify your sewer/public works department or public sewer district of sewage spills.

Spill cleanup inside the home:

For large clean ups, a professional cleaning firm should be contacted to clean up impacted areas, You can locate local firms by looking in the Yellow Pages under "Water Damage" or "Fire Damage." If you hire a contractor, it is recommended to get estimates from more than one company. It is also recommended that you hire an IICRC-certified contractor. Refer to www.iicrc.org. Sometimes, homeowner's insurance will pay for the necessary cleaning due to sewer backups. Not all policies have this coverage, so check with your agent.

If you decide to clean up a small spill inside your home, protect yourself from contamination by observing the following safety measures. Those persons whose resistance to infection is compromised should not attempt this type of clean up.

Other Tips:

- Photograph and/or video all damage
- Keep children and pets out of the affected area until cleanup has been completed.
- Turn off heating/air conditioning systems
- Wear rubber boots, rubber gloves, and goggles during cleanup of the affected area.
- Discard items that cannot be washed and disinfected (such as: mattresses, rugs, cosmetics, baby toys, etc.)
- Remove and discard drywall and insulation that has been contaminated with sewage or flood waters.
- Thoroughly clean all hard surfaces (such as flooring, concrete, molding, wood and metal furniture, countertops, appliances, sinks and other plumbing fixtures) with hot water and laundry or dish detergent.
- Help the drying process with fans, air conditioning units, and dehumidifiers.
- After completing cleanup, wash your hands with soap and water. Use water that has been boiled for 1 minute (allow the water to cool before washing your hands) OR use water that has been disinfected (solution of 1/8 teaspoon of household bleach per 1 gallon of water). Let it stand for 30 min. If water is cloudy, use ¼ teaspoon of household bleach per 1 gallon of water.
- Wash clothes worn during cleanup in hot water and detergent (wash apart from uncontaminated clothes).
- Wash clothes contaminated with sewage in hot water and detergent. Consider using a Laundromat until your onsite wastewater system has been professionally inspected and serviced.
- Seek immediate attention if you become injured or ill.

Spill cleanup outside the home:

- Keep children and pets out of the affected area until cleanup has been completed.
- Wear rubber boots, rubber gloves, and goggles during cleanup of affected area.
- Clean up sewage solids (fecal material) and place in properly functioning toilet or double bag and place in garbage container.
- After cleanup, wash hands with soap and water. Use water that has been boiled for 1 minute (allow to cool before washing your hands) OR use water that has been disinfected (solution of 1/8 teaspoon of household bleach per 1 gallon of water). Let it stand for 30 min. If water is cloudy, use ¼ teaspoon of household bleach per 1 gallon of water.
- Wash clothes worn during cleanup in hot water and detergent (wash apart from uncontaminated clothes).
- Wash clothes contaminated with sewage in hot water and detergent. Consider using a Laundromat until your onsite wastewater system has been professionally inspected and serviced.
- Seek immediate attention if you become injured/ill.

Attachment E6-B: Sewer Department Standard Operating Procedures for Sewer Lift Station Failure

SEWER DEPARTMENT

STANDARD OPERATING PROCEDURES

FOR

LIFT STATION

MALFUNCTIONS

EFFECTIVE DATE:
JUNE 5, 2019

Jurupa Community Services District
Standard Operating Procedures for
Lift Station Malfunctions

Introduction

Jurupa Community Services District (District) owns and operates eleven (11) lift stations of various sizes, flow rates and configurations. Occasionally, malfunctions occur at the lift stations that require a response from the Sewer Department staff. The purpose of this document is to establish standard operating procedures for responding to lift station malfunctions. This document is organized into sections that provide a quick reference guide on how to respond to malfunctions at the District's lift stations.

Notification of Malfunctions

District staff has a number of means by which they may become aware of a malfunction at a lift station.

1) SCADA System Notification via Pager or Email – The District operates a SCADA system that continuously monitors the operation of the District's lift stations. If a malfunction occurs at one of the District's lift stations, two SCADA computers send out concurrent alarms to the District's sewer pagers and Smartphones via the internet and dial-up connections. The pager message provides a detailed text message that identifies the location of the alarm and a description of the alarm condition (i.e. Regional Lift Station: Pump 1 Failure). The District's Sewer System Supervisor, Sewer Foreman, Sewer Pump Maintenance and Sewer Duty Operator are all notified of the alarm condition.
2) SmartCover or Mission Communications Alarm – The lift stations also have an independent remote alarm system that will detect an elevated level in the wetwell or upstream manhole that is indicative of a problem at the lift station. The alarms are sent to the Smartphones and Pagers of the staff that receive SCADA Alarms.
3) Observation of Malfunctions During On-site Inspection – Occasionally an operator may notice malfunctions that have not activated a SCADA alarm. These type of malfunctions may be a vibration in a pump or motor, a leaky pipe or air vac, or excessive packing leakage.
4) Report of Malfunction from Public – Occasionally, the public may report a problem, such as a leak in the street that turns out to be a leaky force main.

Response to Malfunctions

Regardless of the type of malfunction the following procedures should be followed:

1) Notify the Sewer Foreman of the problem. The Foreman will notify the Sewer Supervisor or Sewer Operations Manager immediately if the problem is serious. The Foreman may also consult with the Sewer Pump Maintenance Technician if necessary.
2) Verify the problem. If the notice came from the SCADA, SmartCover or Mission Communications System or from the public, a site visit is warranted.
3) Evaluate the problem. Try to determine the cause and severity of the problem. Determine the resources necessary to resolve the problem and advise the foreman of the resources necessary. It should be noted that each operator must remain within their own expertise level in the evaluation process. The operator must not go beyond a safe operating level. For instance, the operator should not attempt to evaluate an electrical system malfunction unless they have the proper PPE, equipment and training. The operator should not enter any confined spaces until it is safe and they have the staff and equipment to enter following District Confined Space Program procedures.
4) Implement the plan to resolve the malfunction.
5) Test the system to ensure the repairs were effective.
6) Report the repairs verbally and on a written work order.

Types of Malfunctions

There are numerous types of malfunctions that may occur at lift stations; some of the more common types of malfunctions will be addressed here:

1) Power Failures – Power failures are always a potential problem at a lift station and they must be addressed immediately. The District's major operational lift stations, Regional, River Road, Florine, Linares, Clay/Van Buren Lift Stations are all equipped with permanent generators that automatically start in the event of a power failure. The Chandler and Hamner Lift Stations, both standby lift stations, are also equipped with permanent generators. Two lift stations, Lakeside and 44th Street Lift Stations automatically overflow to the downstream sewer in the event of a power failure and require no back-up power. The remaining two lift stations: Sky Country 2, Cliff Valley Lift Stations require portable generators for power when Edison fails. When the power fails at one of these lift stations, the District's Lift Station Power Failure Procedures (attached) must be followed.
2) Electrical System Malfunctions – If the power is on, but the pump or equipment won't start, then an electrical system malfunction may be the cause. The operator is authorized to check the basic controls, such as the position of the Hand/Off/Auto switch, the circuit breakers and overload resets, but is not trained to work on the electrical system. If checking the basic controls does not correct the problem, then a qualified industrial electrician from JCSD Staff or Contractor should be called to the site to evaluate and correct the problem.

3) Pump and Equipment Failures – Pump and equipment failures are also a condition that may occur at lift stations. All of the District's lift stations are designed with a spare pump. For example if one pump can handle the full pumping capacity of the lift station, then two pumps are installed and ready for service. If two pumps are required, then three pumps are installed. Despite this redundancy, it is important that pump malfunctions be corrected in a timely manner. When possible, it is best to replace a pump that may be out of service with a spare unit. For the District's most critical lift stations (high flow), the District attempts to maintain an additional spare motor and pump. When a pump malfunction does occur it is critical that the repairs are completed as soon as possible. Normally, when significant pump failure occurs, the unit is sent to a pump repair shop for repair. District staff repairs minor problems. Staff should refer to equipment operation and maintenance manuals that are kept in the foreman's office for specific instructions on each piece of equipment
4) Sewer Force Main Failures – When a sewer force main or the appurtenances attached to them fail, it is usually an emergency condition, because a Sanitary Sewer Overflow (SSO) is usually involved. Experience and judgment are critical in these situations and the Foreman and Supervisor should provide leadership in the decision making process. Depending on the severity and location of the problem, measures must be taken to correct the problem and minimize the SSO. If the problem is a leaky air vac or blow-off the immediate solution would be to turn-off the valve that supplies the air vac and repair the air vac. If the force main is ruptured, then it may be necessary to shut down the lift station and set-up bypass pumping systems. If a minor leak occurs on the force main it may be best to put a repair band on the pipe until a more permanent repair can be made under planned circumstances. Whatever the solution, care must be exercised to contain and minimize any SSO according to the District's Sanitary Sewer Overflow Emergency Response Procedures.

Appendix

1) Sewer Lift Station Power Failure Procedures
2) Sewer Lift Station Location Summary Table
3) Sewer Lift Station Operational Narrative Descriptions

Jurupa Community Services District
Lift Station Power Failure Procedures
(Portable Generators)

1. Determine if Edison's (SCE) power supply to the lift station has failed.
    - Check to be sure power is off.
    - Check Main Breaker to be sure it has not tripped.
    - Observe surrounding community for power.
2. If power is out, notify SCE of power outage. Phone: 1-800-611-1911
    - Be prepared to give the address of the affected lift station.
        - Sky Country 2 - 5250 Rigel, 91752
        - Cliff Valley – 5645 Cliff Valley, 92509
        - Florine - 3564 Florine, 92509 (Permanent Generator)
        - Linares – 8170 Linares (Permanent Generator)
        - Clay and Van Buren - 6635 Clay (Permanent Generator)
        - Regional Lift - 10124 Limonite (Permanent Generator)
        - River Road Lift Station – 14688 River Road (Permanent Generator)
        - Chandler – 14087 Chandler St. (Standby Lift Station - Permanent Generator)
        - Hamner – 7302 Hamner Ave. (Standby Lift Station - Permanent Generator)
    - Ask SCE representative for estimate of time for restoration of service.
3. If service will be interrupted for an extended period of time, or if no estimate of the length of time until service will be restored can be acquired, prepare to use a stand-by generator.
4. Determine which generator will be necessary to power the affected lift station.
    - 100 KW Generator with Meltric Plug
        - Sky Country 2 Lift Station (Rigel)
        - Cliff Valley Lift Station

5. Check the fuel, oil, and coolant levels before starting the unit. Make sure the main breaker is off and test run the unit before leaving for the job site. Check the trailer lights and connections before traveling on a highway.

6. Upon arrival to the lift station confirm that the power failure is still in progress.

7. Turn the lift station's Main circuit breaker and the individual pump circuit breakers to the off position. Turn the HOA switches to the off position. Unplug the bubbler pumps if the wetwell level is greater than normal, high water levels often burn up bubbler pumps when power is turned back on.

8. Switch the power transfer switch to the "Generator" position.

9. Plug the generator's power plug into the lift station's receptacle.

10. Confirm that the Generator's Voltage / Phase Selector Switch is in the correct position per the chart below:

230 Volt Single Phase	**230 Volt Three Phase**
Cliff Valley LS	Sky Country 2 (Rigel)

11. Confirm that the Generator's Main circuit breaker is off.

12. Start the generator using the following procedure:
    1. Turn the key to the "Preheat" position until the "Preheat Indicator" glows red.
    2. Turn the key to the start position until generator starts.
    3. Allow the generator to idle at least 2 minutes to warm-up and gain oil pressure.
    4. After warm-up pull "Speed Control Handle" and engage in "Run" position.
    5. Confirm that the voltage is at the proper level and fine tune it as necessary using the "Voltage Adjust" knob. **Caution: Never adjust the "Voltage/Phase Selector Switch" while generator is running.**

13. Turn the generator's Main circuit breaker on.

14. Turn the lift station's Main circuit breaker on.

15. Turn one pump circuit breaker on. Pump may start on float switch system. If not, turn the Pump's HOA switch to the "Hand" position.

16. Check the operation of the generator and pumps. Check the amount of Amps the lift station is using on the Generator's Amp Meter.

17. If the generator is working good and a second pump needs to be started turn the second pump's circuit breaker on and start the pump in "Hand". Recheck the generator's operation.

18. Once the wetwell returns to a normal operating level (by visual inspection) the bubbler pumps can be plugged in again and the pump's HOA switches turned to the "Auto" position.

19. When SCE restores power to the lift station confirm with them the repairs are complete and no further interruptions of service are expected.

20. After confirming that SCE's power supply is reliable begin the process of transferring power back to SCE's supply. Follow the following procedure:

1. Turn the pump HOA's to the "Off" position.
2. Turn the pump circuit breakers off.
3. Turn the lift station's main circuit breaker off.
4. Turn the generator's main circuit breaker off.
5. Return the generator to the "Idle" position. **Do Not Turn Off!**
6. Switch the lift station's transfer switch to "SCE".
7. Turn lift station's main circuit breaker on.
8. Turn pump circuit breakers on.
9. Turn pump HOA switches to Auto.
10. Check lift station for proper operation.

21. After a minimum of 5 minutes at idle speed, turn the generator off.

22. Unplug the generator's power cord from the lift station and store it properly.

23. Secure the lift station and return the generator to Headquarters. Check fuel, oil and coolant before storing the unit for future use.

Jurupa Community Services District

Lift Station Descriptions

Riverside Area Lift Stations

Regional Lift Station – The Regional pumps approximately 2.85 MGD of wastewater from the Riverside Treatment Zone to the City of Riverside Treatment Plant. The Lift Station has three dry- well type pumps that individually pump 2,600 GPM, or 3,500 GPM with two pumps running. One pump is used as a standby pump. The facility has an emergency standby generator and a Bioxide infection system for odor and corrosion control.

The Regional Lift Station is also the site of the Regional Lift Station Storage Ponds that have a separate lift station to divert flow to concrete water-proof storage basins during emergency conditions or lift station maintenance. The Pond System is integrated to the Regional Lift Station so the systems can work together to divert and return flows.

Sky Country 2 Lift Station – Sky 2 pumps approximately 0.025 MGD of wastewater from the Sky Country Tract to the gravity sewer collection system that flows to WRCRWA. The station has two submersible type pumps that pump at a rate of 250 GPM. Two pumps alternate operation.

Clay and Van Buren Lift Station - Clay and Van Buren normally pumps approximately 0.010 MGD from the sewer users South of the railroad crossing on Clay Street to the Regional Lift Station Force Main that flows to the City of Riverside Treatment Plant.

Linares Lift Station – Linares normally pumps and gravity flows 0.25 MGD of wastewater to the Collection System on Limonite Avenue or to the Regional Lift Station Force Main. The station has two wet-well type pumps that are rated at 500 GPM and one acts as a stand-by pump.

Lakeside Lift Station – Lakeside is a dual submersible pump type lift station that used to pump wastewater to the Indian Hills Water reclamation Facility, but now pumps to the gravity collection system or overflows to the gravity collection system on Limonite that flows to the Regional Lift Station.

Florine Lift Station - Florine Lift Station pumps approximately 0.025 MGD with two 250 GPM submersible pumps that alternate operation. The station pumps the wastewater from the site to 34th Street where it gravity flows to the Regional Lift Station.

44th Street Lift Station – 44th Street is a small submersible pump lift station that lifts the wastewater over a storm drain channel that significantly conflicted with the grade of the sewer. If the station fails to operate, the wetwell fills up and overflows to the gravity sewer.

Cliff Valley Lift Station – Cliff Valley is a small submersible lift station that serves a small amount of homes in the vicinity and pumps the wastewater to the collection system on 56th Street. The lift station flows are low enough that the flow can be kept up with a few vactor loads per day or setting up a portable generator. Due to the proximity to Pyrite Creek it is important to not allow the lift station to overflow.

Eastvale Area Lift Stations

River Road Lift Station – The River Road Lift Station is the District's newest lift station and is located adjacent to the Western Riverside County Regional Wastewater Authority (WRCRWA) Treatment Plant on River Road. The lift station pumps approximately 2.3 MGD of wastewater from the Eastvale Area to the headworks of the treatment plant. The wastewater flows through a grinder and a diversion structure to the wetwells. The lift station is equipped with three separate self-cleaning wetwells with two vertical turbine pumps each. Currently, only two of the wetwells are equipped with pumps and the third is for future expansion. The lift station is also equipped with an emergency back-up generator and automatic sampling equipment.

Chandler Lift Station – The Chandler Lift Station was originally designed to pump wastewater from the Eastvale area to the Brine Line prior to the completion of the River Road Lift Station. The lift station is equipped with two submersible pumps with a combined capability of 1800 GPM and a back-up generator. Currently, the lift station is in standby mode as an emergency back-up in the event that the River Road Lift Station or the WRCRWA Treatment Plant malfunctions. In the event of an emergency, the wastewater would be diverted into the wetwell by operating the diversion gates in the upstream manhole of the lift station wetwell. The lift station would activate and automatically pump the wastewater to the Brine Line.

Hamner Lift Station – The Hamner Lift Station was originally designed to pump wastewater from the Eastvale area to the Brine Line prior to the completion of the River Road Lift Station. The lift station is equipped with two submersible pumps with a combined capability of 1100 GPM and a back-up generator. Currently, the lift station is in standby mode as an emergency back-up in the event that the River Road Lift Station or the WRCRWA Treatment Plant malfunctions. In the event of an emergency, the wastewater would be diverted to the wetwell by opening the sluice gate on Chandler Street upstream of the wetwell and closing the downstream sluice gate on Chandler Street, West of Archibald. The lift station would activate and automatically pump the wastewater to the Brine Line.

Attachment E6-C: Sanitary Sewer Overflow Standard Operating Procedure for Sampling

SSO SAMPLING PROCEDURES

Should a Sanitary Sewer Overflow (SSO) event occur within any of the wastewater enterprise collection systems, including JCSD, WMWD, WRCRWA, WWRF, and the SAWPA Inland Empire Brine Line, the following sampling procedures are to be initiated:

Liquid Sampling Procedures

Sampling Constituent

Fecal Coliform shall be the sampling constituent for all SSOs originating from the WRCRWA or WWRF collection systems that reach any drainage systems, storm water systems, or any secondary flowing tributary that has the potential for reaching the Sana Ana River. Any samples for SSOs originating from the Brine Line System shall include the pollutants listed in the following table:

After an SSO, samples must be taken and tested for the following parameters:

Pollutant	Method	Holding time	Type of container	Preservation2	Minimum Volume req.
TDS	Field measured	N/A	N/A	N/A	N/A
pH	Field measured	N/A	N/A	N/A	N/A
VSS	160.4	7 days	HDPE	None	1 liter
TSS	SM 2540	7 days	HDPE	None	1 liter
Oil and Grease	SM 5520B	28 days	Amber(grab only)	H_2SO_4	500 ml
BOD	SM 5210B	48 days	HDPE	None	1 liter
COD	SM 5220D	28 days	Glass	H_2SO_4	100 ml
Metals	EPA 200.7	180 days	HDPE	HNO_3	100 ml
Total Coliform1	SM 9221B,9223	8 hours	Plastic, glass3	$Na_2S_2O_3$	100 ml
Fecal Coliform1	SM 9221B,9223	8 hours	Plastic, glass3	$Na_2S_2O_3$	100 ml
Pesticides1	EPA 608	7 days	Amber (Teflon Lined cap)	None	1 liter

1 Sampling of these pollutants only for SSOs on Reach 4D, 4A lower, and 4B lower.

2 All samples must be delivered to lab at a temperature of 4°C.

3 Container must be sterilized.

Sample Locations

For any wastewater spill originating from the sewer collection system or lift station that has a potential for reaching the Santa Ana River, drainage, or any storm water system, the following sample locations shall be used:

Secondary Tributary Locations (storm water channels)

1. Any secondary flowing tributary [that may reach the Santa Ana River] that wastewater flow enters, one (1) up stream sample and one (1)

downstream sample shall be collected as early into the spill event as possible. These samples shall be collected at a distance of 100 feet upstream and downstream from the spill location. ()

2. Staff will need to estimate the flow of the tributary receiving water [make your best guess or measure if possible]. This can be accomplished utilizing the timing of a floating object.
3. Staff will need to determine if any downstream tributaries will enter the sampled tributary within the 100 feet downstream of the event. If this occurs, one (1) sample will need to be collected upstream of each tributary prior to its entering the tributary contaminated by the spill event.
4. A diagram of all sample collection points shall be created that identifies all sample points during the spill event.
5. Samples shall be collected for five (5) consecutive days following the spill event for each sample collection point.

Santa Ana River Locations

1. Any time wastewater flow from a spill event enters the Santa Ana River, one (1) up stream sample and one (1) downstream sample shall be collected as early into the spill event as possible.
2. One (1) sample shall be collected from the spill stream prior to its entering the Santa Ana River.
3. A diagram of all collection points shall be created that identifies all sample points during the spill event
4. Samples shall be collected for five (5) consecutive days following the spill incident for each sample collection point.

Sample Labeling

Documentation of every grab sample collected shall contain the following information:

1. Sample source
2. Sample location
3. Date of collection
4. Name of the sampler

It is also important to identify ambient weather conditions if those conditions may impact the sampling process [wind or rain as examples].

Sample Collection Procedures

SSOs by their very nature can have severe environmental impacts without proper spill management. One of the management tools for mitigating an SSO is the use of sampling to determine the area(s) affected by the spill. This sampling is for microbiological organisms that are typically found in raw sewage (*i.e.*, Fecal

coliform and total coliform). Proper microbiological sampling techniques must be used to ensure that the sample is representative of the contaminated area(s). These samples will be used to develop and implement mitigation measures to insure an effective cleanup is accomplished.

Note: As a precursor to any wastewater sampling, be sure all required vaccinations (such as hepatitis and/or tetanus) are current.

The following steps are required when taking a microbiological sample originating from an SSO:

1**.** Select the sample site(s)**.** The sample point(s) are to be one upstream of the spill, if flowing water is present and others are strategically selected downstream to determine how far the spill has traveled. The samples must be taken from the flowing water and not from pooled water. If entry into the stream, storm drain, storm channel, or waterway is necessary to take the sample, then take the sample from the flowing water that is upstream of the entry point and where the individual is standing. The number of downstream samples will be dependent upon the size of the spill, topography of the spill area, accessibility to sample sites, and employee safety.

If you have any questions about the sample site, please contact your supervisor.

2. Use only the sample bottles provided by the contract laboratory. The E. coli and fecal coliform tests require special sample containers that contain a preservation agent. These bottles **must not** be rinsed prior to sampling. Take several bottles for the sampling event; enough for all upstream and downstream sampling.

3. Use disposable protective gloves. Since the sampling is due to an SSO, disposable latex or nitrile gloves must be worn as an appropriate PPE. The gloves must be changed between every sample. The same pair of gloves cannot be worn for all the samples taken as this increases the risk of contamination and sample invalidation.

4. Facial protection. If there is a risk of the SSO material splashing onto the face during the sample event, then appropriate facial protection must be worn, *e.g.* full-face shield, dust/mist mask, and safety goggles.

5. Do not open the sample bottle until ready to take the sample. Premature opening of the sterile sample bottle could introduce contamination and invalidate the sample.

6. Select a point at the sample site that is representative and well mixed. The main point of the sampling is to determine the extent and impact of the spill and the effects of the cleanup.

7. Uncap the bottle. As you perform this task, hold the container near the base and be sure not to put your finger(s) inside of the sample container or on the underside of the lid. Do not set the sample container down once opened. Any of these actions can contaminate the sample.

8. Obtain the sample**.** Carefully dip the sample container in the water flow and fill the container, leaving about ½ inch of space at the top of the container. Remember do not pre-rinse the container and be careful not to overfill or splash out the contents of the sample container.

9. Replace the cap immediately. Be certain the cap is sealed properly and tightly and check for leaks. If you drop the sample container before the cap is sealed, discard the sample and take another sample with a new sample container using Steps 1-6.

10. Label the sample container. Use a sample label and write:
    a. Date
    b. Time
    c. Location, be as specific as possible
    d. Name of person taking the sample

11. Complete the laboratory submittal form. The form may be completed upon return to the laboratory or completed in the field and submitted to the laboratory with the sample.

12. Place the sample in an ice chest with ice for transportation to the laboratory. The temperature in the ice chest must be maintained below 4˚C, but not to freezing.

APPENDIX H

GLENROY CT INTERTIE WATER PLANS

JURUPA COMMUNITY SERVICES DISTRICT
GLENROY CT INTERTIE WATER PLAN
DISTRICT PROJECT NO. M221003

GENERAL NOTES AND REQUIREMENTS (WATER):

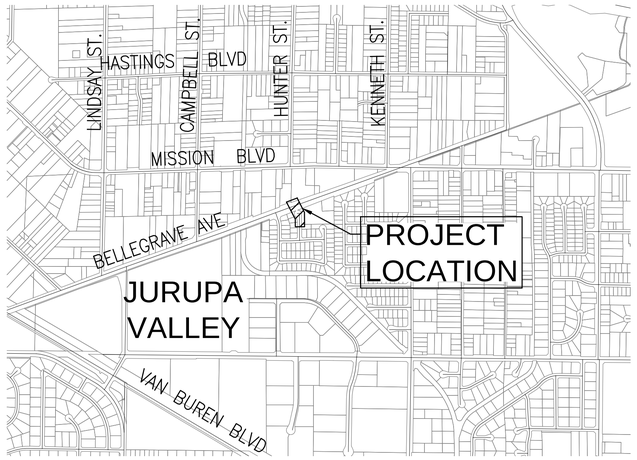
1. THE WATER LINE SHALL BE INSTALLED BY THE CONTRACTOR IN ACCORDANCE WITH JCSD STANDARD PLANS AND SPECIFICATIONS. THE CONTRACTOR SHALL BE APPROVED BY JCSD
2. MINIMUM COVER OVER THE WATER LINE SHALL BE 48–INCHES, UNLESS OTHERWISE APPROVED IN WRITING BY THE DISTRICT.
3. WHEREVER A WATER LINE ENCOUNTERS STORM DRAIN PIPE OR OTHER OBSTRUCTION, THE WATERLINE SHALL CROSS WITH ENOUGH VERTICAL CLEARANCES TO SATISFY THE STATE WATER RESOURCES CONTROL BOARD REQUIREMENTS AND RIVERSIDE COUNTY ENVIRONMENTAL HEALTH DEPARTMENT REQUIREMENTS.
4. ALL STEEL PIPE OUTLETS SHALL BE REINFORCED IN ACCORDANCE WITH JCSD STANDARD DRAWINGS NO. C–6 AND/OR D–6.
5. WHERE SIMULATED WELD BELLS ARE USED FOR LAP–WELDED FITTINGS, THE BELL PLATE THICKNESS SHALL BE 1/4".
6. THE CONTRACTOR SHALL INSTALL SUITABLE THRUST BLOCKS AT EVERY VERTICAL AND/OR HORIZONTAL CHANGE OF DIRECTION IN ACCORDANCE WITH JCSD STANDARD NO. C–1 OR C–2, WHETHER OR NOT SPECIFICALLY CALLED FOR OR SHOWN ON THE PLAN. UPON APPROVAL BY DISTRICT, CONTRACTOR MAY UTILIZE FULLY WELDED JOINTS (IN LIEU OF THRUST BLOCKS) PER JCSD STANDARD NO. C–2A. THRUST RESTRAINT FOR PVC PIPE SHALL BE ACCOMPLISHED WITH THE USE OF RESTRAINED JOINTS PER JCSD STANDARD NO. C–2B, AT LOCATIONS NOTED ON THE DRAWINGS.
7. ALL MATERIALS, TESTING AND INSPECTION OF PIPE SHALL BE IN CONFORMITY WITH THE REQUIREMENTS OF RIVERSIDE COUNTY, AND THE AMERICAN WATER WORKS ASSOCIATION (AWWA) STANDARDS.
8. FAILURE TO MEET ANY OF THE REQUIREMENTS OF JCSD, RIVERSIDE COUNTY, CITY OF JURUPA VALLEY (AS APPLICABLE) AND THE AWWA SPECIFICATIONS WILL BE CAUSE FOR REJECTION.
9. PIPE SHALL BE HANDLED SO AS TO PROTECT PIPE JOINTS, LINING, AND COATING, AND CAREFULLY BEDDED TO PROVIDE CONTINUOUS BEARING AND PREVENT SETTLEMENT. PIPE SHALL BE PROTECTED AGAINST FLOTATION AT ALL TIMES. OPEN ENDS SHALL BE SEALED AT ALL TIMES WHEN CONSTRUCTION IS IN PROGRESS.
10. ALL WELDED STEEL PIPE USED SHALL BE CEMENT MORTAR LINED AND COATED, 10 GAUGE (MINIMUM), UNLESS NOTED OTHERWISE.
11. ALL STEEL BENDS AND FITTINGS SHALL BE CEMENT MORTAR LINED AND CONCRETE COATED AND SHALL BE SHOP FABRICATED PER AWWA C–208–(LATEST EDITION). CONTRACTOR SHALL SUBMIT FABRICATION DRAWINGS FROM A DISTRICT APPROVED FABRICATOR FOR ALL AWWA SHOP FABRICATED FITTINGS TO THE DISTRICT FOR APPROVAL PRIOR TO CONSTRUCTION.
12. FOR HYDRO–STATIC TESTING PURPOSES, ALL WATER PIPES SHALL BE CONSIDERED PRESSURE CLASS 150.
13. ALL APPURTENANCES (I.E. AV, BO, FH, SERVICES, ETC.) THAT REQUIRE RELOCATION SHALL BE RECONSTRUCTED IN ACCORDANCE WITH CURRENT DISTRICT STANDARDS. EACH APPURTENANCE TO BE RELOCATED SHALL BE EVALUATED IN THE FIELD ON A CASE BY CASE BASIS AND RECONSTRUCTED AS DIRECTED BY THE DISTRICT. HOWEVER, UNLESS OTHERWISE APPROVED BY THE DISTRICT, RELOCATED APPURTENANCES SHALL BE RECONSTRUCTED FROM THE MAIN TO THE PROPOSED LOCATION.

ABBREVIATIONS

ABAND	ABANDON
AH.	AHEAD STATION
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE
ASTM	AMERICAN SOCIETY FOR TESTING MATERIALS
AR/AV	AIR RELEASE/ AIR VALVE
A.V.	AIR VALVE
AWWA	AMERICAN WATER WORKS ASSOCIATION
B.C.	BEGIN CURVE
BFV	BUTTERFLY VALVE
BK.	BACK STATION
BLD FLG	BLIND FLANGE
B.O.	BLOW OFF
BOT	BOTTOM
C.G.	CENTER GRADE
C&G	CONCRETE CURB & GUTTER
CTS	CATHODIC TEST STATION
C.O.	CLEAN OUT
CML/CMC	CEMENT MORTAR LINED/CEMENT MORTAR COATED
CPLG	COUPLING
DIP	DUCTILE IRON PIPE
DN	DOWN
E.C.	END CURVE
ELEC.	ELECTRICAL
ESMT.	EASEMENT
EX.	EXIST
FH	FIRE HYDRANT
FLG.	FLANGE OR FLANGED
FL	FLOWLINE
G	GAS LINE OR SERVICE
GPM	GALLONS PER MINUTE
GV	GATE VALVE
HPI	HORIZONTAL POINT OF INTERSECTION
IPS	IRON PIPE SIZE
IRR	IRRIGATION
JCSD	JURUPA COMMUNITY SERVICES DISTRICT
LT	LEFT
MH	MANHOLE
MIN.	MININUM
N.T.S.	NOT TO SCALE
P.C.C	POINT OF COMPOUND CURVE
P.R.C.	POINT OF REVERSE CURVE
PE	POLYETHYLENE
PVC	POLYVINYL CHLORIDE
RED	REDUCER
RJ	RESTRAINED JOINT
RT	RIGHT
R/W	RIGHT OF WAY
S	SEWER MAIN OR HOUSE LATERAL
SD	STORM DRAIN
ST. LT.	STREET LIGHT
SW	CONCRETE SIDEWALK
T	TELEPHONE CABLE OR CONDUIT
U.G.	UNDERGROUND
UP	UP
VCP	VITRIFIED CLAY PIPE
VPI	VERTICAL POINT OF INTERSECTION
W	WATER MAIN OR SERVICE
WSP	WELDED STEEL PIPE

LEGEND

- EXISTING WATER VALVE (GENERAL)
- EXISTING STANDARD FIRE HYDRANT
- EXISTING WATER SERVICE WITH WATER METER
- EXISTING BLOW–OFF
- EXISTING AIR VALVE
- EXISTING MANHOLE
- EXISTING WATERLINE
- PROPOSED WATERLINE
- EXISTING GAS PIPELINE
- EXISTING UNDERGROUND ELECTRIC CABLE
- EXISTING WATERLINE
- EXISTING SEWERLINE
- EXISTING UNDERGROUND TELEPHONE CABLE
- EXISTING STORMDRAIN PIPE
- EXISTING UNDERGROUND TRAFFIC SIGNAL CABLE
- EXISTING CURB AND GUTTER
- EXISTING RIGHT–OF–WAY LINE
- EXISTING PROPERTY/LOT LINE



VICINITY MAP
N.T.S.

PLANS APPROVED BY:
JURUPA COMMUNITY SERVICES DISTRICT

BY: _____ _____
CHRIS BERCH, P.E. – GENERAL MANAGER — DATE

BY: _____ _____
CHANDER LETULLE – DIRECTOR, ENGINEERING AND OPERATIONS — DATE

BY: _____ _____
BENJAMIN ARMEL – DEPUTY DIRECTOR OF OPERATIONS — DATE

BY: _____ _____
EDDIE RHEE, P.E. – ENGINEERING MANAGER — DATE

NOTICE TO CONTRACTOR:

CONTRACTOR TO VERIFY BY POTHOLING THE EXISTING ELEVATION AND HORIZONTAL LOCATION OF ALL POINTS OF CONNECTIONS AND CROSSINGS PRIOR TO CONSTRUCTION. THE ENGINEER MUST BE NOTIFIED OF ANY DISCREPANCY IMMEDIATELY.

THE EXISTENCE AND LOCATIONS OF ALL UNDERGROUND UTILITIES (UTILITY PIPES, STRUCTURES, ETC.) SHOWN ON THESE PLANS (MAIN LINES ONLY – NO SERVICE LATERALS) WERE ASCERTAINED BY A REVIEW OF RECORDS PROVIDED BY THESE MEMBER AGENCIES AND ARE APPROXIMATE. NEITHER THE OWNER NOR THE ENGINEER ASSUMES ANY RESPONSIBILITY FOR UTILITIES NOT SHOWN OR NOT IN THE LOCATION SHOWN.

THE CONTRACTOR IS REQUIRED TO TAKE DUE PRECAUTIONARY MEASURES TO PROTECT THE UTILITY LINES SHOWN AND ANY OTHER LINES NOT OF RECORD OR NOT SHOWN ON THESE PLANS. LOCATIONS OF UTILITIES SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO COMMENCEMENT OF CONSTRUCTION.

THE QUANTITY ESTIMATE SHOWN HEREON IS FOR THE USE OF GOVERNING AGENCIES IN DETERMINING BOND AMOUNTS AND/OR FEES AND IS NOT TO BE USED FOR BID PURPOSES.

GENERAL SURFACE REPAIR NOTES

1. ALL WORK IS TO BE ACCOMPLISHED WITHIN CITY OF JURUPA VALLEY ROAD RIGHT OF WAY ONLY. WHENEVER CONSTRUCTION EXTENDS WITHIN PRIVATE PROPERTY, IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO SECURE PERMISSION FROM ABUTTING PROPERTY OWNERS PRIOR TO STARTING WORK. WRITTEN NOTICE OF APPROVAL IS REQUIRED.
2. CLEATED TRACK LAYING CONSTRUCTION EQUIPMENT & MECHANICAL OUTRIGGERS SHALL NOT BE PERMITTED TO OPERATE ON ANY PAVED SURFACE UNLESS FITTED WITH SMOOTH FACED STREET PADS/RUBBER STREET SHOES. ONLY RUBBER TIRED EQUIPMENT SHALL BE USED IN BACKFILL OPERATIONS IN PAVED AREAS.
3. ALL STREET CROSSINGS SHALL BE CUT IN HALF–STREET SECTIONS TO FACILITATE THE FLOW OF TRAFFIC. UNDER NO CIRCUMSTANCES SHALL WORK BE PERFORMED ON THESE CROSSINGS ON WEEKENDS OR HOLIDAYS, UNLESS OTHERWISE SPECIFIED. ALL TRAFFIC PLATES LEFT MUST BE NON–SLIP RATED PLATES AND RECESSED.
4. OPEN TRENCHES SHALL BE ATTENDED AND PROTECTED BY CONTRACTOR'S PERSONNEL AT ALL TIMES. AT THE CLOSE OF EACH WORK DAY, ALL EXCAVATIONS WITHIN THE PAVED AREAS SHALL BE BACKFILLED, COMPACTED, & SURFACED PAVED WITH TWO INCHES OF SC800 TEMPORARY ASPHALT, UNLESS OTHERWISE APPROVED BY THE CITY. THE CITY MAY ALSO APPROVE PROTECTION OF APPROPRIATE AREAS OF TRENCH BY PLATE BRIDGING AND/OR PROTECTIVE FENCING.
5. THE CONTRACTOR SHALL REMOVE ANY SURPLUS MATERIAL RESULTING FROM BACKFILL/EXCAVATION OPERATIONS FROM THE RIGHT OF WAY AND BROOM CLEAN ALL PAVED SURFACES OF EARTH & OTHER OBJECTIONABLE MATERIALS IMMEDIATELY AFTER BACKFILL & COMPACTION. THE CONTRACTOR SHALL ACCEPT FULL RESPONSIBILITY FOR COMPLYING WILL ALL NDPES LAWS, REGULATIONS, AND REQUIREMENTS.
6. AC CAPS SHALL BE 0.12–FOOT MINIMUM THICKNESS AND SHALL BE PERFORMANCE GRADE (PG) ASPHALT PER RIVERSIDE COUNTY ORDINANCE 461, SECTION 11. ASPHALT DIKES SHALL BE PG 70–10 PAVING ASPHALT, 3/8–INCH MAXIMUM, MEDIUM GRADING.
7. THE CONTRACTOR SHALL INSTALL A SEAL ARMOR COAT CONSISTING OF APPLICATION BINDER & SCREENING FOR ALL PATCH AREAS WITH EXISTING SEAL COAT, APPLIED AS SPECIFIED IN RIVERSIDE COUNTY ORDINANCE 461, SECTION 13. A CHIP SEAL ARMOR COAT CONSISTING OF APPLICATION BINDER AND SCREENING SHALL BE APPLIED FOR ALL PATCH AREAS WITH EXISTING CHIP SEAL COAT, APPLIED AS SPECIFIED IN SECTION 37, CALIFORNIA STANDARD SPECIFICATIONS, LATEST ED.
8. FOG SEAL SHALL BE APPLIED PER RIVERSIDE COUNTY ORDINANCE 461, SECTION 11.1 OVER ALL PATCHED AREAS AS DETERMINED BY THE CITY, GENERALLY FROM CENTERLINE TO LIP OF GUTTER.
9. IF THE EXISTING PAVEMENT ADJACENT TO THE TRENCH IS SCARRED, SPALLED, BROKEN, OR REMOVED DURING CONSTRUCTION, THE CONTRACTOR IS REQUIRED TO REMOVE AND REPLACE THE PAVEMENT IN ACCORDANCE WITH THE PAVEMENT SPECIFICATIONS OF THE PERMIT, AND PLACE A 0.12–FOOT OVERLAY (& SEAL COAT) THE ENTIRE WIDTH OF ONE TRAFFIC LANE. IF THE WORK ENCROACHES OVER MORE THAN ONE LANE, THE ENTIRE WIDTH OF EACH LANE SHALL RECEIVE THE PAVING CAP; ALL AT NO ADDITIONAL COST TO OWNER.
10. SHOULD EXISTING ROLLED BERM OR AC DIKE BE DISTURBED, THE CONTRACTOR SHALL REPLACE AS DIRECTED BY CITY INSPECTOR, IN ACCORDANCE WITH ORDINANCE 461.
11. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO RESTORE ALL TRAFFIC SIGNING AND STRIPING/PAVEMENT MARKINGS DISTURBED AS A RESULT OF CONSTRUCTION. TRAFFIC SIGNING & STRIPING SHALL BE COMPLETED BY THE CONTRACTOR, UNLESS OTHERWISE APPROVED BY THE CITY, WITH ALL INCURRED COSTS BORNE BY THE CONTRACTOR.
12. CONTRACTOR SHALL ADHERE TO ALL ADDITIONAL REQUIREMENTS STATED IN APPLICABLE CITY OF JURUPA VALLEY PERMITS.

SPECIAL CONSTRUCTION NOTES:

1. UNLESS OTHERWISE SPECIFIED OR INSTRUCTED BY THE ENGINEER, THE CONTRACTOR SHALL CONSTRUCT AND INSTALL ALL WATER PIPELINES PER J.C.S.D. STD. DWG. NO. A–1
2. THE EXISTENCE AND LOCATIONS OF ALL UNDERGROUND UTILITIES (UTILITIES, PIPES, STRUCTURES, ETC.) SHOWN ON THE PLANS (MAIN LINES ONLY – NO SERVICE LATERALS) ARE APPROXIMATE AND WERE ASCERTAINED BY A REVIEW OF RECORDS PROVIDED BY UTILITY COMPANIES. NEITHER THE OWNER NOR THE ENGINEER ASSUMES ANY RESPONSIBILITY FOR UTILITIES NOT SHOWN OR NOT IN THE LOCATION SHOWN. THE CONTRACTOR SHALL DETERMINE THE DEPTH AND LOCATION OF UNDERGROUND FACILITIES PRIOR TO THE START OF CONSTRUCTION AND SHALL BE REQUIRED TO TAKE ANY PRECAUTIONARY MEASURES TO PROTECT ALL UTILITIES SHOWN AND/OR ANY OTHER UNDERGROUND UTILITY NOT OF RECORD OR NOT SHOWN ON THE PLANS.
3. THE CONTRACTOR SHALL NOTIFY UNDERGROUND SERVICE ALERT (USA) AT 811 AT LEAST TWO (2) WORKING DAYS PRIOR TO EXCAVATION AND SHALL HAVE ALL UNDERGROUND UTILITIES MARKED.
4. IF THE SURVEY MONUMENTS ARE GOING TO BE DISTURBED, THE MONUMENTS SHALL BE TIED OUT PRIOR TO START OF CONSTRUCTION BY LICENSED LAND SURVEYOR. CONTRACTOR SHALL CONFIRM THAT THE MONUMENTS ARE RESTORED UPON COMPLETION OF WORK IF DISTURBED.
5. ONLY UTILITY MAINS (NO LATERALS OR SERVICES) ARE SHOWN. CONTRACTOR SHALL COORDINATE WITH THE DISTRICT AND ALL OTHER UTILITIES FOR FIELD LOCATION OF SERVICES, INCLUDING SEWER LATERALS, AT NO ADDITIONAL COST TO THE DISTRICT.
6. CONTRACTOR SHALL BE RESPONSIBLE FOR THE SAFETY AND SECURITY OF PROJECT SITE AND FACILITIES PER SPECIFICATIONS.

BENCH MARKS:

NAVD88 BASED ON NGS CONTROL

EV9273
ELEV. 746.240

DESCRIBED BY METRO WATER DISTR SO. CALIFORNIA 1992 PEDLEY, 0.5 MILE (0.8 KM) SOUTH OF THE INTERSECTION OF MISSION BL AND PEDLEY ROAD AT THE SOUTHWEST CORNER OF PEDLEY ROAD AND GALENA ST 70.5FEET WEST OF THE CENTERLINE OF PEDLEY RD AND 63 FEET (19.2 M)SOUTH OF THE CENTERLINE OF GALENA ST 26 FEET (7.9 M) SOUTHEAST OF POWER POLE NUMBER 4053785E AT DRAIN HEADWALL A STANDARD MWDSC 3–1/4 INCH ALUMINUM DISK SET IN TOP OF 7 FOOT (2.1 M) LONG HEADWALL 0.5 FOOT (15.2 CM) NORTH OF SOUTH END.

BASIS OF BEARINGS:

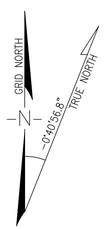
"THE BASIS OF BEARINGS FOR THIS SURVEY IS THE CALIFORNIA STATE PLANE COORDINATE SYSTEM, CCS83, ZONE 6, BASED LOCALLY ON CONTROL STATIONS "CNPP", "EWPP" AND "MLFP", NAD 83(NSRS2007) AS SHOWN HEREON. ALL BEARINGS SHOWN ON THIS MAP ARE GRID. QUOTED BEARINGS AND DISTANCES FROM REFERENCE MAPS OR DEEDS ARE AS SHOWN PER THAT RECORD REFERENCE. ALL DISTANCES SHOWN ARE GROUND DISTANCES UNLESS SPECIFIED OTHERWISE. GRID DISTANCES, MAY BE OBTAINED BY MULTIPLYING THE GROUND DISTANCE BY A COMBINATION FACTOR OF 0.999993872. CALCULATIONS ARE MADE AT POINT 1 WITH COORDINATES OF:
N: 2314294.461', E: 6185297.045', USING AN ELEVATION OF 743.002'

BASIS OF COORDINATES:

CCS NAD83, ZONE VI BASED ON NGS STATIONS "CNPP", "EWPP" & "MLFP" EPOCH 2010.00.

CNPP (DH7053)	EWPP (DH7046)	MLFP (AJ1887)
N: 2,258,381.997	N: 2347786.784	N: 2279468.202
E: 6,149,110.959	E: 6175507.211	E: 6237668.054

CONVERGENCE ANGLE –0°40'56.8" @ PT. 1



PRESSURE ZONE

POTABLE WATER 870–FOOT PRESSURE ZONE

CITY OF JURUPA VALLEY
ENGINEERING DEPARTMENT
REVIEWED BY:

_____ _____
MAMNUEL GONZALES, PE NO. 65195 — DATE
PRINCIPAL CIVIL ENGINEER

811 Know what's below. Call 811 before you dig.

NOTE:
WORK CONTAINED WITHIN THESE PLANS SHALL NOT COMMENCE UNTIL AN ENCROACHMENT PERMIT AND/OR A GRADING PERMIT HAS BEEN ISSUED.

THE PRIVATE ENGINEER SIGNING THESE PLANS IS RESPONSIBLE FOR ASSURING THE ACCURACY AND ACCEPTABILITY OF THE DESIGN HEREON. IN THE EVENT OF DISCREPANCIES ARISING AFTER JCSD APPROVAL OR DURING CONSTRUCTION, THE PRIVATE ENGINEER SHALL BE RESPONSIBLE FOR DETERMINING AN ACCEPTABLE SOLUTION AND REVISING THE PLANS FOR APPROVAL BY JCSD.

MARK	BY	DATE	REVISIONS	APPR.	DATE

ENGINEER

SEAL – ENGINEER

REGISTERED PROFESSIONAL ENGINEER — SINKARO TOE — No. C68607 — CIVIL — STATE OF CALIFORNIA

ALBERT A. WEBB ASSOCIATES
ENGINEERING CONSULTANTS
3788 McCRAY STREET
RIVERSIDE CA. 92506
PH. (951) 686–1070
FAX (951) 788–1256

PREPARED UNDER THE SUPERVISION OF: Sinkaro Toe
DESIGNED BY: WS CHECKED BY: SY
R.C.E. NO.: C68607
DATE: 1/9/2025

BENCHMARK: SEE SHEET 1

SCALE: AS NOTED

JURUPA COMMUNITY SERVICES DISTRICT
JURUPA VALLEY, CALIFORNIA
GLENROY COURT INTERTIE
TITLE SHEET, VICINNITY MAP AND GENERAL NOTES

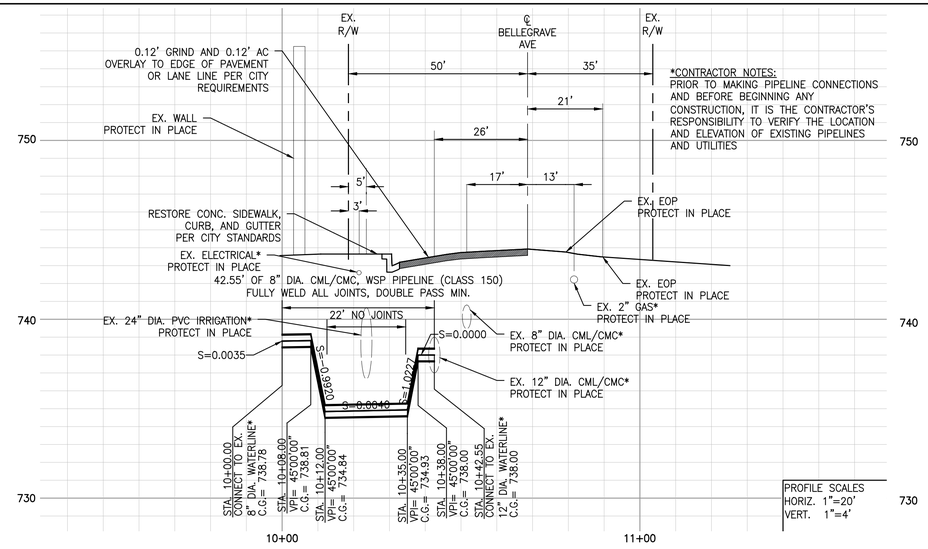
SHEET NO. 1 OF 2 SHEETS

FOR: JCSD | W.O. 22–0035 | D.P.N. M221003

H:\2022\22–0035\DRAWINGS\PLAN SHEETS\22–0035–C–WATER–01.DWG 1/8/2025 6:00:41 PM

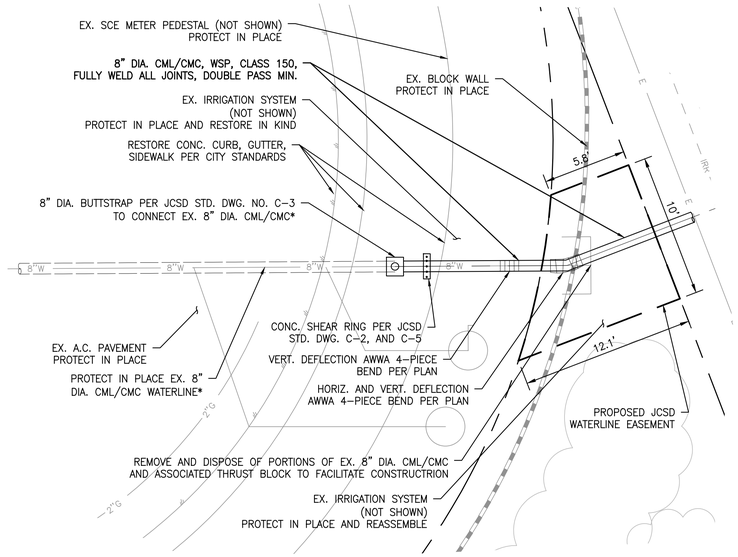
EXISTING IMPROVEMENTS NOTES

1. THERE IS AN EXISTING GARDEN WALL ALONG THE WESTERN PORTION OF THE CUL-DE-SAC FOR APN 170-371-040, PROTECT IN PLACE.
2. FIELD VERIFY THE LOCATION OF THE EXISTING AIR VALVE AND BLOW-OFF.
3. FOR EXCAVATION, TRENCHING AREAS, IF THERE ARE TREES OR SHRUBS, CAREFULLY REMOVE, KEEP ALIVE AND REPLANT.
4. FOR EXISTING FACILITIES SUCH AS BLOW-OFFS, AIR VALVES, ELECTRICAL AND IRRIGATION PEDESTALS, PROTECT ASSOCIATED CONCRETE PADS OR RESTORE IN KIND.



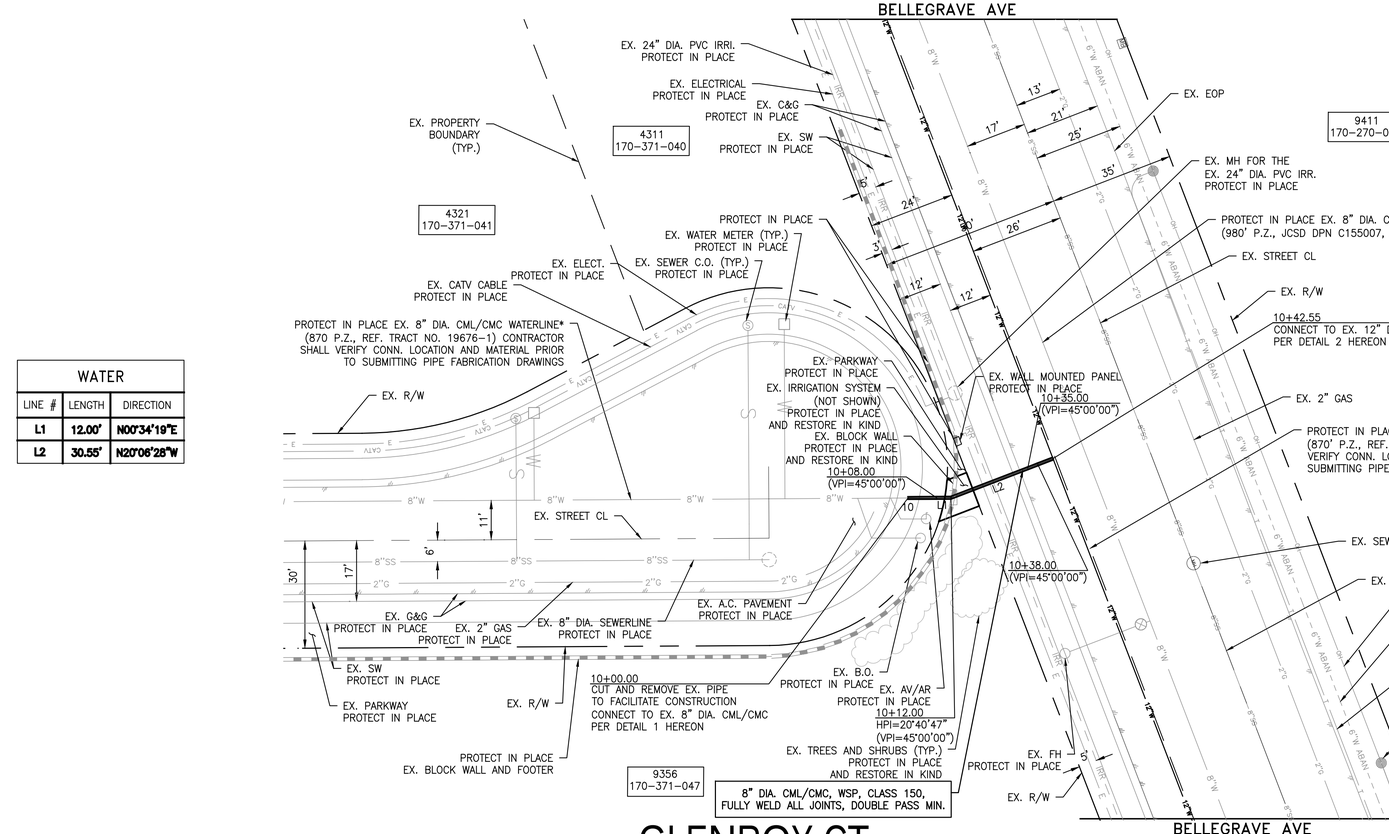
GLENROY INTERTIE PIPE PROFILE

SCALE: 1" = 20'



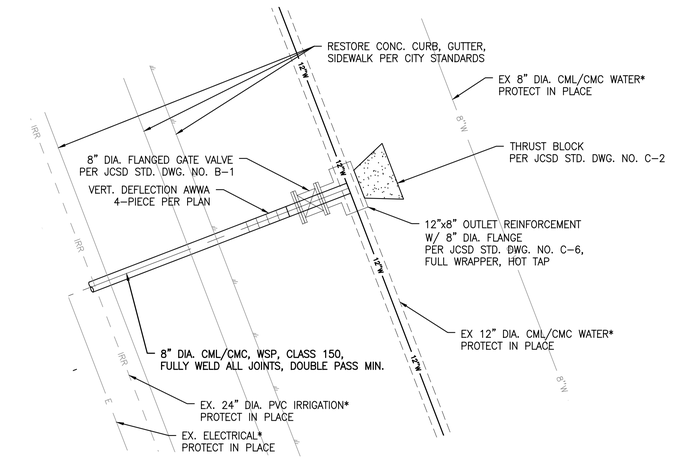
CONNECTION DETAIL 1

SCALE: 1" = 5'



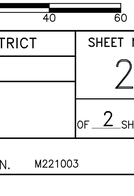
GLENROY CT

WATER		
LINE #	LENGTH	DIRECTION
L1	12.00'	N00°34'19"E
L2	30.55'	N20°06'28"W



CONNECTION DETAIL 2

SCALE: 1" = 5'



1" = 20'
10 0 20 40 60

Know what's below. Call 811 before you dig.

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MARK	BY	DATE	REVISIONS	APPR.	DATE
ENGINEER					

SEAL – ENGINEER

REGISTERED PROFESSIONAL ENGINEER SUNARO YGS No. C68607 CIVIL STATE OF CALIFORNIA

ALBERT A. WEBB ASSOCIATES
ENGINEERING CONSULTANTS
3788 McCRAY STREET
RIVERSIDE CA. 92506
PH. (951) 686-1070
FAX (951) 788-1256

PREPARED UNDER THE SUPERVISION OF: Sunaro Yee

DESIGNED BY: WS CHECKED BY: SY
R.C.E. NO.: C68607
DATE: 1/9/2025

BENCHMARK: SEE SHEET 1

SCALE: AS NOTED

JURUPA COMMUNITY SERVICES DISTRICT
JURUPA VALLEY, CALIFORNIA
GLENROY COURT INTERTIE PLAN, PROFILE AND GENERAL DETAIL

SHEET NO. 2 OF 2 SHEETS

FOR: JCSD
W.O. 22-0035
D.P.N. M221003

H:\2022\22-0035\DRAWINGS\PLAN SHEETS\22-0035-C-WATER-01.DWG 1/8/2025 6:00:41 PM

APPENDIX I

SUBMITTAL REVIEW FORM

JURUPA COMMUNITY SERVICES DISTRICT
ANNUAL WATERLINE REPLACEMENT PROJECT – 44TH STREET AREA, JCSD PROJECT NO. C225100
AND
GLENROY CT INTERTIE WATER PLAN
JCSD PROJECT NO. M221003

SUBMITTAL NO. X (Submittal Title)

Product Manufacturer – Product Name

Submittal Response

- Detailed submittal response description if applicable.

☐ No Exceptions Taken ☐ Make Corrections Noted

☐ Amend and Resubmit ☐ Rejected

Checking is only for general conformance with the design concept of the project and general compliance with the information given in the contract documents. Any action shown is subject to the requirements of the plans and specifications. Contractor is responsible for: dimensions, fabrication process and techniques of construction; coordination of his work with that of all other trades and the satisfactory performance of his work.

Albert A. Webb Associates
3788 McCray St.
Riverside, California 92506
(951) 686-1070

Date X/X/2025 by _____