

DOCUMENT 00 01 01

PROJECT MANUAL

for

HISTORIC OLIVEHURST PIPELINE REPLACEMENT PROJECT

OLIVEHURST PUBLIC UTILITY DISTRICT

Olivehurst Public Utility District

Bid Date: June 21st, 2024

Project No. 2024-001

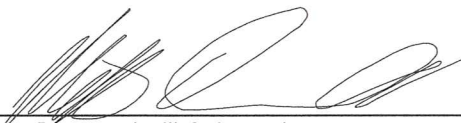
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SEALS PAGE

Engineer's Attest:

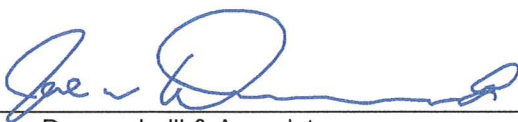
The following Project Manual has been prepared under the supervision of the undersigned, who certifies that they are registered in the State of California.

Prepared by:



Domenchelli & Associates
Matthew Domenchelli, Project Engineer

Reviewed by:



Domenchelli & Associates
Joe Domenchelli, President



Approved by:



Olivehurst Public Utility District
John Tillotson, General Manager

END OF DOCUMENT

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END OF DOCUMENT

DOCUMENT 00 11 13

ADVERTISEMENT FOR BIDS

[for publishing]

INVITATION TO BID*

Historic Olivehurst Pipeline Replacement Project

1. Notice is hereby given that the Olivehurst Public Utility District will receive sealed bids from bidders for the construction of the Historic Olivehurst Pipeline Replacement Project at **1970 9th Ave, Olivehurst, CA 95961**. This project consists of constructing approximately 7,400 feet of new PVC C900 water main to replace existing steel mains. The project includes providing approximately 155 new service connections for residential meters. In addition to reconnecting to existing meters, around half of the meters will need to be relocated to make way for new curb, gutter, and sidewalk to be constructed at a later date. As part of the water main installation all associated appurtenances will also be installed, including shut off valves, fire hydrants, blow off and air release valves (where applicable and outlined in the contract documents). The project also includes two jack and bore crossings under existing storm drain culverts. Due to future storm drain infrastructure projects to be completed by Yuba County, the mainline installation shall require 4 -1/2 foot minimum cover resulting in a typical trench depth greater than 5 feet. Mainline installation shall also be sufficiently deep to avoid conflicts with future storm drain requiring trench depths greater than 10 feet in some locations as seen in the contract documents. Due to necessary work required to reconnect residential services, contractor shall anticipate the need for sufficient coordination with residents to establish rights of entry to complete work beyond standard right of way and beyond existing residential fencing. The Bid Package may be obtained from **District Engineer, Swarnjit Boyal** via the following methods: Electronic copy by email at sboyal@opud.org. For all hard copies, please come into the office located at 1970 9th Ave, Olivehurst, CA and paying via cash or check for a non-refundable amount of **\$50**. Checks will be made out to Olivehurst Public Utility District. **There is Voluntary Pre-Bid meeting that will start at the District, 1970 9th Ave, Olivehurst, CA starting at 8 AM on July 1st, 2024. Soon after, we will head over to project site/s to go over any additional items identified as relevant via onsite coordination to answer any and all questions.** Note, that this project is funded via the State of California (Department of Water Resources) through the Urban Community Drought Relief Grant. The Contractor will be required to display signage at the job site per Section 01 41 00 Regulatory Requirements Section 1.03 (G). OPUD will pay the awarded bidder per the Prompt Payment Act (Cal. Bus. Prof. Code §7108.5 and Cal. Pub. Contractor Code §§10261.5, 10262, and 10853). OPUD encourages progress payments and are recommended for submittal on a monthly basis. Any applicable federal requirements apply to this project. **Bids are due no later than 2 PM, Thursday, July 18, 2024.**

DOCUMENT 00 11 16

NOTICE INVITING BIDS

ARTICLE 1 INVITATION TO BID

- 1.01 Notice Inviting Bids:** Owner will receive sealed Bids at the office of the District Clerk, **1970 9th Ave, Olivehurst, CA 95961**, until **2:00 PM on July 18, 2024** for the following public work:

OLIVEHURST PUBLIC UTILITY DISTRICT

HISTORIC OLIVEHURST PIPELINE REPLACEMENT PROJECT

PROJECT NUMBER 2024-001

- 1.02 Project Description:** 1. Notice is hereby given that the Olivehurst Public Utility District will receive sealed bids from bidders for the construction of the Historic Olivehurst Pipeline Replacement Project at 1970 9th Ave, Olivehurst, CA 95961. This project consists of constructing approximately 7,400 feet of new PVC C900 water main to replace existing steel mains. The project includes providing approximately 155 new service connections for residential meters. In addition to reconnecting to existing meters, around half of the meters will need to be relocated to make way for new curb, gutter, and sidewalk to be constructed at a later date. As part of the water main installation all associated appurtenances will also be installed, including shut off valves, fire hydrants, blow off and air release valves (where applicable and outlined in the contract documents). The project also includes two jack and bore crossings under existing storm drain culverts. Due to future storm drain infrastructure projects to be completed by Yuba County, the mainline installation shall require 4 -1/2 foot minimum cover resulting in a typical trench depth greater than 5 feet. Mainline installation shall also be sufficiently deep to avoid conflicts with future storm drain requiring trench depths greater than 10 feet in some locations as seen in the contract documents. Due to necessary work required to reconnect residential services, contractor shall anticipate the need for sufficient coordination with residents to establish rights of entry to complete work beyond standard right of way and beyond existing residential fencing.
- 1.03 Location of Work:** Census Designated Place - Olivehurst including portions of Western Avenue, 8th Avenue, 9th Avenue, and 10th Avenue.
- 1.04** The Engineer's Opinion of Probable Costs is approximately **\$3,000,000 to \$4,000,000**
- 1.05 Completion of Work:** All work shall be completed within **180 calendar days** from the date specified in the Notice to Proceed.
- 1.06 Procurement of Bidding Documents:** Bidding Documents contain the full description of the Work. **Bidding documents can be received via electronic copy by emailing sboyal@opud.org or via hard copy provided by the District office located at 1970 9th Ave., Olivehurst, CA for a \$50 non-refundable fee.** Bidders are required to email sboyal@opud.org to receive any updates via addendum which may occur prior to the mandatory pre-bid meeting. Note that the pre-bid meeting and site walk are mandatory and any bidders not present will be automatically disqualified.
- 1.07 Instructions:** Bidders shall refer to Document 00 21 13 (Instructions to Bidders) for required documents and items to be submitted as set forth in Paragraph 1.01 above.
- 1.08 Voluntary Pre-Bid Site Visit and Meeting:** Owner will conduct an optional Pre-Bid Site Visit and Meeting at **1970 9th Ave, Olivehurst, CA 95961 on July 1st, 2024 at 8:00 Am.** The Voluntary Pre-Bid Meeting and Site Visit will last approximately **two to three** hours. A voluntary site walk will follow the voluntary pre-bid meeting.
- 1.09 Bid Preparation Cost:** Bidders are solely responsible for the cost of preparing their Bids.
- 1.10 Reservation of Rights:** Owner specifically reserves the right, in its sole discretion, to reject any or all Bids, to re-bid, or to waive inconsequential defects in bidding not involving time, price or

quality of the work. Owner may reject any and all Bids and waive any minor irregularities in the Bids.

1.11 Not Used.

ARTICLE 2 LEGAL REQUIREMENTS

2.01 Required Contractor's License(s): A California class A contractor's license is required to bid this contract. Joint ventures must secure a joint venture license prior to award of this Contract.

2.02 Required Contractor and Subcontractor Registration

- A. Owner shall accept Bids only from Bidders that (along with all Subcontractors listed in Document 00 43 14, Subcontractor List) are currently registered and qualified to perform public work pursuant to Labor Code Section 1725.5.
- B. Subject to Labor Code Sections 1771.1(c) and (d), any Bid not complying with paragraph 2.02A above, shall be returned and not considered; provided that if Bidder is a joint venture (Business & Professions Code Section 7029.1) or if federal funds are involved in the Contract (Labor Code Section 1771.1(a)), Owner may accept a non-complying Bid provided that Bidder and all listed Subcontractors are registered at the time of Contract award.

2.03 Not Used.

2.04 Not Used.

2.05 Substitution of Securities: Owner will permit the successful bidder to substitute securities for any retention monies withheld to ensure performance of the contract, as set forth in Document 00 62 90 Escrow Agreement For Security Deposits in Lieu of Retention and incorporated herein in full by this reference, in accordance with Public Contract Code Section 22300.

2.06 Prevailing Wage Laws: The successful Bidder must comply with all prevailing wage laws applicable to the Project, and related requirements contained in the Contract Documents. Copies of the general prevailing rates of per diem wages for each craft, classification, or type of worker needed to execute the Contract, as determined by Director of the State of California Department of Industrial Relations may be obtained from the California Department of Industrial Relations website and are deemed included in the Bidding Documents. Also, the successful Bidder shall post the applicable prevailing wage rates at the Site. Bids must also include all applicable taxes.

2.07 Prevailing Wage Monitoring: This Project is subject to prevailing wage compliance monitoring and enforcement by the Department of Industrial Relations.

Dated: _____

Swarnjit Boyal
Public Works Engineer
OLIVEHURST PUBLIC UTILITY DISTRICT

END OF DOCUMENT

DOCUMENT 00 21 13

INSTRUCTIONS TO BIDDERS

Bids are requested by Owner, for a general construction contract, or work described in general, as set forth in Document 00 1116 (Notice Inviting Bids) in accordance with the following additional terms.

ARTICLE 1 - PROCEDURES FOR SUBMISSION OF BIDS

1.01 Pre-Bid Conference and Site Visit

- A. Owner will conduct a Voluntary Pre-Bid Meeting at the date, time and location indicated in Document 00 11 16 (Notice Inviting Bids), to consider such matters as Bidders may request. Bidders may attend the Pre-Bid Meeting and sign an attendance roster prior to bidding. An optional site walk will follow the pre-bid meeting.
- B. The Site Visit may be the Bidders' only opportunity to investigate conditions at the Site. Other Pre-Bid Site Visits may be scheduled at Owner's sole discretion, depending on staff availability.
- C. Owner will issue Minutes of the Pre-Bid Conference, which shall constitute the sole and exclusive record and statement of the results of the Pre-Bid Conference. The Minutes issued by Owner are not Contract Documents.

1.02 Required Pre-Bid Investigations

- A. Prior to submission of Bid, Bidder must conduct a careful examination of Bidding Documents and understand the nature, extent, and location of Work to be performed. Refer to Document 00 72 00 (General Conditions) on required pre-bid investigations.
- B. Any Bidder wishing to investigate subsurface conditions or otherwise conduct invasive investigations, explorations, test, or studies at this Site before bidding, shall schedule such examinations with Owner by providing Owner at least seven (7) days advanced written notice. Additionally, any such Bidder must deliver an executed Document 00 21 00 (Access, Indemnity and Release Agreement) and provide an insurance certificate as described therein by noon of the Day prior to the site examination. Bidders who intend only to observe Site conditions and not conduct such examinations are not required to provide an executed Document 00 21 00 or an insurance certificate.
- C. Bidders may examine any available existing conditions information (e.g., record documents, specifications, studies, drawings of previous work), as well as applicable environmental assessment information (if any) regarding the Project, by giving Owner reasonable advanced notice. Owner will make copies available for a fee. A Bidder must give five (5) days advanced notice if copies are desired.

1.03 Bidder Questions and Answers

- A. Bidders must direct all questions about the meaning or intent of Bidding Documents to Owner in writing. Interpretations or clarifications considered necessary by Owner in response to such questions will be issued by written email or delivered to all parties recorded by Owner as having received Bidding Documents. Owner may not answer questions received less than **seven (7) days** prior to the date for opening Bids.
- B. Only questions answered by formal written Addenda will be binding. Any other interpretations or clarifications will be without legal effect, and Bidders shall not rely on oral statements.

1.04 Addenda

- A. Addenda may also be issued to modify the Bidding Documents as deemed advisable by Owner. Addenda shall be acknowledged by number in Document 00 41 13 (Bid Form) and shall be part of the Contract Documents. A complete listing of Addenda may be secured from Owner.

ARTICLE 2 - RECEIPT OF BIDS

2.01 Date and Time

- A. Sealed Bids will be received by the Owner until the date and time indicated in Document 00 11 16 (Notice Inviting Bids). All Bid envelopes will be time-stamped to reflect their submittal time. Owner shall reject all Bids received after the specified time and will return such Bids to Bidders unopened. Bidders must submit Bids in accordance with this Document 00 21 13.

2.02 Bid Submission:

- A. Owner will receive Bids in opaque sealed 10 inch x 13 inch envelopes, containing the required items described herein.
- B. Bidders should mark their Bid envelopes using the name, address, identifying information and contract number, indicated in Document 00 11 16 (Notice Inviting Bids).

2.03 Required Contents of Bid Submittals

- A. Document 00 41 13 (Bid Form). Bidders must submit Bids on Document 00 41 13 (Bid Form) in accordance with the provisions of Document 00 41 13. Bidders must complete all Bid items and supply all information required by Bid documents and specifications.
- B. Document 00 43 13 (Bond Accompanying Bid). Bidders must submit Document 00 41 13 (Bid Form) accompanied by cash, a cashier's check, certified check (certified without qualification and drawn on a solvent bank of the State of California or a National Bank doing business in the State of California) or completed form of Document 00 43 13 of not less than 10% of the Total Bid Price based on terms contained in Document 00 11 16 (Notice Inviting Bids) and Document 00 41 13 (Bid Form), payable to Owner and completed in accordance with the provisions of Document 00 43 13.
- C. Document 00 43 14 (Bidder Registration Form). Bidders must submit Document 00 4314 (Bidder Registration Form), completed in accordance with the provisions of Document 00 43 14.
- D. Document 00 43 36 (Subcontractors List). Bidders must submit Document 00 43 36 (Subcontractors List) completed in accordance with the provisions of Document 00 43 36. The Subcontractors List must include the names, location, place of business, and other information required by Document 00 43 36, of all subcontractors who will perform any portion of work, including labor, rendering of service, or specially fabricating and installing a portion of the work or improvement according to detailed drawings contained in the plans and specifications, in excess of one half of one percent (0.5%) of the total Bid amount. Any violation of this requirement may result in a Bid being deemed non-responsive and not being considered.
- E. Document 00 45 19 (Non-Collusion Affidavit). Bidders must submit Document 00 45 19 (Non-Collusion Affidavit) completed in accordance with the provisions of Document 00 45 19.
- F. Document 00 45 46 (Bidder Certifications). Bidders must submit Document 00 4546 (Bidder Certification) completed in accordance with the provisions of Document 00 45 46.
- G. Additional Qualification Information. If Bidder is required to submit Additional Qualification Information as required by Document 00 45 46 (Bidder Certifications), Bidder shall provide such information as follows:
 - 1. Include on first page (or separate cover sheet) the words "Additional Qualification Information."
 - 2. All Additional Qualification Information items must reference the original Qualification Information (as defined in Document 00 45 46) it is revising.
 - 3. The Additional Qualification Information must be contained in a **separate** sealed envelope, labeled "Additional Qualification Information" and as provided in Paragraph 2.02.B, above.
 - 4. Notwithstanding any other provision of this Document 00 21 13, Owner will only open a Bidder's Additional Qualification envelope if Bidder is an Apparent Low Bidder.

- H. CARB IUOR Fleet Certification. Bidders must submit Document 00 45 48 (California Air Resources Board In-Use Off-Road Diesel-Fueled Fleets Certification) completed, with Bidder's Certificate of Reported Compliance included if applicable, in accordance with the provisions of Document 00 45 48. Owner will reject a bid from a Bidder that does not indicate conformance to the California Air Resources Board ("CARB") In-Use Off-Road Diesel-Fueled Fleets requirements (Title 13 CCR sections 2449, 2449.1 and 2449.2).

ARTICLE 3 - BID OPENING AND EVALUATION

3.01 Determination of Apparent Low Bidder

- A. Owner will open each Bidders' bid at the time and place indicated in Document 00 11 16 (Notice Inviting Bids), initially evaluate them for responsiveness, and determine an Apparent Low Bidder as specified herein and in Document 00 11 16 (Notice Inviting Bids) and Document 00 41 13 (Bid Form).
- B. Apparent Low Bid will be determined solely on the Total Bid Price based on terms contained in Document 00 11 16 (Notice Inviting Bids) and Document 00 41 13 (Bid Form). All Bidders are required to submit Bids on all Bid items (including any alternates).
- C. For the Apparent Low Bidder only, Owner will evaluate the Apparent Low Bidder for responsiveness to the requirements of Document 00 45 13 and for responsibility.
- D. If Apparent Low Bidder is determined to be non-responsive or non-responsible, then Owner may proceed to the next Apparent Low Bidder's Bid pursuant to any procedures determined in its reasonable discretion, and proceed for all purposes as if this Apparent Low Bidder were the original Apparent Low Bidder.

3.02 Evaluation of Bids

- A. Bids must be full, complete, clearly written and using the required forms. Bidders shall make any change in the Bid by crossing out the original entry, entering and initialing the new entry. Bidder's failure to submit all required documents strictly as required entitles Owner to reject the Bid as non-responsive. All Bidders must submit Bids containing each of the fully executed documents supplied in this Project Manual.
- B. In evaluating Bids, Owner will consider Bidders' qualifications, whether or not the Bids comply with the prescribed requirements, unit prices, and other data, as may be requested in Document 00 41 13 (Bid Form) or prior to the Notice of Award.
- C. Owner may conduct reasonable investigations and reference checks of Bidder and other persons and organizations as Owner deems necessary to assist in the evaluation of any Bid and to establish Bidder's responsibility, qualifications, financial ability, and capability to perform the Work in accordance with the Contract Documents to Owner's satisfaction within the prescribed time. Submission of a Bid constitutes Bidder's consent to the foregoing.
- D. Owner shall have the right to consider information provided by sources other than Bidder. Owner shall also have the right to communicate directly with Bidder's surety regarding Bidder's bonds.
- E. Discrepancies between the multiplication of units of Work and unit prices will be resolved in favor of the unit prices. Discrepancies between the indicated sum of any column of figures and the correct sum thereof will be resolved in favor of the correct sum. Discrepancies between written words and figures will be resolved in favor of the words.
- F. Bids shall be deemed to include the written responses of the Bidder to any questions or requests for information of Owner made as part of Bid evaluation process after submission of Bid.

3.03 Reservation of Rights

- A. Owner reserves the right to:
 - 1. Reject any or all nonconforming, non-responsive or conditional Bids, and

2. Reject the Bid of any Bidder as non-responsive as a result of any error or omission in the Bid, and
 3. Reject the Bid of any Bidder if Owner believes that it would not be in the best interest of Project to make an award to that Bidder, whether because the Bid is not responsive, the Bidder is unqualified or of doubtful financial ability, or fails to meet any other pertinent standard or criteria established by Owner.
- B. Owner may retain Bid securities and Bid bonds of other than the Apparent Low Bidder for a period of **120 Days** after award or full execution of the Contract, whichever first occurs.
- C. Owner may waive any informalities or minor irregularities in the Bids.
- D. Owner also reserves the right, in its discretion, to reject any or all Bids and to re-bid the Project.
- 3.04 Required Contractor and Subcontractor Registration**
- A. Owner shall accept Bids only from Bidders that (along with all Subcontractors listed in Document 00 43 14, Subcontractors List) are currently registered and qualified to perform public work pursuant to Labor Code Section 1725.5.
- B. Subject to Labor Code Sections 1771.1(c) and (d), any Bid not complying with paragraph 3.04.A, above, shall be returned and not considered; provided that if Bidder is a joint venture (Business & Professions Code Section 7029.1) or if federal funds are involved in the Contract (Labor Code Section 1771.1(a)), Owner may accept a non-complying Bid provided that Bidder and all listed Subcontractors are registered at the time of Contract award.

ARTICLE 4 - MANDATORY BID PROTEST PROCEDURES

4.01 Submission of Written Bid Protest

- A. Any Bid protest in connection with the construction contract or work described in general in Document 00 11 16 (Notice Inviting Bids) must be submitted in writing to the **District's Authorized Representative, Swarnjit Boyal, located at 1970 9th Ave, Olivehurst, CA 95961 before 3:30 p.m.** of the fifth Business Day following the posting of Document 00 50 50 (Notice of Intent to Award for Construction) on Owner's website, see opud.org/notices. Owner will use reasonable efforts to deliver by facsimile or email a copy of Document 00 50 50 to all Bidders who submitted Bids no later than the Business Day after issuance, although any delay or failure to do so will not extend the Bid protest deadline described herein.
- B. The initial protest document must contain a detailed description of the legal and/or factual grounds for the protest and all supporting documentation. For protests containing elements not based on publicly released information, the protest must contain documentation clearly showing the date on which the protestor received the information.
- C. The protest must refer to the specific portion of the document that forms the basis for the protest.
- D. The protest must include the name, address, and telephone number of the person representing the protesting party.
- E. The protest must include the signature of the protestor or authorized representative of the protestor.
- F. The protest must contain the solicitation number and title under which the protest is submitted.
- G. The protest must state the form of relief requested.
- H. Only Bidders who the Owner otherwise determines are responsive and responsible are eligible to protest a Bid; protests from any other Bidder will not be considered. In order to determine whether a protesting Bidder is responsive and responsible, Owner may evaluate all information contained in any protesting Bidder's Bid, and conduct the same investigation and evaluation as Owner is entitled to take regarding an Apparent Low Bidder.
- I. The party filing the protest must concurrently transmit a copy of the initial protest document and any attached documentation to all other parties with a direct financial interest that may be adversely

affected by the outcome of the protest. Such parties shall include all other Bidders who appear to have a reasonable prospect of receiving an award depending upon the outcome of the protest.

4.02 Exclusive Remedy

- A. The procedure and time limits set forth in this Article 4 are mandatory and are Bidder's sole and exclusive remedy in the event of Bid protest. Bidder's failure to comply with these procedures shall constitute a waiver of any right to further pursue the Bid protest, including filing a Government Code Claim or other legal proceedings. A Bidder may not rely on a protest submitted by another Bidder, but must timely pursue its own protest.

ARTICLE 5 - AWARD AND EXECUTION OF CONTRACT

5.01 Notice of Award and Submittal of Executed Contract Documents

- A. If Contract is to be awarded, it will be awarded to the lowest responsible responsive Bidder. Owner will issue Document 00 51 00 Notice of Award. Such Award, if made, will be made within ninety (90) days after the opening of the Bid Proposals.
- B. Successful Bidder must execute and submit to Owner the "Required Contract Documents and Proof of Insurance" set forth below, by 5:00 p.m. of the **20th** Day following the Notice of Award.

5.02 Required Contract Documents, Bonds and Proof of Insurance

- A. Document 00 52 00 (Agreement), fully executed by successful Bidder. Submit **four** originals, each bearing an original signature on the signature page and initials on each page.
- B. Document 00 65 36 (Guaranty), fully executed by successful Bidder. Submit **one** original, bearing an original signature on the signature page and initials on each page.
- C. Performance bond and (if applicable) payment bond, as provided in Contract Documents.
- D. Insurance certificates and endorsements required by Document 00 73 16 (Supplemental Conditions—Insurance): Submit one original set.
- E. Any other items identified by Owner in Document 00 51 00 (Notice of Award).

5.03 Failure to Execute and Deliver Documents:

- A. If Bidder to whom the Contract is awarded, within the period described in this Document 00 21 13, fails or neglects to execute and deliver all required Contract Documents and file all required bonds, insurance certificates, and other documents, Owner may, in its sole discretion, rescind the award, recover on Bidder's surety bond, or deposit Bidder's cashier's check or certified check for collection, and retain the proceeds thereof as liquidated damages for Bidder's failure to enter into the Contract Documents. Bidder agrees that calculating the damages Owner may suffer as a result of Bidder's failure to execute and deliver all required Contract Documents would be extremely difficult and impractical and that the amount of Bidder's required Bid security shall be the agreed and presumed amount of Owner's damages.
- B. Upon Bidder's failure to timely deliver all required Contract Documents as set forth herein, Owner may determine the next Apparent Low Bidder and proceed accordingly. Such Award, if made, will be made within **ninety (90)** days after the opening of the Bid Proposals.

ARTICLE 6 - GENERAL CONDITIONS AND REQUIREMENTS

6.01 Modification of Commencement of Work:

- A. Owner expressly reserves the right to modify the date for the Commencement of Work under the Contract and to independently perform and complete work related to Project. Owner accepts no responsibility to Contractor for any delays attributed to its need to complete independent work at the Site.

- B. Owner shall have the right to communicate directly with Apparent Low Bidder's proposed performance bond surety, to confirm the performance bond. Owner may elect to extend the time to receive faithful performance and labor and material payment bonds.

6.02 Conformed Project Manual:

- A. Following Award of Contract, Owner may prepare a conformed Project Manual reflecting Addenda issued during bidding, which will, failing objection, constitute the approved Project Manual.

6.03 Payment Bond:

- A. If the Project described in Document 00 11 16 (Notice Inviting Bids) involves an expenditure in excess of twenty-five thousand dollars (\$25,000), the successful Bidder must file a payment bond with and approved by Owner prior to entering upon the performance of the Work, in accordance with Civil Code Section 9550, *et seq.*

6.04 Performance Bond:

- A. The successful Bidder must file a performance bond with and approved by Owner prior to entering upon the performance of the Work.

6.05 Wage Rates:

- A. Copies of the general prevailing rates of per diem wages for each craft, classification, or type of worker needed to execute the Contract, as determined by Director of the State of California Department of Industrial Relations, and may be obtained from the California Department of Industrial Relations website [<http://www.dir.ca.gov/OPRL/dprewagedetermination.htm>] and are deemed included in the Bidding Documents. Also, Contractor shall post the applicable prevailing wage rates at the Site. Prevailing wage rates shall also be reported to DWR as part of the grant funding program. See Labor Rate Template provided in the appendix of these contract documents.

6.06 Withdrawal of Bids:

- A. Bidders may withdraw their Bids at any time prior to the Bid opening time fixed in this Document 00 21 13, only by written request for the withdrawal of Bid filed with Owner at **1970 9th Ave, Olivehurst, CA 95961**. Bidder or its duly authorized representative shall execute request to withdraw Bid.

6.07 Ineligible Contractors and Subcontractors:

- A. Owner will reject a Bid from a Bidder who is ineligible to bid or work on, or be awarded, a public works project pursuant to Labor Code Section 1777.1 or 1777.7. Bidders and the Contractor who is awarded the project contract shall not utilize, or allow work by, any subcontractor who is ineligible to bid or work on, or be awarded, a public works project pursuant to Labor Code Section 1777.1 or 1777.7. (See Public Contract Code Section 6109.) The California Division of Labor Standards Enforcement publishes a list of debarred contractors and subcontractors on the Internet at www.dir.ca.gov/DLSE/debar.html.

6.08 Public Records Act Requests:

- A. In accordance with the California Public Records Act, Owner will make available to the public Bidder's SOQ, all correspondence and written questions submitted during the Bid period, all Bid submissions opened in accordance with the procedures set forth herein, and all subsequent Bid evaluation information. All submissions not opened will remain sealed and shall be returned to the submitter. Except as otherwise require by law, Owner will not disclose trade secrets or proprietary financial information submitted by Bidders that has been designated as confidential by Bidder (including, without limitation, the SOQ). Any such trade secrets or proprietary financial information that Bidder believes should be exempted from disclosure shall be specifically identified and marked as such. Blanket-type identification by designating whole pages or sections shall not be permitted and shall be invalid. The specific confidential information must be clearly identified as such.
- B. Upon a request for records regarding this Bid, Owner will notify the Bidder involved, within ten Days from receipt of the request, when the records will be made available for inspection. If the Bidder

timely identifies any “proprietary, trade secret, or confidential commercial or financial” information that Bidder determines is not subject to public disclosure, and requests that Owner refuse to comply with the records request, Bidder will, at its sole expense, take all appropriate legal action and defend Owner’s refusal to produce the information in all forums; otherwise Owner will make such information available to the extent require by applicable law, without restriction.

- C. Information disclosed in the Statement of Qualifications and the attendant opened submissions are the property of Owner unless Bidder makes specific reference to data that is considered proprietary. Subject to the requirements in the Public Records Act, reasonable efforts will be made to prevent the disclosure of information except on a need-to-know basis during the evaluation process.

6.09 Substitutions:

- A. Bidders must base their Bids on products and systems specified in Contract Documents or listed by name in Addenda. Owner will consider substitution requests only for “or equal items.”

Bidders wanting to use “or equal” item(s) may submit Document 00 63 25 (Substitution Request Form) no later than 35 Days after Notice of Award. To assess “or equal” acceptability of product or system, request(s) for substitution must contain the information required in Document 00 63 25. Insufficient information will be grounds for Owner to reject the substitution. Owner will, within a reasonable time, after having received a request for substitution, issue in writing its decision as to whether the proposed substitution is an “or equal” item compatible to Owner systems, durability, and quality. Owner’s decision shall be conclusive as to all Bidders. Substitutions approved before Bid day will be listed in Addenda and become part of the Contract Documents.

As a limitation on Bidder's privilege to request substitution of “or equal” items, Owner has found that certain items are designated as Owner standards and certain items are designated to match existing items in use on a particular public improvement either completed or in the course of completion or are available from one source. As to such items, Owner will not permit substitution. Such items (if any) are described in Document 00 11 16 (Notice Inviting Bids).

6.010 Definitions:

- A. All abbreviations and definitions of terms used in this Document 00 21 13 (Instructions to Bidders) are set forth in Document 00 72 00 (General Conditions) and Section 01 42 00 (References and Definitions).

END OF DOCUMENT

DOCUMENT 00 31 32

DATA AND EXISTING CONDITIONS

ARTICLE 1 REPORTS AND INFORMATION ON EXISTING CONDITIONS

1.01 Inspection of Reports:

- A. Owner, its consultants, and prior contractors may have collected documents providing a general description of the Site and conditions of the Work. These documents may consist of geotechnical reports for and around the Site, contracts, contract specifications, tenant improvement contracts, as-built drawings, utility drawings, information regarding Underground Facilities, and hazardous material surveys or information (collectively, **Existing Conditions Data**.)
- B. Bidders may inspect Geotechnical and Existing Conditions Data. These documents are listed in Section 01 11 00 (Summary of Work) and are available for review at the address identified therein. Copies may be obtained for the cost of reproduction and handling upon Bidder's payment for the costs.
- C. Existing Conditions Data is for information purposes only and does not describe labor, materials or equipment furnished by Contractor, but rather, information regarding conditions of the work. Such Existing Conditions Data is not a Contract Document.

ARTICLE 2 USE OF EXISTING CONDITIONS DATA

2.01 Above-Ground Existing Conditions:

- A. Owner makes no warranty or representation of existing aboveground conditions, as-built conditions, or other aboveground actual conditions verifiable by reasonable independent investigation. These conditions are verifiable by Bidder by the performance of its own independent investigation that Bidder must perform prior to bidding and Bidder must not rely on the information supplied by Owner regarding such existing conditions.
- B. Bidder represents and agrees that in submitting its Bid, it is not relying on any information regarding above-ground existing conditions supplied by Owner.

2.02 Underground Facilities:

- A. Information supplied regarding existing Underground Facilities at or contiguous to the Site is based on information furnished to Owner by others (e.g., the builders of such Underground Facilities or others).
- B. Owner assumes responsibility for only the general accuracy, completeness or thoroughness of information regarding Underground Facilities that are owned by Owner. This express assumption of responsibility applies only if Bidder has conducted the independent investigation required of it under Document 00 72 00 (General Conditions) and discrepancies were not apparent. Bidder is solely responsible for any interpretation or conclusion drawn from this information. Owner is not responsible for information regarding Underground Facilities that are owned by others.

2.03 Hazardous Materials Surveys:

- A. Bidders may rely on this data and information for general accuracy regarding the locations of potentially hazardous materials subject of the Work. Owner does not warrant and makes no representation regarding the completeness or thoroughness of any data or information regarding existing conditions or hazardous materials including, without limitation, quantities, characteristics, volumes, or associated structural features. Bidder represents and agrees that in submitting a Bid it is not relying on any such data, information or deductions.
- B. Data and information regarding the locations of hazardous materials are not part of Contract Documents.

2.04 Geotechnical Data – Not Used

2.05 Except as expressly set forth in this Document 00 31 32,

- A. Owner does not warrant, and makes no representation regarding, the accuracy or thoroughness of any geotechnical and existing conditions data.
- B. Bidder represents and agrees that in submitting its Bid, it is not relying on any geotechnical and existing conditions data supplied by Owner, except as specifically set forth herein.

ARTICLE 3 INVESTIGATIONS

3.01 Required Investigations:

- A. Before submitting a Bid, each Bidder shall be responsible to obtain such additional or supplementary examinations, investigations, explorations, tests, studies and data concerning conditions (surface, subsurface, and Underground Facilities) at or contiguous to the Site or otherwise, which may affect cost, progress, performance or furnishing of Work or which relate to any aspect of the means, methods, techniques, sequences or procedures of construction to be employed by Bidder and safety precautions and programs incident thereto or which Bidder deems necessary to determine its Bid for performing and furnishing the Work in accordance with the time, price and other terms and conditions of Contract Documents.
- B. Bidders shall advise Owner in writing during the Bid period of any questions, suppositions, inferences or deductions Bidders may have for Owner's review and response.
- C. Owner has provided time in the period prior to bidding for Bidder to perform these investigations.

3.02 Access to Site for Investigations:

- A. During the Pre-Bid Site Visit(s), Owner will provide each Bidder access to the Site to conduct such examinations, investigations, explorations, tests, and studies, as each Bidder deems necessary for submission of a Bid, provided that invasive testing will be permitted only to the extent provided in Document 00 21 13 (Instructions to Bidders). Bidders must fill all holes and clean up and restore the Site to its former conditions upon completion of such explorations, investigations, tests, and studies. Such investigations may be performed only under the provisions of Document 00 21 13 (Instructions to Bidders) and Document 00 72 00 (General Conditions) including, without limitation, proof of insurance and obligation to indemnify against claims arising from such investigation work. Each Bidder shall supply all equipment required to perform any investigations as each Bidder deems necessary. Owner has the right to limit the number of pieces of machinery operating at any one time due to safety concerns or in order to protect or maintain the Site from potential damage or interruption to general operational activities.

END OF DOCUMENT

DOCUMENT 00 41 13

BID FORM

TO OLIVEHURST PUBLIC UTILITY DISTRICT

THIS BID IS SUBMITTED BY:

(Firm/Company Name)

Re: Historic Olivehurst Pipeline Replacement Project, Project Number 2024-001.

- 1. The undersigned Bidder proposes and agrees, if this Bid is accepted, to enter into an agreement with the **OLIVEHURST PUBLIC UTILITY DISTRICT** in the form included in the Contract Documents, Document 00 52 00 (Agreement), to perform and furnish all Work as specified or indicated in the Contract Documents for the Contract Sum and within the Contract Time indicated in this Bid and in accordance with all other terms and conditions of the Contract Documents.
- 2. Bidder accepts all of the terms and conditions of the Contract Documents, Document 00 11 16 (Notice Inviting Bids), and Document 00 21 13 (Instructions to Bidders) including, without limitation, those dealing with the disposition of Bid Security. This Bid will remain subject to acceptance for 120 Days after the day of Bid opening.
- 3. In submitting this Bid, Bidder represents that Bidder has examined all of the Contract Documents, performed all necessary Pre-Bid investigations, attended, or elected not to attend, the voluntary Pre-Bid Meeting, received the Pre-Bid Meeting minutes (if any), and received the following Addenda:

Addendum Number	<u>ADDENDUM DATE</u>	Signature of Bidder

- 4. Based on the foregoing, Bidder proposes and agrees to fully perform the Work within the time stated and in strict accordance with the Contract Documents for the following sums of money listed in the following Schedule of Bid Prices:

SCHEDULE OF BID PRICES

All Bid items, including lump sums, and alternates (if any), must be filled in completely. Bid items are described in Section 01 11 00 (Summary of Work). Quote in figures only, unless words are specifically requested.

Item No.	Est. Qty	Description	Cost Type	Unit Price	Extended Cost
1	1	Mobilization/demobilization	L.S.	N.A.	
2	1	Traffic control plan preparation, approval, and implementation	L.S.	N.A.	
3	1	Water pollution control plan preparation, approval, and implementation	L.S.	N.A.	
4	1	Site Safety (sheeting, shorting and bracing)	L.S.	N.A.	
5	300	Pothole existing facilities	EA.		
6	1	Demolition and abandonment	L.S.	N.A.	
7	277	New 6-inch PVC Main DR 18 (unrestrained)	L.F.		
8	120	New 6-inch PVC Main DR 14 (restrained)	L.F.		
9	4,830	New 8-inch PVC Main DR 18 (unrestrained)	L.F.		
10	451	New 8-inch PVC Main DR 14 (unrestrained)	L.F.		
11	655	New 8-inch PVC Main DR 14 (restrained)	L.F.		
12	6	8-inch Inline Gate Valves	EA.		
13	1	Undercrossing (48" Storm Drain) Via Jack and Bore Western Ave	L.S.	N.A.	
14	1	Undercrossing (36" Storm Drain) Via Jack and Bore 8th Ave	L.S.	N.A.	

Item No.	Est. Qty	Description	Cost Type	Unit Price	Extended Cost
15	1	Tie-In to Existing System 1/T1 (8th Ave STA 13+95)	L.S.	N.A.	
16	1	Tie-In to Existing System 2/T1 (8th Ave STA 24+06)	L.S.	N.A.	
17	1	Tie-In to Existing System 3/T1 (9th Ave STA 1+00)	L.S.	N.A.	
18	1	Tie-in to Existing System 4/T1 (9th Ave STA 14+23)	L.S.	N.A.	
19	1	Tie-in to Existing System 5/T1 (10th Ave STA 13+82)	L.S.	N.A.	
20	1	Tie-In to Existing System 6/T2 (Western Ave STA 1+11)	L.S.	N.A.	
21	1	Tie-In to Existing System 7/T2 (Western Ave STA 21+07)	L.S.	N.A.	
22	1	Connection to New System 8/T2 (Western Ave STA 14+22)	L.S.	N.A.	
23	1	Connection to New System 9/T2 (Western Ave STA 7+58)	L.S.	N.A.	
24	1	Connection to New System 10/T2 (8th Ave STA 23+80)	L.S.	N.A.	
25	18	Install New Fire Hydrant Assembly	EA.		
26	31	New Water Service – Long Side	EA.		
27	35	New Water Service – Long Side with Meter Relocation	EA.		
28	50	New Water Service – Short Side	EA.		
29	34	New Water Service – Short Side with Meter Relocation	EA.		
30	3	New Water Service – Vacant Lot	EA.		

Item No.	Est. Qty	Description	Cost Type	Unit Price	Extended Cost
31	1	Flush/Pressure Test/Disinfection	L.S.	N.A.	
32	29,600	Pavement Restoration Mainline (T-Trench)	S.F.		
33	52,000	Pavement Restoration Mainline (2" Keygrind and Overlay)	S.F.		
34	1	Landscape and Hardscape Repairs	L.S.	N.A.	

Total Bid Price:

(Indicate Bid Price in Words)

5. The undersigned acknowledges that the Apparent Low Bidder will be determined as provided in Documents 00 11 16 (Notice Inviting Bids) and Document 00 21 13 (Instruction to Bidders).
6. Subcontractors for work are listed on Document 00 43 14 (Subcontractors List), submitted herewith.
7. The undersigned Bidder understands that Owner reserves the right to reject this Bid.
8. If written notice of the acceptance of this Bid, hereinafter referred to as Notice of Award, is mailed or delivered to the undersigned Bidder within the time described in Paragraph 2 of this Document 00 41 13 or at any other time thereafter before it is withdrawn, the undersigned Bidder will execute and deliver the documents required by Document 00 21 13 (Instructions to Bidders) within the times specified therein.
9. Notice of Award or request for additional information may be addressed to the undersigned Bidder at the address set forth below.
10. The undersigned Bidder herewith encloses cash, a cashier's check, or certified check of or on a responsible bank in the United States, or a corporate surety bond furnished by a surety authorized to do a surety business in the State of California, in form specified in Document 00 21 13 (Instructions to Bidders), in the amount of ten percent (10%) of the Total Bid Price and made payable to **OLIVEHURST PUBLIC UTILITY DISTRICT**.
11. The undersigned Bidder agrees to commence Work under the Contract Documents on the date established in Document 00 72 00 (General Conditions) and to complete all Work within the time specified in Document 00 52 00 (Agreement).
12. The undersigned Bidder agrees that, in accordance with Document 00 72 00 (General Conditions), liquidated damages for failure to complete all Work in the Contract within the time specified in Document 00 52 00 (Agreement) shall be as set forth in Document 00 52 00.
13. The names of all persons interested in the foregoing Bid as principals are:
[_____]

IMPORTANT NOTICE: If Bidder or other interested person is a corporation, give the legal name of corporation, state where incorporated, and names of president and secretary thereof; if a partnership, give name of the firm and names of all individual co-partners composing the firm; if Bidder or other interested person is an individual, give first and last names in full.

NAME OF BIDDER: _____

licensed in accordance with an act for the registration of Contractors, and with license number: _____ Expiration: _____.

(Place of Incorporation, if Applicable)	(Principal)
	(Principal)
	(Principal)

I certify (or declare) under penalty of perjury under the laws of the State of California that the foregoing is true and correct.

(Signature of Bidder)

NOTE: If Bidder is a corporation, set forth the legal name of the corporation together with the signature of the officer or officers authorized to sign contracts on behalf of the corporation. If Bidder is a partnership, set forth the name of the firm together with the signature of the partner or partners authorized to sign contracts on behalf of the partnership.

Business Address: _____

Contractor's Representative(s):

(Name/Title)

(Name/Title)

(Name/Title)

Officers Authorized to Sign Contracts

(Name/Title)

(Name/Title)

(Name/Title)

Telephone Number(s):

(Area Code) (Number)

(Area Code) (Number)

Fax Number(s):

(Area Code) (Number)

(Area Code) (Number)

Email Address(es):

Date of Bid:

END OF DOCUMENT

DOCUMENT 00 43 13
BOND ACCOMPANYING BID

KNOW ALL BY THESE PRESENTS:

That the undersigned

(Name of Contractor)

as Principal and the undersigned as Surety are held and firmly bound unto Owner, **OLIVEHURST PUBLIC UTILITY DISTRICT**, a _____, as obligee, in the penal sum of **(Dollar Amount In Words)** _____ Dollars (\$ _____) lawful money of the United States of America being at least ten percent (10%) of the aggregate amount of said Principal's Total Bid Price, for the payment of which, well and truly to be made, we bind ourselves, our successors, executors, administrators, and assigns, jointly and severally, firmly by these presents.

WHEREAS, said Principal is submitting a Bid for Project Number **2024-001** for construction of the **[ADDRESS]** in the City of _____, CA.

THE CONDITION OF THIS OBLIGATION IS SUCH that if the Bid submitted by the said Principal be accepted and the Contract be awarded to said Principal and said Principal shall within the required periods enter into the Contract so awarded and provide the required Construction Performance Bond, Construction Labor and Material Payment Bond, insurance certificates, Guaranty, and all other endorsements, forms, and documents required under Document 00 21 13 (Instructions to Bidders), then this obligation shall be void, otherwise to remain in full force and effect.

IN WITNESS WHEREOF, the above bounden parties have executed this instrument this _____ day of _____, 2024.
(Month)

(Corporate Seal) By _____
Principal

By _____
Surety

(Corporate Seal) By _____
Attorney in Fact

END OF DOCUMENT

DOCUMENT 00 43 14
BIDDER REGISTRATION FORM

INDEPENDENT CONTRACTOR REGISTRATION

Contractor's License # _____

Date: _____ Fed Tax I.D. # _____

Full Corporate Name of Company: _____

Street Address: _____

Mailing Address: _____

Phone: _____ Fax: _____

Name of Principal Contact: _____

California Department of Industrial Relations ("DIR") Number: _____

Type of Business: _____ Sole Proprietor _____ Partnership
 _____ Non-Profit 501(c)(3) _____ Corporation
 _____ other (please explain: _____)

INSURANCE (Complete all items listed below that are applicable and/or are required by Document 00 73
16, Supplemental Conditions – Insurance and Indemnification)

Workers' Compensation:

Carrier: _____

Address: _____

Phone and Fax: _____

Policy Number: _____

General Liability:

Carrier: _____

Address: _____

Phone and Fax: _____

Policy Number: _____

Policy Limits: \$ _____

A.M. Best Rating: _____

Automobile Liability:

Carrier: _____

Address: _____

Phone and Fax: _____

Policy Number: _____

Policy Limits: \$ _____

A.M. Best Rating: _____

All-Risk Course of Construction:

Carrier: _____

Address: _____

Phone and Fax: _____

Policy Number: _____

Policy Limits: \$ _____

A.M. Best Rating: _____

Professional Liability (if applicable):

Carrier: _____

Address: _____

Phone and Fax: _____

Policy Number: _____

Policy Limits: \$ _____

A.M. Best Rating: _____

Pollution Legal Liability Insurance (if applicable):

Carrier: _____

Address: _____

Phone and Fax: _____

Policy Number: _____

Policy Limits: \$ _____

A.M. Best Rating: _____

Excess Liability Insurance (if applicable):

Carrier: _____

Address: _____

Phone and Fax: _____

Policy Number: _____

Policy Limits: \$ _____

A.M. Best Rating: _____

Other Liability Insurance (if applicable):

Carrier: _____

Address: _____

Phone and Fax: _____

Policy Number: _____

Policy Limits: \$ _____

A.M. Best Rating: _____

BIDDER CERTIFIES, UNDER PENALTY OF PERJURY, THAT THE FOREGOING INFORMATION IS CURRENT AND ACCURATE AND AUTHORIZES OWNER, AND ITS AGENTS AND REPRESENTATIVES TO OBTAIN A CREDIT REPORT AND/OR VERIFY ANY OF THE ABOVE INFORMATION.

BIDDER: _____
(COMPANY NAME)

By: _____ TITLE

NAME

TITLE

By: _____ DATE

SIGNATURE

DATE

SAFETY AND EXPERIENCE RECORD

The following statements as to the Bidder's safety experience are submitted with the Bid, as part thereof, and the Bidder guarantees the truthfulness and accuracy of all information.

1. List Bidder's interstate Experience Modification Rate for the last three years.

2021 _____ **2022** _____ **2023** _____

If Bidder was not eligible to obtain a formal rating from the Workers Compensation Insurance Rating Bureau for any of the years listed above, Bidder must submit written information from its workers compensation insurance company that establishes what Bidder's equivalent EMR would be.

2. Total Recordable Incident Rates (RIR)

What were Bidder's Total RIR for each of the last three years?

2021 _____ **2022** _____ **2023** _____

Average of last three years: _____ (no rounding)

3. Total Lost Time Incident Rates (LTIR)

What were Bidder's Total LTIR for each of the last three years?

2021 _____ **2022** _____ **2023** _____

Average of last three years: _____ (no rounding)

4. Use Bidder's last year's Cal/OSHA 300 log to fill in the following number of injuries and illnesses:

a. Number of lost workday cases _____

b. Number of medical treatment cases _____

c. Number of fatalities _____

5. Employee hours worked last year _____

6. State the name of Bidder's safety engineer/manager:

Attach a resume or outline of this individual's safety and health qualifications and experience.

I CERTIFY, UNDER PENALTY OF PERJURY, THAT THE FOREGOING INFORMATION IS CURRENT AND ACCURATE AND I AUTHORIZE OWNER, AND ITS AGENTS AND REPRESENTATIVES TO OBTAIN A CREDIT REPORT AND/OR VERIFY ANY OF THE ABOVE INFORMATION.

BIDDER:

By: _____
Signature

Its: _____
Title

Date _____

END OF DOCUMENT

DOCUMENT 00 4336

SUBCONTRACTORS LIST

1. **Subcontractor's List.** The Subcontractors List must include the names of all subcontractors who will perform any portion of Work, including labor, rendering of service, or specially fabricating and installing a portion of the Work or improvement according to detailed drawings contained in the plans and specifications, in excess of one half of one percent (0.5%) of the total Bid amount.

Name of Subcontractor and Location of Place of Business	Description of Work	Subcontractor's License No.	DIR Registration Number

(Bidder to attach additional sheets if necessary)

(PUBLIC CONTRACT CODE §4100 ET SEQ.)

2. **Subcontracting Limits.** The Contractor shall perform with its own organization work amounting to not less than 50 percent of the original total contract price, except that any designated "Specialty Items" may be performed by subcontract and the amount of any such "Specialty Items" so performed may be deducted from the original total contract price before computing the amount of work required to be performed by the Contractor with its own organization. When items of work in the Bid schedule are preceded by the letter (S), such items shall be deemed designated "Specialty Items." Where an entire item is subcontracted, the value of work subcontracted will be based on the contract item bid price. When a portion of an item is subcontracted; the value of work subcontracted will be based on the estimated percentage of the contract item bid price, determined from information submitted by the Contractor, subject to approval by Owner.

END OF DOCUMENT

DOCUMENT 00 45 13

STATEMENT OF QUALIFICATIONS FOR CONSTRUCTION WORK

ARTICLE 1 – GENERAL INFORMATION

1.01 Minimum Bidder Qualifications.

- A. Bidders must be duly licensed, pursuant to the license requirements in Document 00 11 16, Article 2.01, and in accordance with the California Business & Professions Code Sections 7006, *et seq.*, and have a history of work performance sufficient to meet the requirements of a responsible bidder in the Public Contract Code Section 1103.
- B. Bidders must have five (5) years experience as a continuously operating entity engaged in the performance of similar work.
- C. Bidders must demonstrate successful completion of **three (3) underground utility replacement/installation projects within the past ten (10) years** that involve construction of water facilities that were of similar size and nature to the Work for Owner consideration.

1.02 Measurement.

- A. Bidder's compliance with the minimum qualification requirements will be measured by Bidder's experience as an operating entity and also by the experience of the supervisory personnel who will have responsible charge of the various major components of the Work.
- B. If Bidder subcontracts portions of the Work, Owner, in its determination of whether the minimum qualification requirements have been met, may consider the qualifications of the Subcontractor's supervisory personnel.
- C. The qualifications of the Key Personnel, as stated in Attachment A, are to be submitted with the Statement of Qualifications (**SOQ**), by providing the information described in this Document 00 45 13.

1.03 Other Requirements.

- A. Bidder's attention is called to the following minimum requirements for a Bidder to be found responsible to perform the Work:
 - 1. Financial Strength. Sufficient financial strength, stability and resources as measured by Bidder's equity, debt-to-assets ratio, and capability to finance the Work to be performed.
 - 2. Building Capacity. Ability to secure, in accordance with the Contract documents, the required forms of Construction Performance Bond and Construction Labor and Material Payment Bond. Ability to obtain required insurance with coverage values that meet minimum requirements.
 - 3. Subcontracting Prior Experience. Satisfactory experience on public works, including without limitation no history of default termination, excessively delayed completion or excessive defective work.
 - 4. Public Project Experience. Evidence that Bidder and its team, have the human and physical resources of sufficient quantity and quality to perform the Work under Contract documents in a timely and Specification-compliant manner, to include:
 - a. Construction and management organizations with sufficient personnel and requisite disciplines, licenses, skills, experience, and equipment for the Project.
 - b. Minimum licensing requirements including evidence of a valid California contractor's license for the Bidder and evidence of requisite licenses for Key Personnel of Bidder.
 - c. Sufficiency of proposed quality assurance plan to meet the requirements of the Contract documents.
 - d. Bidder's safety record.
 - e. Minimum experience requirements of the prime contractor including the completion of

- at least the minimum projects described in paragraph 1.02.C above.
- f. A field organization with skills, experience, and equipment sufficient to perform all on-Site work and necessary scheduling.
 - g. Expertise of Key Personnel to accomplish the duties and responsibilities required to perform the Work under Contract documents. Minimum experience requirements of Key Personnel including the completion of three projects of similar nature and complexity and having two years of experience on projects of similar nature and complexity.
- B. [Intentionally omitted].

ARTICLE 2 – REQUIRED CONTENTS OF SOQ SUBMISSION

2.01 Transmittal Letter.

- A. The Transmittal Letter shall name the proposed prime contractor, its legal structure (i.e., corporation, partnership, limited partnership, joint venture). If a joint venture or partnership is proposed, Bidder shall identify partner and/or member of the joint venture and their roles and responsibilities.

2.02 Submittals.

- A. Completed Questionnaires. Bidder shall include a completed Statement of Qualification Questionnaire in the form attached to this Document 00 45 13 as Attachment A.
- B. Resumes of Proposed Key Personnel. Bidder shall provide a resume for each named Key Personnel of Bidder, to include as necessary: Years of experience; Education - degrees, schools and years obtained; Professional Registrations; Fluency in English (Yes/No); At least two client references, including contact names, addresses and telephone numbers, and description of projects of a similar nature worked on in the past five years.
- C. Not Used.
- D. Surety Letter re: Capability to Provide Required Performance and Payment Bonds. Bidder shall include a letter from a surety duly licensed to do business in the State of California, having a financial rating from A.M. Best Company of A-, and category of III or better for Owner consideration, that the surety has agreed to provide Bidder with the required performance and payment bonds in accordance with the requirements set forth in Documents 00 61 13.13 (Construction Performance Bond) and (Construction Labor and Material Payment Bond), each in the penal sum of the Contractor's bid when submitted. Owner shall have the right to verify with the surety that the surety, based upon the Bid prices, will issue the required bonds under the conditions stated.
- E. Insurer Letter re: Capability to Provide the Required Insurance. Bidder shall provide a letter from an insurance underwriter, having a financial rating reasonably acceptable to Owner, confirming that the insurer will provide Bidder the required coverages and amounts specified in the Contract Documents.
- F. Description of Human and Physical Resources. Bidder shall identify, describe, and quantify for itself, the following technical information for the construction work: Description and location of manufacturing facilities, naming products and quantifying production capacity and current demand; Description of field organization(s), naming skills and equipment; Description of safety program quality control procedures, and safety experience; and
- G. License: Evidence of a valid contractor's license and required licenses of all licensees of persons

who are Key Personnel necessary to perform the Work.

- H. Litigation History. Description of litigation history for the past three years including names of involved parties, nature of dispute, and disposition.

2.03 Format.

- A. The SOQ shall be clear and concise to enable management-oriented personnel to make a thorough evaluation and arrive at a sound determination as to whether the SOQ meet Owner's requirement. To this end, the SOQ should be so specific, detailed and complete as to demonstrate clearly and fully that the Bidder has a thorough understanding of and has demonstrated knowledge of the requirements to perform the Work (or applicable portion thereof).
- B. Any explanation requested by a Bidder regarding the meaning or interpretation of this Document 00 45 13 must be requested in writing and with sufficient time allowed for a reply to reach Bidder before the submission of its SOQ. Oral explanations or instructions will not be binding. Any information provided to any prospective Bidder concerning this Document 00 45 13 will be furnished to all prospective Bidders as an Addendum to the Bidding Documents.

[NEXT PAGE - STATEMENT OF QUALIFICATION QUESTIONNAIRE]

DOCUMENT 00 45 13

ATTACHMENT A – Statement of Qualification Questionnaire

Bidders shall complete the entire Statement of Qualification Questionnaire and submit it in accordance with Document 00 21 13 (Instructions to Bidders) and Document 00 45 13 (Statement of Qualifications). Failure to complete the questionnaire or inclusion of any false statement(s) shall be ground for immediate disqualification.

CONTACT INFORMATION

Company Name: _____

Owner of Company: _____

Contact Person: _____

Address: _____

Phone: _____ Fax: _____

Email: _____

PART A: GENERAL INFORMATION

1. Does Bidder possess a valid and current California Contractor’s license for the work proposed? Yes ___ No ___
2. Does Bidder have the minimum liability insurance coverage required in Document 00 73 16 – Insurance and Indemnification? Yes ___ No ___
3. Has Bidder’s License been revoked at any time in the last five years? Yes ___ No ___
4. Has Bidder been “default terminated” by an Owner (other than for convenience), or has a Surety completed a contract for Bidder within the last five years? Yes ___ No ___
5. Has Bidder been convicted more than twice for failure to pay prevailing wages in the last three years? Yes ___ No ___
6. Not Used. Yes ___ No ___
7. Are Bidder and all listed subcontractors registered and qualified with the Department of Industrial Relations pursuant to Labor Code Section 1725.5? Yes ___ No ___

**Bidder may be disqualified if any answer to questions 1, 2, or 7 is No.
Bidder may be disqualified if any answer to questions 3, 4, or 5 is Yes.**

PART B: SAFETY, PREVAILING WAGE, DISPUTES AND BONDS

(SAFETY)

1. Has Cal/OHSA, Federal OSHA, the EPA or any Air Quality Management Agency cited Bidder in the past five years?
Yes ___ No ___ If yes, attach description of each citation.
2. How often does Bidder require documented safety meetings be held for:
Field Supervisor Weekly _____ Bi-Weekly _____ Monthly _____ Less Than Monthly _____

Employees Weekly _____ Bi-Weekly _____ Monthly _____ Less Than Monthly _____
New Hires Weekly _____ Bi-Weekly _____ Monthly _____ Less Than Monthly _____
Subcontractors Weekly _____ Bi-Weekly _____ Monthly _____ Less Than Monthly _____

3. How often does Bidder conduct documented safety inspections?
Quarterly _____ Semi-annually _____ Annually _____ Other _____
4. Does Bidder have home office safety representatives who visit/audit the job site?
Quarterly _____ Semi-annually _____ Annually _____ Other _____
5. What is Bidder's Interstate Experience Modification Rate? _____. (A rating in excess of **[1]** may constitute grounds for disqualification as non-responsible).

(PREVAILING WAGE PROVISIONS)

6. Has Bidder been fined, penalized or otherwise found to have violated any prevailing wage or labor code provision? If yes, attach description of each occurrence.
Yes _____ No _____

(LICENSE PROVISIONS)

7. Has Bidder changed names or license numbers in the past 5 years? If so, please state reason for change.

Yes _____ No _____ Reason: _____

(DISPUTES)

8. In the past five years, has Bidder on any project that Bidder performed construction services made any written claim against any owner for additional compensation or additional time, that the owner disputed, exceeding on a per project basis an aggregate amount of \$100,000 or 10% of the original contract sum? If yes, attach description of each instance including details of total claim(s) amount, resolution description including amount, and Owner's name and phone number.
Yes _____ No _____
9. In the past five years, has any owner on any project that Bidder performed construction services asserted any written claim against Bidder for delay, defective work, warranty work, backcharges and/or offsets, that the Bidder disputed, exceeding on a per project basis, an aggregate amount of \$100,000 or 10% of the original contract sum? If yes, attach description of each instance including details of total claim(s) amount, resolution description including amount, and Owner's name and phone number.
Yes _____ No _____

(BONDING)

10. Bonding Capacity – Provide documentation from Bidder's surety identifying the following:

Name of bonding company/surety: _____

Name of Surety Agent: _____

Surety Agent address: _____

Surety Agent phone number: _____

Is surety a California-admitted surety? Yes _____ No _____

Is surety listed in the current edition of the California Department of the Treasury’s Listing of approved sureties? Yes _____ No _____

List surety’s A.M. Best Rating: _____

What is Bidder’s total bonding capacity? _____

What percent does Bidder pay for bonds? _____

PART C: EXPERIENCE OF PRIME CONTRACTOR

The nature of this Project requires prior similar experience for the firm and the Key Personnel assigned. Summarize similar project experience below and provide the detailed project information requested:

Prime Contractor

List three (3) projects involving underground utility replacement/installation that involved construction of water facilities of similar size and scope to the Work of the Contract, completed in the past ten years, and provide the name of the superintendent, project manager and scheduler. NOTE: This listing will be used to assess compliance with the stated minimum qualifications in Paragraph 1.01.

Project Name	Construction Cost (\$)	Year Completed	Name of Project Superintendent	Name of Project Manager	Name of Project Scheduler

Key Personnel

List Key Personnel that will be assigned to the Work of the current Project and their experience/training with the projects listed above:

Project Manager: _____

Project Superintendent: _____

Project Scheduler: _____

Recent Projects

Provide information about three (3) of its most currently completed public projects. Names and references must be current and verifiable. This listing will be used to assess compliance with the stated minimum qualifications in Paragraphs 1.01. If a separate sheet is used, it must contain all of the following information:

1. Project Name: _____

Location: _____

Owner: _____

Owner Contact (name and phone): _____

Architect/Engineer: _____

Architect/Engineer Contact (name and phone number): _____

Const. Mgr. or Project Mgr. (name and phone number): _____

Description of Project, Scope of Work Performed: _____

Total Construction Cost: _____

Total Change Order Amount: _____

Did Change Orders exceed 10% of original contract sum? _____ If yes, please explain on separate sheet.

Original Scheduled Date of Completion: _____

Time Extensions Granted (number of Days): _____

Actual Date of Completion: _____

Number of Stop Notices filed by Subcontractors or Suppliers: _____

2. Project Name: _____

Location: _____

Owner: _____

Owner Contact (name and phone): _____

Architect/Engineer: _____

Architect/Engineer Contact (name and phone number): _____

Const. Mgr. Or Project Mgr. (name and phone number): _____

Description of Project, Scope of Work Performed: _____

Total Construction Cost: _____

Total Change Order Amount: _____

Did Change Orders exceed 10% of original contract sum? _____ If yes, please explain on separate sheet.

Original Scheduled Date of Completion: _____

Time Extensions Granted (number of Days): _____

Actual Date of Completion: _____

Number of Stop Notices filed by Subcontractors or Suppliers: _____

3. Project Name: _____

Location: _____

Owner: _____

Owner Contact (name and phone): _____

Architect/Engineer: _____

Architect/Engineer Contact (name and phone number): _____

Const. Mgr. Or Project Mgr. (name and phone number): _____

Description of Project, Scope of Work Performed: _____

Total Construction Cost: _____

Total Change Order Amount: _____

Did Change Orders exceed 10% of original contract sum? _____ If yes, please explain on separate sheet.

Original Scheduled Date of Completion: _____

Time Extensions Granted (number of Days): _____

Actual Date of Completion: _____

Number of Stop Notices filed by Subcontractors or Suppliers: _____

PART D: [INTENTIONALLY OMITTED]

PART E: FINANCIAL INFORMATION

- 1. Has Bidder ever reorganized under the protection of bankruptcy laws?
Yes _____ No _____ If yes, please state when _____
- 2. If Bidder has had the general liability carrier identified in Document 00 43 14 (Bidder Registration and Safety Experience Form) for less than 5 years, please provide additional information below for balance of the last 5 years:

Agency Name: _____

Contact Name: _____

Phone Number _____

Carrier: _____ A.M. Best Rating: _____

Carrier: _____ A.M. Best Rating: _____

Carrier: _____ A.M. Best Rating: _____

- 3. Has Bidder ever had insurance terminated by a carrier? Yes _____ No _____
If yes, explain on a separate signed sheet marked with correlating cross-reference to this paragraph of the questionnaire.

Bidder hereby declares under penalty of perjury that all the information provided in this questionnaire is true and correct.

SIGNATURE

TITLE

END OF DOCUMENT

DOCUMENT 00 45 19

NON-COLLUSION DECLARATION

PUBLIC CONTRACT CODE SECTION 7106

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 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].

BIDDER'S SIGNATURE: _____

NAME/TITLE OF SIGNATORY: _____

LEGAL NAME OF BIDDER: _____

END OF DOCUMENT

DOCUMENT 00 45 46

BIDDER CERTIFICATIONS

TO BE EXECUTED BY ALL BIDDERS AND SUBMITTED WITH BID

The undersigned Bidder certifies to Owner as set forth in sections 1 through 8, below.

1. STATEMENT OF CONVICTIONS

By my signature hereunder, I hereby swear, under penalty of perjury, that no more than one final, unappealable finding of contempt of court by a Federal Court has been issued against Bidder within the past two years because of failure to comply with an order of a Federal Court or to comply with an order of the National Labor Relations Board.

2. CERTIFICATION OF WORKER'S COMPENSATION INSURANCE

By my signature hereunder, as the Contractor, I certify that I am aware of the Labor Code Section 3700, which requires every employer to be insured against liability for worker's compensation or to undertake self-insurance in accordance with the provisions of that Code, and I will comply with such provisions before commencing the performance of the work of this Contract.

3. CERTIFICATION OF PREVAILING WAGE RATES AND RECORDS

By my signature hereunder, as the Contractor, I certify that I am aware of Labor Code Section 1773, which requires the payment of prevailing wage on public projects. Contractor and any subcontractors under the Contractor shall comply with Labor Code Section 1776 regarding wage records, and with Labor Code Section 1777.5 regarding the employment and training of apprentices. Contractor is responsible to ensure compliance by any and all subcontractors performing work under this Contract.

4. CERTIFICATION OF COMPLIANCE WITH PUBLIC WORKS CHAPTER OF LABOR CODE

By my signature hereunder, as the Contractor, I certify that I am aware of Labor Code Sections 1777.1 and 1777.7 Code, and Contractor and Subcontractors are eligible to bid and work on public works projects.

5. CERTIFICATION OF NON-DISCRIMINATION

By my signature hereunder, as the Contractor, I certify that there will be no discrimination in employment with regard to race, color, religion, gender, sexual orientation, age or national origin; that all federal, state, and local directives and executive orders regarding non-discrimination in employment will be complied with; and that the principal of equal opportunity in employment will be demonstrated positively and aggressively.

6. CERTIFICATION OF NON-DISQUALIFICATION

By my signature hereunder, as the Contractor, I swear, under penalty of perjury, that the below indicated Bidder, any officer of Bidder, or any employee of Bidder who has a proprietary interest in such Bidder, has never been disqualified, removed, or otherwise prevented from bidding on, or completing a Federal, State, or local government project because of a violation of law or safety regulation, except as indicated on the separate sheet attached hereto entitled "Previous Disqualifications." If a statement of "Previous Disqualifications" is attached, please explain the circumstances.

7. CERTIFICATION OF ADEQUACY OF CONTRACT AMOUNT

By my signature hereunder, as the Contractor, pursuant to Labor Code Section 2810(a), I certify that, if awarded the Contract based on the undersigned's Bid, the Contract will include funds sufficient to allow the Contractor to comply with all applicable local, state, and federal laws or regulations governing the

labor or services to be provided. I understand that Owner will be relying on this certification if it awards the Contract to the undersigned.

8. CERTIFICATION REGARDING DIR CONTRACTOR / SUBCONTRACTOR REGISTRATION

By my signature hereunder, as the Contractor, I certify that Contractor, and all Subcontractors listed on Document 00 43 36 (Subcontractors List) are the subject of current and active contractor registrations pursuant to Division 2, Part 7, Chapter 1 (commencing with section 1720) of the California Labor Code. Contractor's registration number is *[please complete]* _____. Subcontractors' registration numbers are as indicated in Document 00 43 36.

BIDDER: _____
(Name of Bidder)

Date: _____, [202_] By: _____
(Signature)

Name: _____
(Print Name)

Its: _____
(Title)

END OF DOCUMENT

DOCUMENT 00 45 48

IN-USE OFF-ROAD DIESEL-FUELED FLEETS CERTIFICATION

TO BE EXECUTED BY ALL BIDDERS AND SUBMITTED WITH BID

The undersigned Bidder certifies to Owner as set forth in sections 1 through 2, below.

1. Certification of Compliance. I hereby certify that I and all of my Subcontractors will conform to the California Air Resource Board (CARB) In-Use Off-Road Diesel-Fueled Fleets requirements for all work involving the use of vehicles subject to the regulations, including, without limitation, as applicable, the Contracting Requirements in Title 13 CCR section 2449, subdivision (i), subparts (1) – (4), and the Prime Contractor Requirements in Title 13 CCR section 2449, subdivision (j), subparts (1) – (5).

2. Instructions. Check one (1) box below.

Bidder’s current CARB issued Certificate of Reported Compliance accompanies this Certification. (If this box is checked, the Certificate **must be** provided.)

Bidder certifies that its work on the Project (including work of its Subcontractors) does not involve the use of vehicles subject to the CARB In-Use Off-Road Diesel-Fueled Fleets requirements.

BIDDER: _____
(Name of Bidder)

Date: _____, 2024 By: _____
(Signature)

Name: _____
(Print Name)

Its: _____
(Title)

END OF DOCUMENT

DOCUMENT 00 50 50

NOTICE OF INTENT TO AWARD FOR CONSTRUCTION

(EXAMPLE)

**OLIVEHURST PUBLIC UTILITY DISTRICT
HISTORIC OLIVEHURST PIPELINE REPLACEMENT PROJECT
1970 9TH AVE, OLIVEHURST, CA 95961**

Swarnjit Boyal, the Public Works Engineer of Owner, intends to recommend to Owner's Board the Award of the above-referenced Project to

_____.
(Name of Contractor)

OWNER: OLIVEHURST PUBLIC UTILITY DISTRICT

By: _____

(Print name)

Title: _____

Date: _____

END OF DOCUMENT

DOCUMENT 00 51 00

NOTICE OF AWARD

Dated _____

TO: _____

ADDRESS: _____

CONTRACT NO.: _____

CONTRACT FOR: **OLIVEHURST PUBLIC UTILITY DISTRICT
HISTORIC OLIVEHURST PIPELINE REPLACEMENT PROJECT
1970 9th Ave, Olivehurst, CA 95961**

The Contract Sum of your contract is _____
(Amount in Words)

Dollars (\$ _____)

1. **Two (2)** copies of Document 00 52 00 (Agreement) accompany this Notice of Award.
2. You must comply with the following conditions precedent by **2:00 p.m.** of the **14th Calendar Day** following the date of this Notice of Award.
 - a. Deliver to Owner **Two (2)** fully executed counterparts of Document 00 52 00 (Agreement). Each copy of Document 00 52 00 (Agreement) must bear your original signature on the signature page and your initials on each page.
 - b. Deliver to Owner **Two (2)** fully executed counterpart of Document (00 65 36 Guaranty). 00 65 36 Guaranty must bear your original signature on the signature page and your initials on each page.
 - c. Deliver to Owner original set of the bonds, insurance certificates with endorsements required pursuant to Document 00 21 13 (Instructions to Bidders) and Document 00 52 00 (Agreement).
3. Failure to comply with these conditions within the time specified will entitle Owner to consider your Bid abandoned, to annul this Notice of Award, and to declare your Bid security forfeited.
4. Within **21 Days** after you comply with the conditions in Paragraph 2 of this Document 00 51 00, Owner will return to you one fully signed counterpart of Document 00 52 00 (Agreement).
5. Before you may start any Work at the Site, you must attend a pre-construction conference. The pre-construction conference may be arranged through **Swarnjit Boyal, (530) 682-0736**. Questions regarding bonds and insurance may be directed to **Swarnjit Boyal** at the same number. All other inquiries regarding the Project should be directed to **Jon Phillips @ 530-790-8064 at OPUD and Matthew Domenichelli @ 916-933-1997 at Domenichelli & Associates.**

OWNER: OLIVEHURST PUBLIC UTILITY DISTRICT

BY: _____
[TITLE]

(Print Name)

AUTHORIZED BY DISTRICT _____

RESOLUTION NO.: _____

APPROVED DATE: _____

END OF DOCUMENT

DOCUMENT 00 52 00

**AGREEMENT
(FORM)**

THIS AGREEMENT, dated this **[date]** day of **[Month]**, 2023, by and between **[Enter Name of Contractor]** whose place of business is located at **[Address of Contractor]** (**Contractor**), and **OLIVEHURST PUBLIC UTILITY DISTRICT**, a political subdivision of the State of California (**Owner**), acting under and by virtue of the authority vested in Owner by the laws of the State of California.

WHEREAS, Owner, by its Resolution No. **[Insert Number]** adopted on the **[date]** day of **[Month, Year]** awarded to Contractor the following Contract:

HISTORIC OLIVEHURST PIPELINE REPLACEMENT PROJECT

at 1970 9th Ave., Olivehurst, CA 95961

PROJECT NUMBER 2024-001

NOW, THEREFORE, in consideration of the mutual covenants hereinafter set forth, Contractor and Owner agree as follows:

ARTICLE 1 SCOPE OF WORK OF THE CONTRACT

1.01 Work of the Contract

- A. Contractor shall complete all Work specified in the Contract Documents, in accordance with the Specifications, Drawings, and all other terms and conditions of the Contract Documents (**Work**).

1.02 Price for Completion of the Work

- A. Owner shall pay Contractor the following Contract Sum (**Contract Sum**) for completion of Work in accordance with Contract Documents as set forth in Contractor's Bid, attached hereto.
- B. The Contract Sum includes all allowances (if any).
- C. The Contract Sum is all inclusive and includes all Work; all federal, state, and local taxes on materials and equipment, and labor furnished by Contractor, its subcontractors, subconsultants, architects, engineers, and" vendors or otherwise arising out of Contractor's performance of the Work, including any increases in any such taxes during the term of this Agreement; and any duties, fees, and royalties imposed with respect to any materials and equipment, labor or services. The taxes covered hereby include (but are not limited' to) occupational, sales, use, excise, unemployment, FICA, and income taxes, customs, duties, and any and all other taxes on any item or service that is part of the Work, whether such taxes are normally included in the price of such item or service or are normally stated separately. Notwithstanding the foregoing, each party shall bear such state or local inventory, real property, personal property or fixtures taxes as may be properly assessed against it by applicable taxing authorities.

COMMENCEMENT AND COMPLETION OF WORK

1.03 Commencement of Work

- (**Commencement Date**).
- B. Owner reserves the right to modify or alter the Commencement Date.

- A. Contractor shall achieve Substantial Completion of the entire Work within **150 Calendar** Days from the Commencement Date.
- B. Contractor shall achieve Final Completion of the entire Work within **180 Calendar** from the Commencement Date.

ARTICLE 2 PROJECT REPRESENTATIVES

2.01 Owner’s Project Manager

- A. Owner has designated [] as its Project Manager to act as Owner’s Representative in all matters relating to the Contract Documents. If Project Manager is an employee of Owner, Project Manager is the beneficiary of all Contractor obligations to Owner including, without limitation, all releases and indemnities.
- B. Project Manager shall have final authority over all matters pertaining to the Contract Documents and shall have sole authority to modify the Contract Documents on behalf of Owner, to accept work, and to make decisions or actions binding on Owner, and shall have sole signature authority on behalf of Owner.
- C. Owner may assign all or part of the Project Manager’s rights, responsibilities and duties to a Construction Manager, or other Owner Representative.

2.02 Contractor’s Project Manager and Other Key Personnel

- A. Contractor has designated [] as its Project Manager to act as Contractor’s Representative in all matters relating to the Contract Documents.
- B. Contractor has designated the following other Key Personnel for the Project:

<u>Name</u>	<u>Position</u>
_____	_____
_____	_____
_____	_____

2.03 Owner Rights Regarding its Consultants

- A. Notwithstanding any provision of the Contract Documents that identifies a specific Owner consultant (such as Architect, Construction Manager, or other) to perform one or more specific tasks (such as reviewing Contractor submittals, approving Contractor applications for payment, etc.), as between Owner and Contractor, Owner may, in its sole discretion, either cause the task to be performed by its own forces, or cause it to be performed by any consultant it elects, provided only that tasks requiring a specific license be performed by properly licensed persons. Additionally, as between Owner and Contractor, Owner may change the identity of any of its consultants at any time in its sole discretion, and will provide reasonable notice thereof to Contractor.

ARTICLE 3 LIQUIDATED DAMAGES FOR DELAY IN COMPLETION OF WORK

3.01 Liquidated Damage Amounts

Owner and Contractor recognize that time is of the essence of this Agreement and that Owner will suffer financial loss in the form of Contract administration expenses (such as project management and consultant expenses), if all or any part of the Work is not completed within the times specified above, plus any extensions thereof allowed in accordance with the Contract Documents. Contractor and Owner agree that because of the nature of the Project, it would be impractical or extremely difficult to fix the amount of actual damages incurred by Owner because of a delay in completion of all or any part of the Work.

Accordingly, Owner and Contractor agree that as liquidated damages for delay Contractor shall pay Owner:

- 3.1.1 One thousand, five hundred dollars (\$ 1,500) for each Day that expires after the time specified herein for Contractor to achieve Final Completion of the entire Work, until achieved.

These measures of liquidated damages shall apply cumulatively and except as provided below, shall be presumed to be the damages suffered by Owner resulting from delay in completion of the Work. Contractor and Owner further understand and agree that liquidated damages are not intended to constitute a penalty against Contractor.

- 3.2 Liquidated damages for delay shall only cover administrative, overhead, interest on bonds, and general loss of public use damages suffered by Owner as a result of delay. Liquidated damages shall not cover the cost of completion of the Work, damages resulting from defective work, lost revenues or costs of substitute facilities, or damages suffered by others who then seek to recover their damages from Owner (for example, delay claims of other contractors, subcontractors, tenants, or other third-parties), and defense costs thereof.

- A. It is further agreed that prior to issuance of a Notice of Completion under the terms of this Contract, and as a condition precedent to the Owner's obligation for the issuance of the Notice of Completion and Final Payment, the Contractor shall submit to the Owner a "Maintenance and Warranty Bond" in form of Document 00 61 19 to be valued at ten percent (10%) of the final contract amount. Such Bond shall be in force and valid for a period of one (1) year unless extended.

ARTICLE 4 NOT USED.

ARTICLE 5 CONTRACTOR'S REPRESENTATIONS

In order to induce Owner to enter into this Agreement, Contractor makes the following representations and warranties:

- 5.1 Contractor has visited the Site and has examined thoroughly and understood the nature and extent of the Contract Documents, Work, Site, locality, actual conditions, as-built conditions, and all local conditions, and federal, state and local laws and regulations that in any manner may affect cost, progress, performance or furnishing of Work or which relate to any aspect of the means, methods, techniques, sequences or procedures of construction to be employed by Contractor and safety precautions and programs incident thereto.
- 5.2 Contractor has examined thoroughly and understood all reports of exploration and tests of subsurface conditions, as-built drawings, drawings, products specifications or reports, available for Bidding purposes, of physical conditions, including Underground Facilities, which have been made available for Bidders or which may appear in the Drawings. Contractor accepts the determination set forth in these Documents and Document 00 72 00 of the limited extent of the information contained in such materials upon which Contractor may be entitled to rely. Contractor agrees that except for the information so identified, Contractor does not and shall not rely on any other information contained in such reports and drawings.
- 5.3 Contractor has conducted or obtained and has understood all such examinations, investigations, explorations, tests, reports and studies (in addition to or to supplement those referred to in Section 5.2 of this Agreement) that pertain to the subsurface conditions,

as-built conditions, Underground Facilities and all other physical conditions at or contiguous to the Site or otherwise that may affect the cost, progress, performance or furnishing of Work, as Contractor considers necessary for the performance or furnishing of Work at the Contract Sum, within the Contract Time and in accordance with the other terms and conditions of the Contract Documents, including specifically the provisions of Document 00 72 00; and no additional examinations, investigations, explorations, tests, reports, studies or similar information or data are or will be required by Contractor for such purposes.

- 5.4 Contractor has correlated its knowledge and the results of all such observations, examinations, investigations, explorations, tests, reports and studies with the terms and conditions of the Contract Documents.

ARTICLE 6 CONTRACT DOCUMENTS

- 6.01 Contract Documents consist of the following documents, including all changes, Addenda, and Modifications thereto:

Document 00 51 00	Notice of Award
Document 00 52 00	Agreement
Document 00 55 00	Notice to Proceed
Document 00 61 13.13	Construction Performance Bond
Document 00 61 13.16	Construction Labor and Material Payment Bond
Document 00 62 90	Escrow Agreement for Security Deposits
Document 00 63 25	Substitution Request Form
Document 00 65 30	Release of Claims
Document 00 65 36	Guaranty
Document 00 72 00	General Conditions
Document 00 73 16	Supplemental Conditions – Insurance and Indemnification
Document 00 73 24	CARB IUOR Diesel Fueled Fleets Regulation
Document 00 73 80	Apprenticeship Program
Document 00 91 13	Addenda

Drawings, Table, Schedules, and Technical Specifications listed in Document 00 01

15 Document 01 11 00	Summary of Work
Document 01 20 00	Measurement and Payment
Document 01 26 00	Modification Procedures
Document 01 31 19	Project Meetings
Document 01 32 00	Progress Schedules and Reports
Document 01 33 00	Submittals
Document 01 41 00	Regulatory Requirements
Document 01 42 00	References and Definitions
Document 01 45 23	Testing and Inspection
Document 01 50 00	Temporary Facilities and Controls
Document 01 56 00	Site Security and Safety
Document 01 57 13	Temporary Erosion and Sedimentation Control
Document 01 60 00	Product Requirements
Document 01 74 00	Cleaning and Waste Management
Document 01 77 00	Contract Closeout
Document 01 79 00	Training

- 6.02** There are no Contract Documents other than those listed above. The Contract Documents may only be amended, modified or supplemented as provided in Document 00 72 00 (General Conditions).

ARTICLE 7 MISCELLANEOUS

- 7.01** Terms and abbreviations used in this Agreement are defined in Document 00 7200 (General Conditions) and Section 01 42 00 (References and Definitions) and will have the meaning indicated therein.
- 7.02** Contractor and Owner understand and agree that in no instance are the persons signing this Agreement for or on behalf of Owner or acting as an employee, agent, or representative of Owner, liable on this Agreement or any of the Contract Documents, or upon any warranty of authority, or otherwise. Contractor and Owner further understand and agree that liability of Owner is limited and confined to such liability as authorized or imposed by the Contract Documents or applicable law.
- 7.03** Contractor shall not assign any portion of the Contract Documents without the Owner's prior approval. Any assignment of any portion of the Contract Documents without the Owner's prior written approval shall be deemed null and void. Contractor may subcontract portions of the Contract Documents only in compliance with the Subcontractor Listing Law, California Public Contract Code Section 4100, *et seq.*
- 7.04** Pursuant to Labor Code Section 1771.1(a), Contractor represents that it and all of its Subcontractors are currently registered and qualified to perform public work pursuant to Labor Code Section 1725.5. Contractor covenants that any additional or substitute Subcontractors will be similarly registered and qualified.
- 7.05** In entering into a public works contract or a subcontract to supply goods, services or materials pursuant to a public works contract, 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 4 of the Clayton Act (15 U.S.C. § 15) or under the Cartwright Act (Chapter 2 (commencing with § 16700) 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 Owner tenders final payment to Contractor, without further acknowledgment by the parties.
- 7.06** Copies of the general prevailing rates of per diem wages for each craft, classification, or type of worker needed to execute the Contract, as determined by Director of the State of California Department of Industrial Relations, are on file at the Owner's **Public Works offices**, may be obtained from the California Department of Industrial Relations website [<http://www.dir.ca.gov/OPRL/DPreWageDetermination.htm>] and are deemed included in the Contract Documents, and shall be made available to any interested party on request. Pursuant to Labor Code Sections 1860 and 1861, in accordance with Labor Code Section 3700, every contractor will be required to secure the payment of compensation to Contractor's employees. Contractor represents that it is aware of the provisions of Labor Code Section 3700 that require every employer to be insured against liability for workers' compensation or to undertake self-insurance in accordance with the provisions of that Code, and Contractor shall comply with such provisions before commencing the performance of the Work of the Contract Documents.
- 7.07** Should any part, term or provision of this Agreement or any of the Contract Documents, or any document required herein or therein to be executed or delivered, be declared invalid, void or unenforceable, all remaining parts, terms and provisions shall remain in full force and effect and shall in no way be invalidated, impaired or affected thereby. If the provisions of any law causing such invalidity, illegality or unenforceability may be waived, they are hereby waived to the end that this Agreement and the Contract Documents may be deemed valid and binding agreements, enforceable in accordance with their terms to the greatest extent permitted by applicable law. In the event any provision not otherwise included in the Contract Documents is required to be included by any applicable law, that provision is deemed included herein by this reference (or, if such provision is required to be included in any particular portion of the Contract Documents, that provision is deemed included in that portion).

7.08 This Agreement and the Contract Documents shall be deemed to have been entered into in the City of Olivehurst, State of California, and governed in all respects by California law (excluding choice of law rules). The exclusive venue for all disputes or litigation hereunder shall be in the Superior Court for the County of Yuba, California.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement in quadruplicate on the date and year first-above written.

DISTRICT:

_____, General Manager

ATTEST:

_____, District Clerk

APPROVED AS TO FORM:

_____, OPUD General Counsel

CONTRACTOR:

By: _____
Name:
Title: (If Corporation: Chairman, President
or Vice President)

By: _____
Name:
Title: (If Corporation: Chairman, President
or Vice President)

Address: _____

Two signatures are required if a corporation.

NOTE: CONTRACTOR'S SIGNATURES SHALL BE DULY NOTARIZED, AND APPROPRIATE ATTESTATIONS SHALL BE INCLUDED AS MAY BE REQUIRED BY THE BYLAWS, ARTICLES OF INCORPORATION, OR OTHER RULES OR REGULATIONS APPLICABLE TO CONTRACTOR'S BUSINESS ENTITY.

END OF DOCUMENT

DOCUMENT 00 55 00

NOTICE TO PROCEED (EXAMPLE)

Dated: _____, 20__

To: _____
(Contractor)

Address: _____

**CONTRACT FOR: HISTORIC OLIVEHURST PIPELINE REPLACEMENT PROJECT
1970 9th Ave, Olivehurst, CA 95961**

You are notified that the Contract Time under the above Contract will commence to run on _____ [20__]. On that date, you are to start performing your obligations with respect to Work at the Site under the Contract Documents. In accordance with Article 2 of Document 00 52 00 (Agreement), the dates of Substantial Completion and Final Completion for the entire Work are _____, [20__] and _____, [20__], respectively.

Before you may start any Work at the Site, you must:

1. Submit certified Safety Program and related information;
2. Submit copies of applicable permits;and
3. Attend Pre-construction meeting with all officials

OWNER: OLIVEHURST PUBLIC UTILITY DISTRICT

By: _____

Its: _____

END OF DOCUMENT

DOCUMENT 00 61 13.13

CONSTRUCTION PERFORMANCE BOND (EXAMPLE)

THIS CONSTRUCTION PERFORMANCE BOND (**Bond**) is dated **[Month, Day]**, 202_ is in the amount of **[Insert Amount]** (**Penal Sum**), which is 100% of the Contract Sum and is entered into by and between the parties listed below to ensure the faithful performance of the Contract identified below. This Bond consists of this page and the Bond Terms and Conditions, Paragraphs 1 through 14 attached to this page. Any singular reference to **[Insert name of Contractor]** (**Contractor**), **[Insert name of Surety]** (**Surety**), **OLIVEHURST PUBLIC UTILITY DISTRICT** (**Owner**), or other party shall be considered plural where applicable.

CONTRACTOR:

SURETY:

[Insert name of Contractor]

[Insert name of Surety]

Address

Principal Place of Business

City/State/Zip

City/State/Zip

CONSTRUCTION CONTRACT:

Agreement for the OLIVEHURST PUBLIC UTILITY DISTRICT, located at _____, , dated **[Month, Day]**, 202_, in the amount of **[Insert Amount]**.

CONTRACTOR AS PRINCIPAL

SURETY

Company: (Corp. Seal)

Company: (Corp. Seal)

Signature: _____

Signature: _____

Name: _____

Name: _____

Title: _____

Title: _____

BOND TERMS AND CONDITIONS

1. Contractor and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors and assigns to Owner for the complete and proper performance of the Construction Contract, which is incorporated herein by reference.
2. If Contractor completely and properly performs all of its obligations under the Construction Contract, Surety and Contractor shall have no obligation under this Bond.
3. If there is no Owner Default, Surety's obligation under this Bond shall arise after:
 - 3.1 Owner provides Surety with written notice that Owner has declared a Contractor Default under the Construction Contract pursuant to the terms of the Construction Contract; and
 - 3.2 Owner has agreed to pay the Balance of Contract Sum:
 - 3.2.1 To Surety in accordance with the terms of this Bond and the Construction Contract;
or
 - 3.2.2 To a Contractor selected to perform the Construction Contract in accordance with the terms of this Bond and the Construction Contract.
4. When Owner has satisfied the conditions of Paragraph 3 above, Surety shall promptly (within 40 Days) and at Surety's expense elect to take one of the following actions:
 - 4.1 Arrange for Contractor, with consent of Owner, to perform and complete the Construction Contract (but Owner may withhold consent, in which case the Surety must elect an option described in Paragraphs 4.2, 4.3 or 4.4 below); or
 - 4.2 Undertake to perform and complete the Construction Contract itself, through its agents or through independent contractors or Construction entities; provided, that Surety may not select Contractor as its agent or independent contractor or Contractor without Owner's consent; or
 - 4.3 Undertake to perform and complete the Construction Contract by obtaining bids from qualified contractors or Construction entities acceptable to Owner for a contract for performance and completion of the Construction Contract and, upon determination by Owner of the lowest responsive and responsible Bidder, arrange for a contract to be prepared for execution by Owner and the contractor or Contractor selected with Owner's concurrence, to be secured with performance and payment bonds executed by a qualified surety equivalent to the bonds issued on the Construction Contract; and, if Surety's obligations defined in Paragraph 6 below, exceed the Balance of Contract Sum, then Surety shall pay to Owner the amount of such excess; or
 - 4.4 Waive its right to perform and complete, arrange for completion, or obtain a new contractor or Contractor, and with reasonable promptness under the circumstances and, after investigation and consultation with Owner, determine in good faith its monetary obligation to Owner under Paragraph 6 below, for the performance and completion of the Construction Contract and, as soon as practicable after the amount is determined, tender payment therefor to Owner with full explanation of the payment's calculation. If Owner accepts Surety's tender under this Paragraph 4.4 above, Owner may still hold Surety liable for future damages then unknown or unliquidated resulting from the Contractor Default, as agreed by Owner and Surety at the time of tender. If Owner disputes the amount of Surety's tender under this Paragraph 4.4 above, Owner may exercise all remedies available to it at law to enforce Surety's liability under Paragraphs 6 and 7 below.

5. At all times Owner shall be entitled to enforce any remedy available to Owner at law or under the Construction Contract including, without limitation, and by way of example only, rights to perform work, protect Work, mitigate damages, advance critical Work to mitigate schedule delay, and coordinate Work with other consultants or contractors.
6. If Surety elects to act under Paragraphs 4.1, 4.2 or 4.3 above, within the time period provided in Paragraph 4, above, and complies with its obligations under this Bond, Surety's obligations under this Bond are commensurate with Contractor's Construction Contract obligations. Surety's obligations include, but are not limited to:
 - 6.1 Contractor's obligations to complete the Construction Contract and correct Defective Work;
 - 6.2 Contractor's obligations to pay liquidated damages and for damages for which no liquidated damages are specified in the Construction Contract, actual damages caused by non-performance of the Construction Contract including, but not limited to, all valid and proper backcharges, offsets, payments, indemnities, or other damages; and
 - 6.3 To the extent otherwise required of Contractor under the Construction Contract, Contractor's obligations to pay additional legal, design professional, and other costs not included within liquidated damages resulting from Contractor Default (but excluding attorney's fees incurred to enforce this Bond).
7. If Surety does not elect to act under Paragraphs 4.1, 4.2, 4.3, or 4.4, above, within the time period provided in Paragraph 4, above, or comply with its obligations under this Bond, then Surety shall be deemed to be in default on this Bond ten Days after receipt of an additional written notice from Owner to Surety demanding that Surety perform its obligations under this Bond. Such Surety default shall be independent of the Contractor Default. To the extent Surety's independent default causes Owner to suffer damages including, but not limited to, delay damages, which are different from, or in addition to (but not duplicative of) damages which Owner is entitled to receive under the Construction Contract, Surety shall also be liable for such damages. In the event any Surety obligation following its independent default is inconsistent or conflicts with California Civil Code Section 2809, or any other law which either prohibits, restricts, limits or modifies in any way any obligation of a surety which is larger in amount or in any other respect more burdensome than that of the principal, Surety hereby waives the provisions of such laws to that extent.
8. If Surety elects to act under Paragraphs 4.1, 4.3 or 4.4 above, within the time period provided in Paragraph 4, above, and complies with all obligations under this Bond, Surety's monetary obligation under this Bond is limited to the Penal Sum.
9. No right of action shall accrue on this Bond to any person or entity other than Owner or its successors or assigns.
10. Surety hereby waives notice of any change, alteration or addition to the Construction Contract or to related subcontracts, design agreements, purchase orders and other obligations, including changes of time, and of any Owner action in accordance with Paragraph 5 above. Surety consents to all terms of the Construction Contract, including provisions on changes to the Contract. No extension of time, change, alteration, Modification, deletion, or addition to the Contract Documents, or of the Work (including services) required thereunder, or any Owner action in accordance with Paragraph 5 above shall release or exonerate Surety on this Bond or in any way affect the obligations of Surety on this Bond, unless such action is an Owner Default.
11. Any proceeding, legal or equitable, under this Bond shall be instituted in any court of competent jurisdiction where a proceeding is pending between Owner and Contractor regarding the Construction Contract, or in the Superior Court of the County of Yuba, California, or in a court of competent jurisdiction in the location in which the Work is located. Communications from Owner

to Surety under Paragraph 3.1 above shall be deemed to include the necessary agreements under Paragraph 3.2 above unless expressly stated otherwise.

12. All notices to Surety or Contractor shall be mailed or delivered (at the address set forth on the signature page of this Bond), and all notices to Owner shall be mailed or delivered as provided in Document 00 52 00 (Agreement). Actual receipt of notice by Surety, Owner or Contractor, however accomplished, shall be sufficient compliance as of the date received at the foregoing addresses.
13. Any provision in this Bond conflicting with any statutory or regulatory requirement shall be deemed deleted herefrom and provisions conforming to such statutory requirement shall be deemed incorporated herein.
14. **Definitions**
 - 14.1 **Balance of Contract Sum:** The total amount payable by Owner to Contractor pursuant to the terms of the Construction Contract after all proper adjustments have been made under the Construction Contract, for example, deductions for progress payments made, and increases/decreases for approved Modifications to the Construction Contract.
 - 14.2 **Construction Contract:** The agreement between Owner and Contractor identified on the signature page of this Bond, including all Contract Documents and changes thereto.
 - 14.3 **Contractor Default:** Material failure of Contractor, which has neither been remedied nor waived, to perform or otherwise to comply with the terms of the Construction Contract, limited to "default" or any other condition allowing a termination for cause as provided in Document 00 72 00 (General Conditions).
 - 14.4 **Owner Default:** Material failure of Owner, which has neither been remedied nor waived, to pay Contractor progress payments due under the Construction Contract or to perform other material terms of the Construction Contract, if such failure is the cause of the asserted Contractor Default and is sufficient to justify Contractor termination of the Construction Contract.

END OF DOCUMENT

DOCUMENT 00 61 13.16

CONSTRUCTION LABOR AND MATERIAL PAYMENT BOND (SAMPLE)

KNOW ALL PERSONS BY THESE PRESENTS:

1.01 THAT WHEREAS, **Olivehurst Public Utility District (Owner)** has awarded to **(Name of Contractor)** _____ as Principal, Contract Number _____ dated the _____ day of _____, 202__ (the **Contract**), titled the Historic Olivehurst Pipeline Replacement Project in the amount of \$ _____, which Contract is by this reference made a part hereof, for the work of the following Contract:

Project Number 2024-001 to construct the Historic Olivehurst Pipeline Replacement Project located at 1970 9th Ave, Olivehurst, CA.

1.02 AND WHEREAS, Principal is required to furnish a bond in connection with the Contract to secure the payment of claims of laborers, mechanics, material suppliers, and other persons as provided by law;

1.03 NOW, THEREFORE, we, the undersigned Principal and **(Name of Surety)** _____, as Surety, are held and firmly bound unto Owner in the sum of 100% OF THE CONTRACT PRICE (\$ _____), for which payment well and truly to be made we bind ourselves, our heirs, executors, administrators, successors, and assigns, jointly and severally, firmly by these presents.

1.04 THE CONDITION OF THIS OBLIGATION IS SUCH, that if Principal, or its executors, administrators, successors, or assigns approved by Owner, or its subcontractors shall fail to pay any of the persons named in California Civil Code Section 91 00, or amounts due under the State of California 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 State of California Employment Development Department from the wages of employees of Principal and subcontractors pursuant to Section 13020 of the State of California Unemployment Insurance Code with respect to such work and labor, that Surety will pay for the same in an amount not exceeding the sum specified in this bond, plus reasonable attorneys' fees, otherwise the above obligation shall become and be null and void.

1.05 This bond shall inure to the benefit of any of the persons named in California Civil Code Section 91 00, as to give a right of action to such persons or their assigns in any suit brought upon this bond. The intent of this bond is to comply with the California Mechanic's Lien Law.

1.06 Surety, for value received, hereby expressly agrees that no extension of time, change, modification, alteration, or addition to the undertakings, covenants, terms, conditions, and agreements of the Contract, or to the work to be performed thereunder, shall in any way affect the obligation of this bond; and it does hereby waive notice of any such extension of time, change, modification, alteration, or addition to the undertakings, covenants, terms, conditions, and agreements of the Contract, or to the work to be performed thereunder.

1.07 Surety's obligations hereunder are independent of the obligations of any other surety for the payment of claims of laborers, mechanics, material suppliers, and other persons in connection with Contract; and suit may be brought against Surety and such other sureties, jointly and severally, or

against any one or more of them, or against less than all of them without impairing Owner's rights against the other.

1.08 Correspondence or claims relating to this bond shall be sent to Surety at the address set forth below.

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

CONTRACTOR AS PRINCIPAL

SURETY

Company: (Corp. Seal)

Company: (Corp. Seal)

Signature

Signature

Name

Name

Title

Title

Street Address

Street Address

City, State, Zip Code

City, State, Zip Code

END OF DOCUMENT

DOCUMENT 00 62 90

ESCROW AGREEMENT FOR SECURITY DEPOSIT IN LIEU OF RETENTION (SAMPLE)

Public Contract Code Section 22300

THIS ESCROW AGREEMENT (“**Escrow Agreement**”) is made and entered into this ___ day of _____, 202_, by and between **OLIVEHURST PUBLIC UTILITY DISTRICT** (“**Owner**”), whose address is **1970 9th Avenue**, Olivehurst CA, [**Name of Contractor**] (“**Contractor**”), whose principal place of business is located at [**Contractor’s Address**], and Owner, as escrow agent [**OR**] [**Name of Bank**], a state or federally chartered bank in the State of California, whose place of business is located at [**Address**] (“**Escrow Agent**”).

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

1. Pursuant to Public Contract Code Section 22300, Contractor has the option to deposit securities with Escrow Agent as a substitute for retention earnings required to be withheld by Owner pursuant to Contract Number _____ entered into between Owner and Contractor for the Civic Center Campus Facilities Project in the amount of \$_____ dated _____, 20__ (the “**Contract**”). Alternatively, on written request of Contractor, Owner shall make payments of the retention earnings directly to Escrow Agent. When Contractor deposits the securities as a substitute for Contract earnings, Escrow Agent shall notify Owner within ten Days of the deposit. The market value of the securities at the time of substitution shall be at least equal to the cash amount then required to be withheld as retention under terms of Contract between Owner and Contractor. Securities shall be held in name of _____, and shall designate Contractor as the beneficial owner.
2. Owner shall make progress payments to Contractor for those funds which otherwise would be withheld from progress payments pursuant to Contract provisions, provided that Escrow Agent holds securities in form and amount specified in Paragraph 1 of this Document 00 62 90.
3. When Owner makes payment(s) of retention earned directly to Escrow Agent, Escrow Agent shall hold said payment(s) for the benefit of Contractor until the time that the escrow created under this Escrow Agreement is terminated. Contractor may direct the investment of the payments into securities. All terms and conditions of this Escrow Agreement and the rights and responsibilities of the parties shall be equally applicable and binding when Owner pays 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 Owner. Such expenses and payment terms shall be determined by Owner, Contractor, and Escrow Agent.
5. Interest earned on securities or money market accounts held in escrow and all interest earned on that interest shall be for sole account of Contractor and shall be subject to withdrawal by Contractor at any time and from time to time without notice to 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 Owner to Escrow Agent that Owner consents to withdrawal of amount sought to be withdrawn by Contractor.
7. Owner shall have the right to draw upon the securities in event of default by Contractor. Upon seven Days written notice to Escrow Agent from Owner of the default, Escrow Agent shall immediately convert the securities to cash and shall distribute the cash as instructed by Owner.
8. Upon receipt of written notification from Owner certifying that the Contract is final and complete, and that 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 written notifications from Owner and Contractor pursuant to Paragraphs 5 through 8, inclusive, of this Document 00 62 90 and Owner and Contractor shall hold Escrow Agent harmless from Escrow Agent's release and disbursement of securities and interest as set forth.
- 10. Names of persons who are authorized to give written notice or to receive written notice on behalf of 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

Name

Signature

Address

City/State/Zip Code

Title

Name

Signature

Address

City/State/Zip Code

ON BEHALF OF ESCROW AGENT:

Title

Name

Signature

Address

City/State/Zip Code

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

OWNER:

CONTRACTOR

OLIVEHURST PUBLIC UTILITY DISTRICT

Title

Name

Signature

Title

Name

Signature

ATTEST

Signature

Print Name

Secretary

ESCROW AGENT

Title

Print Name

Signature

REVIEWED AS TO FORM:

Counsel for Owner

Print Name

Date

At the time the Escrow Account is opened, Owner and Contractor shall deliver to Escrow Agent a fully executed counterpart of this Document 00 6290.

END OF DOCUMENT

DOCUMENT 00 63 25

SUBSTITUTION REQUEST FORM (SAMPLE)

To: **OLIVEHURST PUBLIC UTILITY DISTRICT PROJECT, Owner**

PROJECT: OLIVEHURST PUBLIC UTILITY DISTRICT PROJECT	Contractor:
Owner Project No: 2024-001	

Substitution Request By:	Firm:
--------------------------	-------

Transmittal Record	Attn:	Firm:	Date Sent:	Date Rec'd:	Date Due:
Contractor to Owner					
Contractor to Architect					
Owner / Architect to Consultant					
Architect to Owner Representative					
Owner Representative to Contractor					

We hereby submit for your consideration the following product instead of the specified item for the Project:

Section / Drawing	Article	Specified Item
Proposed Substitution:		

We have (a) attached manufacturer's literature, including complete technical data and laboratory test results, if applicable, (b) attached an explanation of why proposed substitution is a true equivalent to specified item, (c) included complete information on changes to Contract Documents that the proposed substitution will require for its proper installation, and (d) filled in the blanks below:

Contractor to complete questions that follow and certify to the accuracy of all answers:

A.	Does the substitution affect dimensions shown on Drawings? Yes ___ / No ___. If No, please explain proposed mitigation and why substitution is equivalent to originally specified item:
B.	Will the undersigned pay for changes to the building design, including engineering and detailing costs caused by the requested substitution? Yes ___ / No ___. If No, please state reasons explain why substitution is equivalent to originally specified item:
C.	What effect does the substitution have on other trades? No effect: ___ / Some effect ___. If substitution will affect other trades, please explain the effect and why substitution is equivalent to originally specified item:
D.	Will substitution cause change to Project Schedule, or to critical delivery dates? Add? Shorten? If the substitution will add to schedule dates or affect critical activities, please explain why substitution is equivalent to originally specified item:
E.	Please describe differences between proposed substitution and specified item? Please explain and identify any and all differences, and please explain why substitution is equivalent to originally specified item:
F.	What is the Cost Differential to Contractor in original specified item and proposed substitution including all mark-ups? [If substitution requested during bid period, skip this question.]
G.	Are Manufacturer's guarantees for the proposed item the same as for item specified? Yes ____; No _____. If No, please explain why substitution is equivalent to originally specified item:

H. Contractor accepts full responsibility for delays caused by redesign of other items of the Work necessitated by substitution? Yes ___ / No ___. If No, please state reasons and explain why substitution is equivalent to originally specified item:

I. Contractor states that the function, appearance and quality are equivalent or superior to the specified item? Yes ___ / No ___. If No, please explain why substitution is equivalent to originally specified item:

We certify that the function, appearance, and quality of the proposed substitution are equivalent or superior to those of the specified item, except as we may specifically state otherwise in this request.

Submitted by: _____ Signature: _____

Firm: _____ Date: _____

Address: _____ Phone / Fax: _____

Remarks: _____

Consultant Response

Accepted

Not Accepted

Accepted As Noted

Received Too Late

Remarks: _____

By: _____

Owner Representative Response

Accepted

Not Accepted

Accepted As Noted

Received Too Late

Remarks: _____

By: _____

END OF DOCUMENT

DOCUMENT 00 6530

AGREEMENT AND RELEASE OF ANY AND ALL CLAIMS
[Public Contract Code Section 7100]

THIS AGREEMENT AND RELEASE OF ANY AND ALL CLAIMS (**Agreement and Release**), made and entered into this [date] day of [Month], [202], by and between **OLIVEHURST PUBLIC UTILITY DISTRICT (Owner)**, and [Enter Name of Contractor] (**Contractor**), whose place of business is at [Enter Address of Contractor].

RECITALS

- A. Owner and Contractor entered into Contract (the “**Contract**”) for construction of Historic Olivehurst Pipeline Replacement Project, located at **1970 9th Ave., Olivehurst, CA 95961**.
- B. The Work under the Contract has been completed.

AGREEMENT

NOW THEREFORE, it is mutually agreed between Owner and Contractor as follows:

- 1. Contractor will not be assessed liquidated damages except as detailed below:

Original Contract Sum	\$	_____
Modified Contract Sum	\$	_____
Payment to Date	\$	_____
Liquidated Damages	\$	_____
Payment Due Contractor	\$	_____
- 2. Subject to the provisions of this Agreement and Release, Owner will forthwith pay to Contractor the sum of [_____] Dollars and [_____] Cents (\$ _____) under the Contract, less any amounts withheld under the Contract or represented by any Notice to Withhold Funds on file with Owner as of the date of such payment.
- 3. Contractor acknowledges and hereby agrees that there are no unresolved or outstanding claims in dispute against Owner arising from the Contract, except for the claims described in Paragraph 4 of this Document 00 6530. It is the intention of the parties in executing this Agreement and Release that this Agreement and Release shall be effective as a full, final and general release of all claims, demands, actions, causes of action, obligations, costs, expenses, damages, losses and liabilities of Contractor against Owner, and all if its agents, employees, consultants, inspectors, representatives, assignees and transferees, except for the Disputed Claims set forth in Paragraph 4 of this Document 00 6530. Nothing in this Agreement and Release shall limit or modify Contractor’s continuing obligations described in Paragraph 6 of this Document 00 6530.
- 4. The following claims submitted under Document 00 7200 (General Conditions), Article 12, are disputed (**Disputed Claims**) and are specifically excluded from the operation of this Agreement and Release.

[Insert information in Chart below, affix attachment if necessary]

CLAIM NO.	DATE SUBMITTED	DESCRIPTION OF CLAIM	AMOUNT OF CLAIM

5. Consistent with California Public Contract Code Section 7100, Contractor hereby agrees that, in consideration of the payment set forth in Paragraph 2 of this Document 00 6530, Contractor hereby releases and forever discharges Owner, and all of its agents, employees, consultants, inspectors, assignees and transferees from any and all liability, claims, demands, actions or causes of action of whatever kind or nature arising out of or in any way concerned with the Work under the Contract.
6. Guarantees and warranties for the Work, and any other continuing obligation of Contractor, shall remain in full force and effect as specified in the Contract Documents.
7. Contractor shall immediately defend, indemnify and hold harmless Owner, any of the Owner's Representatives, Project Manager, and all of their agents, employees, consultants, inspectors, assignees and transferees, from any and all claims, demands, actions, causes of action, obligations, costs, expenses, damages, losses and liabilities that may be asserted against them by any of Contractor's suppliers and/or Subcontractors of any tier and/or any suppliers to them for any and all labor, materials, supplies and equipment used, or contemplated to be used in the performance of the Contract, except for the Disputed Claims set forth in Paragraph 4 of this Document 00 6530.
8. Contractor hereby waives the provisions of California Civil Code Section 1542, which provide as follows:

A GENERAL RELEASE DOES NOT EXTEND TO CLAIMS THAT THE CREDITOR OR RELEASING PARTY DOES NOT KNOW OR SUSPECT TO EXIST IN HIS OR HER FAVOR AT THE TIME OF EXECUTING THE RELEASE AND THAT, IF KNOWN BY HIM OR HER, WOULD HAVE MATERIALLY AFFECTED HIS OR HER SETTLEMENT WITH THE DEBTOR OR RELEASED PARTY.
9. The provisions of this Agreement and Release are contractual in nature and not mere recitals and shall be considered independent and severable, and if any such provision or any part thereof shall be at any time held invalid in whole or in part under any federal, state, county, municipal or other law, ruling, or regulation, then such provision, or part thereof shall remain in force and effect only to the extent permitted by law, and the remaining provisions of this Agreement and Release shall also remain in full force and effect, and shall be enforceable.
10. Contractor represents and warrants that it is the true and lawful owner of all claims and other matters released pursuant to this Agreement and Release, and that it has full right, title and authority to enter into this instrument. Each party represents and warrants that it has been represented by counsel of its own choosing in connection with this Agreement and Release.

11. All rights of Owner shall survive completion of the Work or termination of the Contract, and execution of this Agreement and Release.

***** CAUTION: THIS IS A RELEASE - READ BEFORE EXECUTING *****

OWNER: OLIVEHURST PUBLIC UTILITY DISTRICT PROJECT

By: _____
Signature

Name: _____
Print

Its: _____
Title

[CONTRACTOR]

By: _____
Signature

Name: _____
Print

Its: _____
Title

[CONTRACTOR]

By: _____
Signature

Name: _____
Print

Its: _____
Title

[IF REQUIRED] REVIEWED AS TO FORM:

Dated: _____, [20__]

By: _____
Counsel for Owner

Name: _____
Print

END OF DOCUMENT

DOCUMENT 00 65 36

GUARANTY

TO: The **OLIVEHURST PUBLIC UTILITY DISTRICT PROJECT (Owner)**, for construction of the Historic Olivehurst Pipeline Replacement Project, located throughout Historic Olivehurst, CA.

The undersigned guarantees all construction performed on this Project and also guarantees all material and equipment incorporated therein.

- 1.01** Contractor hereby grants to Owner for a period of **one year** following the date of Final Acceptance of the Work completed, or such longer period specified in the Contract Documents, its unconditional warranty of the quality and adequacy of all of the Work including, without limitation, all labor, materials and equipment provided by Contractor and its Subcontractors of all tiers in connection with the Work.
- 1.02** Neither final payment nor use nor occupancy of the Work performed by the Contractor shall constitute an acceptance of Work not done in accordance with this Guaranty or relieve Contractor of liability in respect to any express warranties or responsibilities for faulty materials or workmanship. Contractor shall remedy any defects in the Work and pay for any damage resulting therefrom, which shall appear within **one year**, or longer if specified, from the date of Final Acceptance of the Work completed.
- 1.03** If within **one year** after the date of Final Acceptance, or such other period of time as may be prescribed by laws or regulations, or by the terms of Contract Documents or any extended warranty or guaranty, any Work is found to be Defective, Contractor shall promptly, without cost to Owner and in accordance with Owner's written instructions, correct such Defective Work. Contractor shall remove any Defective Work rejected by Owner and replace it with Work that is not Defective, and satisfactorily correct or remove and replace any damage to other Work or the work of others resulting therefrom. If Contractor fails to comply promptly with the terms of such instructions, or in an emergency where delay would cause serious risk of loss or damage, Owner may have the Defective Work corrected or the rejected Work removed and replaced. Contractor shall pay for all claims, costs, losses and damages caused by or resulting from such removal and replacement. Where Contractor fails to correct Defective Work, or defects are discovered outside the correction period, Owner shall have all rights and remedies granted by law.
- 1.04** Contractor shall respond within 72 hours to any claim made by Owner pursuant to this guaranty.
- 1.05** Observation and inspection of the Work shall not relieve Contractor of any of its obligations under the Contract Documents. Even though equipment, materials, or Work required to be provided under the Contract Documents have been inspected, accepted, and estimated for payment, Contractor shall, at its own expense, replace or repair any such equipment, material, or Work found to be Defective or otherwise not to comply with the requirements of the Contract Documents up to the end of the guaranty period.
- 1.06** This Guaranty is in addition to any other Contractor warranties contained in the Contract Documents, and not in lieu of, any and all other Contractor liability imposed under the Contract Documents or at law. In the event of any conflict or inconsistency between the terms of this Guaranty and any Contractor warranty or obligation Contractor under the Contract Documents or at law, such inconsistency or conflict shall be resolved in favor of the greater protection to Owner.

(Signature line on next page)

Date: _____, 20__

Contractor's Name

By: _____
Signature

Print Name

Title

Street Address

City, State, Zip code

END OF DOCUMENT

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GENERAL CONDITIONS

ARTICLE 1 - INTERPRETATION OF CONTRACT DOCUMENTS

1.01 Interpretation of Documents

- A. Contract Documents are complementary; what is called for by one is as binding as if called for by all.
- B. Individual Contract Documents subdivide at first level into Articles, and then into paragraphs.

1.02 Order of Precedence of Documents

- A. In the case of discrepancy or ambiguity in the Contract Documents, the following order of precedence shall prevail:
 - 1. Modifications in inverse chronological order (i.e., most recent first), and in the same order as specific portions they are modifying;
 - 2. Contract Forms (Document 00 52 00 and other 50 00 and 60 00 series Documents), and terms and conditions referenced therein;
 - 3. Supplemental General Conditions (Document 00 73 01 and other 73 00 series Documents), if included;
 - 4. General Conditions (Document 00 72 00);
 - 5. Division 01 General Requirements, if included;
 - 6. Drawings and Technical Specifications (Division 02 and above);
 - 7. Written words over figures, unless obviously incorrect;
 - 8. Figured dimensions over scaled dimensions;
 - 9. Large-scale Drawings over small-scale Drawings.
- B. Any conflict between Drawings and Technical Specifications (Division 2 and above) will be resolved in favor of the document of the latest date (i.e., the most recent document), and if the dates are the same or not determinable, then in favor of Specifications.
- C. Any conflict between a bill or list of materials shown in the Contract Documents and the actual quantities required to complete Work required by Contract Documents, will be resolved in favor of the actual quantities.
- D. All Technical Specifications included in the Project manual shall be included within the Contract Documents unless identified otherwise.

ARTICLE 2 - PRE-BID INVESTIGATIONS

2.01 Pre-Bid Investigations Required

- A. Prior to and as a condition of submitting a Bid and executing Document 00 52 00 (Agreement), Contractor shall make reasonable efforts to investigate fully the Work of the Contract. Contractor shall visit the Site, examine thoroughly and understand fully the nature and extent of the Contract Documents, Work, Site, locality, actual conditions and as-built conditions.
- B. Contractor's investigation shall include, without limitation, requesting and thoroughly examining of all reports of exploration and tests of subsurface conditions, as-built drawings, drawings, product specification(s) or reports, made available by Owner for pre-bidding or contracting purposes or during Contractor's pre-bid investigations, of existing above ground and (to the extent applicable) below ground conditions (together, **Existing Conditions Data**), including, as applicable, Underground Facilities, geotechnical data, as-built data, utility surveys, record documents of all types, hazardous materials surveys, or similar materials which may appear or be referenced in the Project Manual or the in the Contract Documents, and all local conditions, and federal, state and local laws and regulations that in any manner may affect cost, progress, performance or furnishing of Work or which relate to any aspect of the means, methods, techniques, sequences or procedures of construction to be employed by Contractor and safety precautions and programs incident thereto.
- C. Contractor's investigations shall consider fully the fact that Existing Conditions Data is in many cases based on information furnished to Owner by others (e.g., the prior owner or builders), and that due to their age or their chain of custody since preparation, may not meet current industry standards for accuracy. Contractor shall also: (i.) provide Owner with prompt written notice of all

conflicts, errors, ambiguities, or discrepancies of any type, that it discovered in or among the Contract Documents and the Existing Conditions Data, and (ii.) subject to Owner's approval, conduct any such additional or supplementary examinations, investigations, explorations, tests, studies and data compilations, concerning conditions (surface, subsurface, and Underground Facilities) at or contiguous to the Site or otherwise, which Contractor may deem necessary in order to perform and furnish the Work in accordance with the terms and conditions of Contract Documents.

- D. During performance of the Contract, Contractor will be charged with knowledge of all information that it should have learned in performing these pre-bid investigations and other obligations, and shall not be entitled to Change Orders (time or compensation) due to any information, error, inconsistency, omission, or conditions that Contractor should have known as a part of this Work. Contractor shall be responsible for the resultant losses, including, without limitation, the cost of correcting Defective Work.

2.02 Limited Reliance Permitted On Owner's Existing Conditions Data

- A. Regarding aboveground and as-built conditions shown on the Contract Documents or supplied by Owner, such information has been compiled in good faith, however, Owner does not expressly or impliedly warrant or represent that such information is correctly shown or indicated, or otherwise complete for construction purposes. Contractor must independently verify such information as part of its pre-bid investigations, and where conditions are not reasonably verifiable or discrepancies are identified, bring such matters to Owner's attention through written question issued during the bid period. In executing Document 00 52 00 (Agreement), Contractor shall rely on the results of its own independent investigation and shall not rely on Owner-supplied information regarding aboveground conditions and as-built conditions, and Contractor shall accept full responsibility for its verification work sufficient to complete the Work as intended.
- B. Regarding subsurface conditions other than Underground Facilities shown on the Contract Documents or otherwise supplied by Owner, Contractor may rely only upon the general accuracy of actual reported depths, actual reported character of materials, actual reported soil types, actual reported water conditions, or actual obstructions shown or indicated in the Contract Documents. Owner is not responsible for the completeness of any subsurface condition information, Contractor's conclusions or opinions drawn from any subsurface condition information, or subsurface conditions that are not specifically shown. (For example, Owner is not responsible for soil conditions in areas contiguous to areas where a subsurface condition is shown.)

2.03 Pre-Bid Investigation Requirements For Excavation and Utilities Relocation Projects

- A. As part of its pre-bid investigations for Projects involving excavation and/or relocation of existing utilities, Contractor shall make reasonable efforts to verify information regarding Underground Facilities including, without limitation, requesting additional information or verification of information as necessary.
- B. Because of the nature and location of Owner and the Project, the existence of Underground Facilities is deemed inherent in the Work of the Contract, as is the fact that Underground Facilities are not always accurately shown or completely shown on as-built records, both as to their depth and location. Contractor shall, therefore, take care to note the existence and potential existence of Underground Facilities, in particular, above and below grade structures, drainage lines, storm drains, sewers, water, gas, electrical, chemical, hot water, and other similar items and utilities. Contractor shall carefully consider all supplied information, request additional information Contractor may deem necessary, and visually inspect the Site for above ground indications of Underground Facilities (such as, for example not by way of limitation, the existence of existing service laterals, appurtenances or other types of utilities, indicated by the presence of an underground transmission main or other visible facilities, such as buildings, manholes, new asphalt, meters and junction boxes, on or adjacent to the Site). Contractor shall also consider local underground conditions and typical practices for Underground Facilities, either through its own direct knowledge or through its subcontractors, and fully consider this knowledge in assessing the existing information and the reasonableness of its reliance.

ARTICLE 3 - SUBCONTRACTORS

3.01 Subcontractor Listing Law

- A. Contractor shall comply with the Subcontractor Listing law, Public Contract Code Sections 4101, et seq. Contractor shall not substitute any other person or firm in place of any Subcontractor listed in the Bid except as may be allowed by law.
- B. Subcontractors shall not assign or transfer their subcontracts or permit them to be performed by any other contractor without Owner's written approval. At Owner's request, Contractor shall provide Owner with a complete copy of all executed subcontracts or final commercial agreements with Subcontractors and/or suppliers.

3.02 Subcontracts

- A. Subcontract agreements shall preserve and protect the rights of Owner under the Contract Documents so that subcontracting will not prejudice such rights. To the extent of the Work to be performed by a Subcontractor, Contractor shall require the Subcontractor's written agreement (i) to be bound to the terms of Contract Documents and (ii) to assume vis-à-vis Contractor all the obligations and responsibilities that Contractor assumes toward Owner under the Contract Documents. (These agreements include, without limitation, all warranties, claims procedures and rules governing submittals of all types to which Contractor is subject under the Contract Documents.)
- B. Contractor shall provide for the assignment to Owner of all rights any Subcontractor (of any tier) may have against any manufacturer, supplier, or distributor for breach of warranties and guarantees relating to the Work performed by the Subcontractor under the Contract Documents. Subcontracts shall provide and acknowledge Owner as an intended third-party beneficiary of each subcontract and supply contract (of any tier).
- C. Nothing contained in the Contract Documents shall create any contractual relationship between any subcontractor and Owner. If a legal action, including arbitration and litigation, against Owner is initiated by a subcontractor or supplier, Contractor shall reimburse Owner for the amount of Owner's attorney's fees and costs, engineering and all other expenses incurred by Owner in defending itself in said action.
- D. Owner reserves the right to approve all subcontractors. Such approval shall be a consideration to the awarding of the Agreement and unless notification to the contrary is given to the Contractor prior to the signing of the Agreement, the list of subcontractors that is submitted with its proposal will be deemed to be acceptable.

ARTICLE 4 - DRAWINGS AND SPECIFICATIONS

4.01 Intent of Drawings and Specifications

- A. Contractor shall interpret words or phrases used to describe Work (including services), materials, or equipment that have well-known technical or construction industry or trade meaning in accordance with that meaning. Drawings' intent specifically includes the intent to depict construction that complies with all applicable laws, codes and standards.
- B. As part of the **Work**, Contractor shall provide all labor, materials, equipment, machinery, tools, facilities, services, employee training and testing, hoisting facilities, Shop Drawings, storage, testing, security, transportation, disposal, the securing of all necessary or required field dimensions, the cutting or patching of existing materials, notices, permits, documents, reports, agreements and any other items required or necessary to timely and fully complete Work described and the results intended by Contract Documents and, in particular, Drawings and Specifications. Divisions and Specification Sections and the identification on any Drawings shall not control Contractor in dividing Work among Subcontractors or suppliers or delineating the Work to be performed by any specific trade.
- C. Contractor shall perform reasonably implied parts of Work as **incidental work** although absent from Drawings and Specifications. Incidental work includes any work not shown on Drawings or described in Specifications that is necessary or normally or customarily required as a part of the Work shown on Drawings or described in Specifications. Incidental work includes any work necessary or required to make each installation satisfactory, legally operable, functional, and

consistent with the intent of Drawings and Specifications or the requirements of Contract Documents. Contractor shall perform incidental work without extra cost to Owner. Incidental work shall be treated as if fully described in Specifications and shown on Drawings, and the expense of incidental work shall be included in price Bid and Contract Sum.

4.02 Checking of Drawings and Specifications

- A. Before undertaking each part of Work, Contractor shall carefully study and compare Contract Documents and check and verify pertinent figures shown in the Contract Documents and all applicable field measurements. Contractor shall be responsible for any errors that might have been avoided by such comparison. Figures shown on Drawings shall be followed; Contractor shall not scale measurements. Contractor shall promptly report to Owner, in writing, any conflict, error, ambiguity or discrepancy that Contractor may discover. Contractor shall obtain a written interpretation or clarification from Owner before proceeding with any Work affected thereby. Contractor shall provide Owner with a follow-up correspondence every ten Days until it receives a satisfactory interpretation or clarification.

4.03 Interpretation of Drawings and Specifications

- A. A typical or representative detail on Drawings shall constitute the standard for workmanship and material throughout corresponding parts of Work. Where necessary, and where reasonably inferable from Drawings, Contractor shall adapt such representative detail for application to such corresponding parts of Work. The details of such adaptation shall be subject to prior approval by Owner. Repetitive features shown in outline on Drawings shall be in exact accordance with corresponding features completely shown.
- B. Should any discrepancy appear or any misunderstanding arise as to the import of anything contained in Drawings and Specifications, or should Contractor have any questions or requests relating to Drawings or Specifications, Contractor shall refer the matter to Owner, in writing, with a copy to the Architect/Engineer. Owner will issue (or cause to be issued) with reasonable promptness written responses, clarifications or interpretations as Owner may determine necessary. All written responses, clarifications and interpretations under this Paragraph shall be consistent with the intent of and be reasonably inferable from Contract Documents, and binding upon Contractor. If Contractor believes that a written response, clarification or interpretation justifies an adjustment in the Contract Sum or Contract Time, Contractor shall give Owner prompt written notice. If the parties are unable to agree to the amount or extent of the adjustment, if any, then Contractor shall perform the Work in conformance with Owner's response, clarification, or interpretation and may make a written claim for the adjustment as provided in Article 12.
- C. The following general specifications shall apply wherever in the Specifications, or in any directions given by Owner in accordance with or supplementing Specifications, it is provided that Contractor shall furnish materials or manufactured articles or shall do Work for which no detailed specifications are shown. Materials or manufactured articles shall be of the best grade, in quality and workmanship, obtainable in the market from firms of established good reputation. If not ordinarily carried in stock, the materials or manufactured articles shall conform to industry standards for first class materials or articles of the kind required, with due consideration of the use to which they are to be put. Work shall conform to the usual standards or codes, such as those cited herein, for first class work of the kind required. Contractor shall specify in writing to Owner, at least 10 Business Days prior to furnishing such materials or performing such Work, the materials to be used or Work to be performed under this Paragraph.

4.04 Use of Drawings and Specifications

- A. Drawings, Specifications and other Contract Documents were prepared for use for Work of Contract Documents only. No part of Contract Documents shall be used for any other construction or for any other purpose except with the written consent of Owner. Any unauthorized use of Contract Documents is prohibited and at the sole liability of the user.

ARTICLE 5 - COMMENCEMENT OF THE WORK

5.01 Submission of Required Schedules

- A. Unless otherwise indicated in Contract Documents, Contractor shall submit to Owner in draft for review and discussion at the Preconstruction Conference, and in final prior to the first payment application, the following schedules:
 - 1. Schedule of Values;
 - 2. Progress Schedule, and
 - 3. Schedule of Submittals.
- B. No progress payment shall be due or owing to Contractor until such schedules are submitted to and acceptable to Owner and/or Architect/Engineer as meeting the requirements of the Contract Documents. In Owner's sole discretion, Owner may elect to instead withhold a portion of any progress payment for unacceptable compliance with contract requirements for such schedules.
- C. Owner's acceptance of Contractor's schedules will not create any duty of care or impose on Owner any responsibility for the sequencing, scheduling or progress of Work, nor will it interfere with or relieve Contractor from Contractor's full responsibility therefore.

5.02 Commencement Date of Contract Time

- A. The Contract Time will commence to run on the 30th Day after the issuance of the Notice of Award or, if a Notice to Proceed is given, on the date indicated in the Notice to Proceed.
- B. Owner may give a Notice to Proceed at any time within 30 Days after the Notice of Award. Contractor shall not do any Work at the Site prior to the date on which the Contract Time commences to run.

ARTICLE 6 - CONTRACTOR'S ORGANIZATION AND EQUIPMENT

6.01 Contractor's Legal Address

- A. Address and facsimile number given in Contractor's Bid are hereby designated as Contractor's legal address and facsimile number. Contractor may change its legal address and facsimile number by notice in writing, delivered to Owner, which in conspicuous language advises Owner of a change in legal address or facsimile number, and which Owner accepts in writing. Delivery to Contractor's legal address or depositing in any post office or post office box regularly maintained by the United States Postal Service, in a wrapper with postage affixed, directed to Contractor at Contractor's legal address, or of any drawings, notice, letter or other communication, shall be deemed legal and sufficient service thereof upon Contractor. Facsimile to Contractor's designated facsimile number of any letter, memorandum, or other communication on standard or legal sized paper, with proof of facsimile transmission, shall be deemed legal and sufficient service thereof upon Contractor.

6.02 Contractor's Superintendents or Forepersons

- A. Contractor shall at all times be represented on Site by one or more superintendents or forepersons authorized and competent to receive and carry out any instructions that Owner may give, and shall be liable for faithful observance of instructions delivered to Contractor or to authorized representative or representatives on Site.

6.03 Proficiency In English

- A. Supervisors, security guards, safety personnel and employees who have unescorted access to the Site shall possess proficiency in the English language in order to understand, receive and carry out oral and written communications or instructions relating to their job functions, including safety and security requirements.

6.04 Contractor's and Subcontractors' Employees

- A. Contractor shall employ, and shall permit its Subcontractors to employ, only competent and skillful personnel to do Work. If Owner notifies Contractor that any of its employees, or any of its Subcontractors' employees on Work is incompetent, unfaithful, disorderly or profane, or fails to observe customary standards of conduct or refuses to carry out any provision of the Contract Documents, or uses threatening or abusive language to any person on Work representing Owner, or violates sanitary rules, or is otherwise unsatisfactory, and if Owner requests that such person be

discharged from Work, then Contractor or its Subcontractor shall immediately discharge such person from Work and the discharged person shall not be re-employed on the Work except with consent of Owner. Such discharge shall not be the basis for any claim for compensation or damages against Owner or any of its officers, directors, employees or agents.

6.05 Contractor's Use of The Site

- A. Contractor shall not make any arrangements with any person to permit occupancy or use of any land, structure or building within the limits of the Work, for any purpose whatsoever, either with or without compensation, in conflict with any agreement between Owner and any owner, former owner or tenant of such land, structure or buildings. Contractor may not occupy Owner-owned property outside the limit of the Work as indicated on the Drawings unless it obtains prior approval from Owner.

6.06 Contractor's Site Office

- A. Unless expressly provided otherwise in the Contract Documents, Contractor shall provide a site office staffed by a resident project manager or job superintendent.

ARTICLE 7 - OWNER'S ADMINISTRATION OF WORK

7.01 Owner's Representative(s)

- A. Owner's Representative(s) will have limited authority to act on behalf of Owner as set forth in the Contract Documents.
- B. Except as otherwise provided in these Contract Documents or subsequently identified in writing by Owner, Owner will issue all communications to Contractor through Owner's Representative, and Contractor shall issue all communications to Owner through Owner's Representative in a written document delivered to Owner.
- C. Should any direct communications between Contractor and Owner's consultants, architects or engineers not identified in Article 2 of Document 00 52 00 (Agreement) occur during field visits or by telephone, Contractor shall immediately confirm them in a written document copied to Owner.

7.02 Owner's Observation of The Work

- A. Work shall be performed under Owner's general observation and administration. Contractor shall comply with Owner's directions and instructions in accordance with the terms of Contract Documents, but nothing contained in these General Conditions shall be taken to relieve Contractor of any obligations or liabilities under the Contract Documents. Owner's failure to review or, upon review, failure to object to any aspect of Work reviewed, shall not be deemed a waiver or approval of any non-conforming aspect of Work. Owner may designate any person or persons in Owner's sole discretion to perform Owner's general observation and administration.
- B. Subject to those rights specifically reserved in the Contract Documents, Owner will not supervise, or direct, or have control over, or be responsible for, Contractor's means, methods, techniques, sequences or procedures of construction, or the safety precautions and programs incident thereto, or Contractor's failure to comply with laws and regulations applicable to the furnishing or performance of Work. Owner will not be responsible for Contractor's failure to perform or furnish the Work in accordance with Contract Documents.

7.03 Consultant's Observation of Work

- A. Owner may engage one or more of the following to assist in administering the Work: an Architect/Engineer, Project Manager, Construction Manager, or any other independent consultant (collectively for purposes of this Article 7, **Consultant**). If so engaged, Consultant will advise and consult with Owner, but will have authority to act on behalf of Owner only to extent provided in the Contract Documents or as set forth in writing by Owner. Consultant will not be responsible for and will not have control or charge of construction means, methods, techniques, sequences or procedures, or for safety precautions and programs in connection with Work. Consultant will not be responsible for or have control over the acts or omissions of Contractor, Subcontractors or their agents or employees, or any other persons performing Work.

- B. Consultant may review Contractor's Submittals, such as Shop Drawings, Product Data, and Samples, but only for conformance with design concept of Work and with information given in the Contract Documents.
- C. Consultant may visit the Site at intervals appropriate to stage of construction to become familiar generally with the progress and quality of Work and to determine in general if Work is proceeding in accordance with Contract Documents. Based on its observations, Consultant may recommend to Owner that it disapproves or rejects Work that Consultant believes to be Defective or will not produce a complete Project that conforms to Contract Documents, or will prejudice the integrity of the design concept of the completed Project as a functioning whole as indicated by Contract Documents. Consultant may also recommend to Owner special inspection or testing of Work, whether or not the Work is fabricated, installed, or completed.
- D. Consultant may conduct observations or inspections to recommend to Owner the dates that Contractor has achieved Substantial Completion and Final Completion, and will receive and forward to Owner for review written warranties and related documents required by Contract Documents.

7.04 Owner's and Consultant's Exercise of Contract Responsibilities

- A. Owner, Consultant, and all Owner's representatives, in performing their duties and responsibilities under the Contract Documents, accept no duties, responsibilities or duty of care, nor may the same be implied or inferred, towards Contractor, any Subcontractor, sub-Subcontractor or supplier, except those set forth expressly in the Contract Documents.

7.05 Owner's Right of Access to The Work

- A. During performance of Work, Owner, Consultant, and all Owner's representatives may at any time enter upon Work, shops or studios where any part of the Work may be in preparation, or factories where any materials for use in Work are being or are to be manufactured, and Contractor shall provide proper and safe facilities for this purpose, and shall make arrangements with manufacturers to facilitate inspection of their processes and products to such extent as Owner's interests may require. Other contractors performing work for Owner may also enter upon Work for all purposes required by their respective contracts. Subject to the rights reserved in the Contract Documents, Contractor shall have sole care, custody, and control of the Site and its Work areas.

7.06 Owner's Right of Separate Construction

- A. Owner may perform with its own forces, construction or operations related to the Project, or the Site during Contractor's operations. Owner may also award separate contracts in connection with other portions of the Project or other construction or operations, on the Site or areas contiguous to the Site, under conditions similar to these Contract Documents, or may have utility Owners perform other work up to a portion of the work equivalent to 25% of the total bid amount.
- B. Contractor shall adjust its schedule and fully coordinate with and shall afford all other contractors, utility districts and Owner (if Owner is performing work with its own forces), proper and safe access to the Site, and reasonable opportunity for the installation and storage of their materials. Contractor shall ensure that the execution of its Work properly connects and coordinates with others' work, do all cutting, fitting and patching of the Work that may be required to make its several parts come together properly and integrate with such other work, and shall cooperate with them to facilitate the progress of the Work.
- C. To the extent that any part of Contractor's Work is to interface with work performed or installed by other contractors or utility owners, Contractor shall inspect and measure the in-place work. Contractor shall promptly report to Owner in writing any defect in in-place work that will impede or increase the cost of Contractor's interface unless corrected.

ARTICLE 8 - CONTRACTOR'S PROSECUTION AND PROGRESS OF THE WORK

8.01 Contractor to Supervise The Work

- A. Subject to those rights specifically reserved in the Contract Documents, Contractor shall supervise, direct, have control over, and be responsible for, Contractor's means, methods, techniques,

sequences or procedures of construction, safety precautions and programs incident thereto, and compliance with laws and regulations applicable to the furnishing or performance of Work.

- B. Contractor shall keep on the Site at all times during Work progress a competent resident Superintendent, who shall not be replaced without Owner's express written consent and, if applicable, payment of liquidated damages as required by Document 00 52 00 (Agreement). The Superintendent shall be Contractor's representative at the Site and shall have complete authority to act on behalf of Contractor. All communications to and from the Superintendent shall be as binding as if given to or by Contractor.
- C. Contractor shall supervise, inspect, and direct Work competently and efficiently, devoting the attention and applying such personal skills and expertise as may be required and necessary to perform Work in accordance with Contract Documents. Contractor shall be solely responsible for and have control and charge of construction means, methods, techniques, sequences and procedures, safety precautions and programs in connection with the Work. Contractor shall be responsible to see that the completed Work complies accurately with Contract Documents.
- D. Contractor is fully responsible for Contractor's own acts and omissions. Contractor is responsible for all acts and omissions of its Subcontractors, suppliers, and other persons and organizations performing or furnishing any of the Work, labor, materials, or equipment under a direct or indirect contract with Contractor.
- E. Contractor shall conduct monthly Contractor Safety Committee meetings, and weekly toolbox safety talks.

8.02 Contractor to Maintain Cost Data

- A. Contractor shall maintain full and correct information as to the number of workers employed in connection with each subdivision of Work, the classification and rate of pay of each worker in form of certified payrolls, the cost to Contractor of each class of materials, tools and appliances used by Contractor in Work, and the amount of each class of materials used in each subdivision of Work. Contractor shall provide Owner with monthly summaries of this information. If Contractor maintains or is capable of generating summaries or reports comparing actual Project costs with Bid estimates or budgets, Contractor shall provide Owner with a copy of such report upon Owner's request.
- B. Contractor shall maintain daily job reports recording all significant activity on the job, including the number of workers on Site, Work activities, problems encountered and delays. Contractor shall provide Owner with copies for each Day Contractor works on the Project, to be delivered to Owner either the same Day or the following morning before starting work at the Site. Contractor shall take pre-construction and monthly progress photographs of all areas of the Work. Contractor shall maintain copies of all correspondence with Subcontractors and records of meetings with Subcontractors.
- C. Owner shall have the right to audit and copy Contractor's books and records of any type, nature or description relating to the Project (including, without limitation, financial records reflecting in any way costs claimed on the Project), and to inspect the Site, including Contractor's trailer, or other job Site office, and this requirement shall be contained in the subcontracts of Subcontractors working on Site. By way of example, Owner shall have the right to inspect and obtain copies of all Contract Documents, planning and design documents, Bid proposal and negotiation documents, cost records and job cost variance reports, design modification proposals, value engineering or other cost reduction proposals, revisions made to the original design, job progress reports, photographs, and as-built drawings maintained by Contractor. Owner and any other applicable governmental entity shall have the right to inspect all information and documents maintained hereunder at any time during the Project and for a period of five years following Final Completion, in accordance with the provisions of Government Code Section 8546.7. This right of inspection shall not relieve Contractor of its duties and obligations under the Contract Documents. This right of inspection shall be specifically enforceable in a court of law, either independently or in conjunction with enforcement of any other rights in the Contract Documents.

8.03 Contractor to Supply Sufficient Workers and Materials

- A. Unless otherwise required by Owner under the terms of Contract Documents, Contractor shall at all times keep on the Site materials and employ qualified workers sufficient to prosecute Work at a

rate and in a sequence and manner necessary to complete Work within the Contract Time. This obligation shall remain in full force and effect notwithstanding disputes or claims of any type.

- B. At any time during progress of Work should Contractor directly or indirectly (through Subcontractors) refuse, neglect, or be unable to supply sufficient materials or employ qualified workers to prosecute the Work as required, then Owner may require Contractor to accelerate the Work and/or furnish additional qualified workers or materials as Owner may consider necessary, at no cost to Owner. If Contractor does not comply with the notice within three Business Days of date of service thereof, Owner shall have the right (but not a duty) to provide materials and qualified workers to finish the Work or any affected portion of Work, as Owner may elect. Owner may, at its discretion, exclude Contractor from the Site, or portions of the Site or separate work elements during the time period that Owner exercises this right. Owner will deduct from moneys due or which may thereafter become due under the Contract Documents, the sums necessary to meet expenses thereby incurred and paid to persons supplying materials and doing Work. Owner will deduct from funds or appropriations set aside for purposes of Contract Documents the amount of such payments and charge them to Contractor as if paid to Contractor. Contractor shall remain liable for resulting delay, including liquidated damages and indemnification of Owner from claims of others.
- C. Exercise by Owner of the rights conferred upon Owner in this subparagraph is entirely discretionary on the part of Owner. Owner shall have no duty or obligation to exercise the rights referred to in this subparagraph and its failure to exercise such rights shall not be deemed an approval of existing Work progress or a waiver or limitation of Owner's right to exercise such rights in other concurrent or future similar circumstances. (The rights conferred upon Owner under this subparagraph are, like all other such rights, cumulative to Owner's other rights under any provision of the Contract Documents.)

8.04 Contractor to Maintain Project Record Documents

- A. As further described in Section 01 77 00, § 1.05, Contractor shall maintain in a safe place at the Site one record copy of all Drawings, Specifications, Addenda, Contract Modifications, Change Orders, Work Directives, Force Account orders, and written interpretations and clarifications in good order and annotated to show all as-built changes made during construction. These Project Record Documents, together with all approved Samples and a counterpart of all approved Shop Drawings, shall be maintained and available to Owner for reference. Upon completion of the Work, Contractor shall deliver to Owner, the Project Record Documents, Samples and Shop Drawings and as-built drawings.
- B. Throughout Contractor's performance of the Work of the Project, Contractor shall maintain construction records to include: shop drawings; product data/material data sheets; samples; submittal; purchases; materials; equipment; inspections; applicable handbooks; applicable codes and standards; maintenance and operating manuals and instructions; RFI Log; Submittal Log; other related documents and revisions which arise out of the Construction Contracts. Contractor shall maintain records of principal building layout lines, elevations for the bottom of footings, floor levels, and key site elevations (certified by a qualified surveyor or professional engineer). Contractor shall make all records available to Owner. At the completion of the Project, Contractor shall deliver all such records to the Owner to have a complete set of record as-built drawings.

8.05 Contractor to Not Disrupt Owner Operation

- A. Contractor shall schedule and execute all Work in a manner that does not interfere with or disrupt Owner operations including, without limitation, parking, utilities (electricity, gas, water), noise, access by employees and administration, access by vendors, physicians, patients and any other person or entity using Owner facilities or doing business with Owner. Contractor shall produce and supply coordination plans and requests to Owner, following Owner procedures, for all necessary interference of construction with Owner, which Owner will reasonably cooperate with.

8.06 Contractor to Provide Temporary Facilities and Controls

- A. Unless expressly provided otherwise in the Contract Documents, Contractor shall provide all temporary utilities (including without limitation electricity, water, natural gas), lighting, heating, cooling and ventilating devices, telephone, sanitary facilities, barriers, fences and enclosures, tree

and plant protection, fire protection, pollution, erosion, Storm Water Pollution Prevention controls, noise and traffic control, and any other necessary services required for construction, testing or completion of the Work.

ARTICLE 9 - WARRANTY, GUARANTY, AND INSPECTION OF WORK

9.01 Warranty and Guaranty

- A. General Representations and Warranties: Contractor represents and warrants that it is and will be at all times fully qualified and capable of performing every Phase of the Work and to complete Work in accordance with the terms of Contract Documents. Contractor warrants that all construction services shall be performed in accordance with generally accepted professional standards of good and sound construction practices and all requirements of Contract Documents. Contractor warrants that Work including, without limitation, each item of materials and equipment incorporated therein, shall be new, of suitable grade of its respective kind for its intended use, and free from defects in design, engineering, materials, construction and workmanship. Contractor warrants that Work shall conform in all respects with all applicable requirements of federal, state and local laws, applicable construction codes and standards, licenses, and permits, Drawings and Specifications and all descriptions set forth therein, and all other requirements of Contract Documents. Contractor shall not be responsible, however, for the negligence of others in the specification of specific equipment, materials, design parameters and means or methods of construction where that is specifically shown and expressly required by Contract Documents.
- B. Extended Warranties: Any warranty exceeding one year provided by the supplier or manufacturer of any equipment or materials used in the Project shall be extended for such term. Contractor expressly agrees to act as co-guarantor of such equipment and materials and shall supply Owner with all warranty and guarantee documents relative to equipment and materials incorporated in the Project and guaranteed by their suppliers or manufacturers.
- C. Environmental and Toxics Warranty: The covenants, warranties and representations contained in this Paragraph are effective continuously during Contractor's Work on the Project and following cessation of labor for any reason including, without limitation, Project completion. Contractor covenants, warrants and represents to Owner that:
 - 1. To Contractor's knowledge after due inquiry, no lead or Asbestos-containing materials were installed or discovered in the Project at any time during Contractor's construction thereof. If any lead or Asbestos-containing materials were discovered, Contractor made immediate written disclosure to Owner.
 - 2. To Contractor's knowledge after due inquiry, no electrical transformers, light fixtures with ballasts or other equipment containing PCBs are or were located on the Project at any time during Contractor's construction thereof.
 - 3. To Contractor's knowledge after due inquiry, no storage tanks for gasoline or any other toxic substance are or were located on the Project at any time during Contractor's construction thereof. If any such materials were discovered, Contractor made immediate written disclosure to Owner.
 - 4. Contractor's operations concerning the Project are and were not in violation of any applicable environmental federal, state, or local statute, law or regulation dealing with hazardous materials substances or toxic substances and no notice from any governmental body has been served upon Contractor claiming any violation of any such law, ordinance, code or regulation, or requiring or calling attention to the need for any Work, repairs, construction, alteration, or installation on or in connection with the Project in order to comply with any such laws, ordinances, codes, or regulations, with which Contractor has not complied. If there are any such notices with which Contractor has complied, Contractor shall provide Owner with copies thereof.

9.02 Inspection of Work

- A. Work and materials, and manufacture and preparation of materials, from beginning of construction until Final Completion and acceptance of Work, shall be subject to inspection and rejection by Owner, its agents, representatives or independent contractors retained by Owner to perform

inspection services, or governmental agencies with jurisdictional interests. Contractor shall provide them proper and safe conditions for such access and advise them of Contractor's Site safety procedures and program so that they may comply therewith as applicable. Upon request or where specified, Owner shall be afforded access for inspection at the source of supply, manufacture or assembly of any item of material or equipment, with reasonable accommodations supplied for making such inspections.

- B. Contractor shall furnish, in such quantities and sizes as may be required for proper examination and tests, Samples or test specimens of all materials to be used or offered for use in connection with Work. Contractor shall prepare Samples or test specimens at its expense and furnish them to Owner. Contractor shall submit all Samples in ample time to enable Owner to make any necessary tests, examinations, or analyses before the time it is desired to incorporate the material into the Work.
- C. Contractor shall give Owner timely notice of readiness of Work for all required inspections, tests or approvals, and shall cooperate with inspection and testing personnel to facilitate required inspections or tests.
- D. Upon advance notice as set forth above, Owner will endeavor to schedule required inspections, but if resources are not available, Contractor may need to reschedule the Work at no additional cost to the Owner.
- E. If applicable laws or regulations of any public body having jurisdiction require any Work (or part thereof) specifically to be inspected, tested or approved by an employee or other representative of such public body, Contractor shall assume full responsibility for arranging and obtaining such inspections, tests or approvals, and furnish Owner with the required certificates of inspection, or approval. Owner will pay the cost of initial testing and Contractor shall pay all costs in connection with any follow-up or additional testing. Contractor shall also be responsible for arranging and obtaining and shall pay all costs in connection with any inspections, tests or approvals required for the acceptance of materials or equipment to be incorporated in the Work, or of materials, mix designs, or equipment submitted for approval prior to Contractor's purchase thereof for incorporation in the Work.
- F. If Contractor covers any Work, or the work of others, prior to any required inspection, test or approval without written approval of Owner, Contractor shall uncover the Work at Owner's request. Contractor shall bear the expense of uncovering Work and replacing Work. In any case where Contractor covers Work contrary to Owner's request, Contractor shall uncover Work for Owner's observation or inspection at Owner's request. Contractor shall bear the cost of uncovering Work.
- G. Whenever required by Owner, Contractor shall furnish tools, labor and materials necessary to make examination of Work that may be completed or in progress, even to extent of uncovering or taking down portions of finished Work. Should Work be found unsatisfactory, cost of making examination and of reconstruction shall be borne by Contractor. If Work is found to be satisfactory, Owner, in manner herein prescribed for paying for alterations, Modifications, and extra Work, except as otherwise herein specified, will pay for examination.
- H. Inspection of the Work by or on behalf of Owner, or Owner's failure to do so, shall not under any circumstances be deemed a waiver or approval of any non-conforming aspect of the Work. Contractor shall have an absolute duty, in the absence of a written Change Order signed by Owner, to perform Work in conformance with the Contract Documents and to immediately correct Defective Work immediately upon Contractor's knowledge.
- I. Any inspection, evaluation, or test performed by or on behalf of Owner relating to the Work is solely for the benefit of Owner, and shall not be relied upon by Contractor. Contractor shall not be relieved of the obligation to perform Work in accordance with the Contract Documents, nor relieved of any guaranty, warranty, or other obligation, as a result of any inspections, evaluations, or tests performed by Owner, whether or not such inspections, evaluations, or tests are permitted or required under the Contract Documents. Contractor shall be solely responsible for testing and inspecting Work already performed to determine whether such Work is in proper condition to receive later Work.

9.03 Correction of Defective Work

- A. Owner may direct Contractor to correct any Defective Work or remove it from the Site and replace it with Work that is not Defective and satisfactorily correct or remove and replace any damage to

other Work or the work of others resulting from the correction or removal. Also, if Contractor fails to supply sufficient skilled workers, suitable materials or equipment, or to furnish or perform the Work in such a way that the completed Work will conform to Contract Documents, Owner may direct Contractor to perform the Work in accordance with the Contract Documents, correct or replace any such Defective Work, or stop any portion of Work.

- B. Owner may correct and remedy the Defective Work or perform any other work, corrective or otherwise, if, after five Days' written notice to Contractor, Contractor fails to correct Defective Work or to remove and replace rejected Work; or provide a plan for correction of Defective Work acceptable to Owner; or perform Work in accordance with Contract Documents. In connection with such corrective and remedial action, Owner may exclude Contractor from all or part of the Site; take possession of all or part of Work and suspend Contractor's Work related thereto; take possession of all or part of Contractor's tools, appliances, construction equipment and machinery at the Site; and incorporate in Work any materials and equipment stored at the Site or for which Owner has paid Contractor but which are stored elsewhere. Contractor shall allow Owner, its representatives, agents, employees, and other contractors and consultants' access to the Site to enable Owner to exercise the rights and remedies under this Paragraph.
- C. Contractor shall be responsible for all claims, costs, losses, damages, expenses and liabilities incurred or sustained by Owner in exercising rights and remedies under this Paragraph. Contractor shall be responsible for any and all claims, costs, losses and damages caused by or resulting from such correction or removal. A Change Order will be issued incorporating the necessary revisions in the Contract Documents with respect to the Work and the Contract Sum. If the parties are unable to agree to the amount of an appropriate decrease in the Contract Sum, Owner may decide the proper amount or, in its discretion may elect to leave the Contract Sum unchanged and deduct from monies due Contractor, all such claims, costs, losses and damages caused by or resulting from exercising its rights and remedies. If Contractor disagrees with Owner's calculations, it may make a claim as provided in Article 12 of this Document 00 72 00.
- D. These Owner rights and remedies are entirely discretionary on the part of Owner, and shall not give rise to any duty on the part of Owner to exercise the rights for the benefit of Contractor or any other party. Owner's rights under this Paragraph shall be in addition to any other rights it may have under the Contract Documents or by law. Owner's failure to demand correction of defective work does not relieve the Contractor from delivering a Project that comports with the Project's plans and specifications.

9.04 Acceptance of Defective Work

- A. Owner may in its sole discretion elect to accept Defective Work. Contractor shall pay all claims, costs, losses and damages attributable to Owner's evaluation of and determination to accept such Defective Work. If Owner accepts any Defective Work prior to final payment, a Change Order will be issued incorporating the necessary revisions in the Contract Documents with respect to the Work and the Contract Sum. If the parties are unable to agree to the amount of an appropriate decrease in the Contract Sum, Owner may deduct from monies due Contractor, all claims, costs, losses, damages, expenses and liabilities attributable to the Defective Work. If Contractor disagrees with Owner's calculations, Contractor may make a claim as provided in Article 12 of this Document 00 72 00. If Owner accepts any Defective Work after final payment, Contractor shall pay to Owner, an appropriate amount as determined by Owner.

9.05 Rights upon Inspection, Correction or Acceptance

- A. Contractor shall not be allowed an extension of Contract Time because of any delay in the performance of Work attributable to the exercise by Owner of its rights and remedies under this Article. Where Owner exercises its rights under this Article, it retains and may still exercise all other rights it has by law or under the Contract Documents including, without limitation, the right to terminate Contractor's right to proceed with the Work under the Contract Documents for cause and/or make a claim or back charge where a Change Order cannot be agreed upon.
- B. Observation or inspection by Owner or its authorized agents or representatives shall not relieve Contractor of its obligation to have furnished material and workmanship in accordance with Contract Documents. Payment for Work completed through periodic progress payments, final payment or otherwise shall not operate to waive Owner's right to require full compliance with

Contract Documents and shall in no way be deemed as acceptance of any defective Work paid therefor. Contractor's obligation to complete the Work in accordance with Contract Documents shall be absolute, unless Owner agrees otherwise in writing.

9.06 Proof of Compliance of Contract Provisions

- A. In order that Owner may determine whether Contractor has complied or is complying with requirements of Contract Documents not readily enforceable through inspection and tests of Work and materials, Contractor shall at any time, when requested, submit to Owner properly authenticated documents or other satisfactory proofs of compliance with all applicable requirements.
- B. Before commencing any portion of Work, Contractor shall inform Owner in writing as to time and place at which Contractor wishes to commence Work, and nature of Work to be done, in order that proper provision for inspection of Work may occur, and to assure measurements necessary for record and payment. Information shall be given to Owner a reasonable time in advance of time at which Contractor proposes to begin Work, so that Owner may complete necessary preliminary work without inconvenience or delay to Contractor.

9.07 Correction Period and Project Warranty Period

- A. If within one year after the date of Final Acceptance, or such longer period of time as may be prescribed by laws, regulations or by the terms of Contract Documents or any extended warranty or guaranty, any Work (completed or incomplete) is found to be Defective, Contractor shall promptly without cost to Owner and in accordance with Owner's written instructions, correct such Defective Work. Contractor shall remove any Defective Work rejected by Owner and replace it with Work that is not Defective, and satisfactorily correct or remove and replace any damage to other Work or the work of others resulting therefrom. If Contractor fails to promptly comply with the terms of such instructions, or in an emergency where delay would cause serious risk of loss or damage, Owner may have the Defective Work corrected or the rejected Work removed and replaced. Contractor shall pay for all claims, costs, losses and damages caused by or resulting from such removal and replacement. Where Contractor fails to correct Defective Work, or defects are discovered outside the correction period, Owner shall have all rights and remedies granted by law.
- B. In special circumstances where a part of the Work is occupied or a particular item of equipment is placed in continuous service before Final Acceptance of all the Work, the correction period for that part of Work or that item may start to run from an earlier date if so provided by Change Order.
- C. Where Defective Work or rejected Work (and damage to other Work resulting therefrom) has been corrected, removed, or replaced under this Paragraph after the commencement of the correction period, the correction period hereunder with respect to such Work shall be extended for an additional period of one year after such correction or removal and replacement has been satisfactorily completed.

9.08 No Waiver

- A. Neither recordation of Final Acceptance, nor final certificate for payment, nor provision of the Contract, nor partial or entire use or occupancy of premises by Owner shall constitute acceptance of Work not done in accordance with Contract Documents nor relieve Contractor of liability in respect to express warranties or responsibility for faulty materials or workmanship.
- B. If, after installation, operation, or use of materials or equipment to be provided under Contract proves to be unsatisfactory to Owner, Owner shall have the right to operate and use materials or equipment until said materials and equipment can, without damage to Owner, be taken out of service for correction or replacement. Period of use of Defective materials or equipment pending correction or replacement shall in no way decrease guarantee period required for acceptable corrected or replaced items of materials or equipment.
- C. Nothing in the Contract Documents shall be construed to limit, relieve, or release Contractor's, Subcontractors', and equipment suppliers' liability to Owner for damages sustained as result of latent defects in materials or equipment caused by negligence of Contractor, its agents, suppliers, employees, or Subcontractors.

ARTICLE 10 - MODIFICATIONS OF CONTRACT DOCUMENTS

10.01 Owner's Right to Direct Changed Work

- A. Owner may, without notice to the sureties and without invalidating the Contract, make changes in the Work (**Changed Work**), including without limitation: alterations, deviations, additions to, or deletions from Contract Documents; increase or decrease the quantity of any item or portion of the Work; expand, reduce or otherwise change the Contract Time; delete any item or portion of the Work; and require extra Work. Contractor shall perform such Work under applicable provisions of the Contract Documents, unless specifically provided otherwise at the time the change is ordered. In the case of any ordered extra Work, Owner reserves the right to furnish all or portions of associated labor, material, and equipment, which Contractor shall accept and use without payment for costs, markup, profit, or otherwise for such Owner-furnished labor, materials, and equipment.
- B. If Changed Work is of such a nature as to increase or decrease the time or cost of any part of Work, price fixed in Contract shall be increased or decreased by amount as the Contractor and Owner may agree upon as reasonable and proper allowance for increase or decrease in cost of Work using the cost guidelines set forth in this Article, and absent such agreement, then as Owner may direct (with Contractor retaining its rights under Article 12 herein).

10.02 Required Documentation for Changed Work

- A. Changes affecting the Contract Time or Contract Sum of the Work shall be set forth in a written Change Order or Change Directive that shall specify:
 - 1. The Work performed in connection with the change to be made;
 - 2. The amount of the adjustment of the Contract Sum, if any, and the basis for compensation for the Work ordered; and
 - 3. The extent of the adjustment in the Contract Time, if any.
- B. A Change Order or Change Directive will become effective when signed by Owner, notwithstanding that Contractor has not signed it. A Change Order will become effective without Contractor's signature, provided Owner indicates same thereon (by indicating it as a "unilateral change order").
- C. All changes in any plans and specifications approved by any authority with jurisdiction may also require addenda or change orders approved by that authority.
- D. Where Owner requests, a performance bond rider covering the changed Work must be executed and delivered to Owner before proceeding with the changed Work or shortly in time thereafter.

10.03 Procedures and Pricing of Changed Work

- A. Procedures for changed work and pricing of changed work, claims and all forms of extra compensation, are set forth in Section 01 26 00 (Modification Procedures).

ARTICLE 11 - TIME ALLOWANCES

11.01 Time Allowances

- A. Time is of the essence. Contract Time may only be changed by Change Order, and all time limits stated in the Contract Documents are to mean that time is of the essence.
- B. Float. Float shall be treated as a Project resource. Contractor shall not be entitled to a time extension for impacts that consume float, but do not impact the critical path.
- C. Time extensions will not be granted unless substantiated by the Critical Path Method (**CPM**) Schedule, and then not until the CPM project float becomes zero. If Contractor fails to submit a Time Impact Evaluation (TIE), as required by Section 01 26 00 (Modification Procedures) and Section 01 32 00 (Progress Schedules and Reports), within the required time period, then Contractor shall be deemed to have agreed that there is no time impact and that Contractor has irrevocably waived its rights to any additional Contract Time.

11.02 Excusable Delay and Inexcusable Delay Defined

- A. Excusable Delay. Subject to the provisions on Notice of Delay below, Contract Time may be adjusted in an amount equal to the time lost due to:
 - 1. Changes in the Work ordered by Owner (**Changes**);

2. Acts or neglect by Owner, Architect, any Owner Representative, utility owners or other contractors performing other work, not permitted or provided for in the Contract Documents, provided that Contractor has performed its responsibilities under the Contract Documents (including, without limitation, pre-bid investigations) (**Acts or Neglect**); or
 3. Acts of God, fires, floods, earthquake, other natural disasters, epidemics and pandemics (other than COVID-19, including all variants and the disease it causes), abnormal weather conditions beyond the parameters otherwise set forth in this Article, nuclear accidents, strikes, lockouts, freight embargos, interruptions in service by a regulated utility, or governmental statutes or regulations enacted or imposed after the fact (together, “force majeure events”), provided damages or delays resulting therefrom are not the result of Contractor’s fault or negligence, including without limitation failure to protect the Work or mitigate any adverse impacts as required by Contract Documents (**Force Majeure**).
 4. An Unknown COVID-19 Condition, as defined below.
 - a. The 2019 novel coronavirus (including all variants) and the disease it causes are collectively referred to herein as **COVID-19**.
 - b. A **COVID-19 Condition** is something attributable to COVID-19 not caused by Contractor (which for purposes herein includes all subcontractors and suppliers) and beyond its reasonable control, including without limitation supply chain disruptions due to COVID-19, and other circumstances concerning COVID-19 not caused by Contractor and which are beyond its reasonable control.
 - c. An **Unknown COVID-19 Condition** is a COVID-19 Condition Contractor did not know about, and reasonably should not have known about, as of the date Contractor submitted its Bid. Any legal or regulatory requirements concerning COVID-19 in effect before submission of a Bid are not Unknown COVID-19 Conditions, and Contractor will be deemed to have knowledge of all such laws and requirements.
 - d. Only an Unknown COVID-19 Condition is a basis for adjusting Contract Time. A COVID-19 Condition that does not meet the definition of an Unknown Covid-19 Condition is not a basis for adjusting Contract Time.
- B. Inexcusable Delay. Contract Time shall not be extended for any period of time where Contractor (and/or any Subcontractor) is delayed or prevented from completing any part of the Work due to a cause that is within Contractor’s risk or responsibility under the Contract Documents. Delays attributable to or within the control of a Subcontractor, or its subcontractors, or supplier, are deemed delays within the control of Contractor.

11.03 Notice of Delay

- A. Within seven Days of the beginning of any delay (excepting adverse weather delays), Contractor shall notify Owner in writing, by submitting a notice of delay that shall describe the anticipated delays resulting from the delay event in question. If Contractor requests an extension of time, Contractor shall submit a TIE, in accordance with by Section 01 26 00 (Modification Procedures) and Section 01 32 00 (Progress Schedules and Reports), within ten days of the notice of delay. Owner will determine all claims and adjustments in the Contract Time. No claim for an adjustment in the Contract Time will be valid and such claim will be waived if not submitted in accordance with the requirements of this subparagraph. In cases of substantial compliance with the seven-day notice requirement here (but not to exceed twenty-one days from the beginning of the delay event), Owner may in its sole discretion recognize a claim for delay accompanied with the proper TIE, provided Contractor also shows good faith and a manifest lack of prejudice to Owner from the late notice.

11.04 Compensable Time Extensions

- A. Subject to other applicable provisions of the Contract Documents, Contractor may be entitled to adjustment in Contract Sum in addition to Contract Time for:
1. Excusable delay caused solely by Changes in the Work ordered by Owner, as provided above, and/or
 2. Excusable delay caused solely by Acts or Neglect by Owner or other person, as provided above.

11.05 Non-Compensable Time Extensions

- A. Subject to other applicable provisions of the Contract Documents, Contractor may be entitled to adjustment in Contract Time only, without adjustment in Contract Sum, for
 - 1. Periods of excusable delay caused solely by weather, Force Majeure events, or an Unknown Covid Condition, as provided above in this Article, or
 - 2. Periods of concurrent delay, where delay results from two or more causes, one of which is compensable (resulting from Changes or Acts or Neglect as set forth above in this Article), and the other of which is non-compensable or unexcusable, such as: acts or neglect of Contractor, an Unknown Covid Condition, Subcontractors or others for whom Contractor is responsible; other acts, omissions and conditions which would not entitle Contractor to adjustment in Contract Time; adverse weather; and/or actions of Force Majeure as provided above in this Article.

11.06 Adverse Weather

- A. Adverse weather delays may be allowed only if the number of workdays of adverse weather exceeds the parameters listed or referenced immediately below in this subparagraph and Contractor proves that adverse weather actually caused delays to work on the critical path. Contractor shall give written notice of intent to claim an adverse weather day within one Day of the adverse weather day occurring.
- B. Claims for extension of time for rain delay will not be granted unless the number of days work is prevented by rain exceeds **100%** of the historical average number of rain days for the period of the Contract Time, based on the records of the National Oceanic & Atmospheric Administration (**NOAA**) weather station closest to the Project Site, as measured and reported by NOAA. (For example, there is a Weather Station at Sacramento, CA, and precipitation figures from this Weather Station are available at https://wrcc.dri.edu/city_climate.html#cali), pro-rated in the individual month Contractor starts and finishes Work.
- C. In order to qualify as an adverse weather delay day with respect to the foregoing parameters, daily rainfall must exceed 0.1 inch at the Weather Station, as measured and reported by NOAA. Notwithstanding these allowances, Contractor shall at all times employ all available mitigation measures to enable Work to continue, Contractor shall take reasonable steps to mitigate potential weather delays, such as dewatering the Site, lime treatment, and covering Work and material that could be affected adversely by weather. Failure to do so shall be cause for Owner to not grant a time extension due to adverse weather, where Contractor could have avoided or mitigated the potential delay by exercising reasonable care.
- D. Contractor shall include the foregoing precipitation parameters as a monthly activity in its progress schedule. As Work on the critical path is affected by precipitation, Contractor shall notify Owner and request that the days be moved to the affected activities. Any adverse weather days remaining shall be considered Project float available to either Owner or Contractor.
- E. Adverse weather delay for precipitation shall be recognized for the actual period of time Contractor proves it was delayed by precipitation exceeding the specified parameters. For example, and not by way of limitation, if precipitation exceeding the specified parameters does not in fact delay Contractor's progress on the critical path, then no time extension shall be recognized; and conversely, if Contractor proves to Owner's satisfaction that precipitation exceeding the specified parameters causes delay to Contractor for a period longer than the number of precipitation days incurred (e.g., if it rains or snows during grading work), then Contractor shall be entitled to a time extension equal to the actual period of such delay.
- F. During unfavorable weather, wet ground, or other unsuitable construction conditions, Contractor shall employ best practices to protect the Work, manage the construction site and rainwater during inclement weather. Persons performing the Work shall examine surfaces to receive their Work and shall report in writing to Contractor, with copy to Owner representative and the Architect conditions detrimental to the Work. Failure to examine and report discrepancies makes the Contractor responsible, at no increase in Contract Sum, for corrections Owner may require. Commencement of Work constitutes acceptance of surface.

11.07 Liquidated Damages

- A. Time is of the essence. Execution of Contract Documents by Contractor shall constitute its acknowledgement that Owner will actually sustain damages in the form of Contract administration expenses (such as Project management and consultant expenses) in the amount fixed in the Contract Documents for each and every Day during which completion of Work required is delayed beyond expiration of time fixed for completion plus extensions of time allowed pursuant to provisions hereof.
- B. Contractor and Owner agree that because of the nature of the Project, it would be impractical or extremely difficult to fix the amount of such actual damages incurred by Owner because of a delay in completion of all or any part of the Work. Contractor and Owner agree that specified measures of liquidated damages shall be presumed to be the amount of such damages actually sustained by Owner, and that because of the nature of the Project, it would be impracticable or extremely difficult to fix the actual damages.
- C. Liquidated damages for delay shall cover administrative, overhead, interest on bonds, and general loss of public use damages suffered by Owner as a result of delay. Liquidated damages shall not cover the cost of completion of the Work, damages resulting from Defective Work, lost revenues or costs of substitute facilities, or damages suffered by others who then seek to recover their damages from Owner (for example, delay claims of other contractors, subcontractors, tenants, or other third-parties), and defense costs thereof. Owner may deduct from any money due or to become due to Contractor subsequent to time for completion of entire Work and extensions of time allowed pursuant to provisions hereof, a sum representing then-accrued liquidated damages.

ARTICLE 12 - CLAIMS BY CONTRACTOR

12.01 Obligation to File Claims for Disputed Work

- A. Should it appear to Contractor that the Work to be performed or any of the matters relative to the Contract Documents are not satisfactorily detailed or explained therein, or should any questions arise as to the meaning or intent of the Contract Documents, or should any dispute arise regarding the true value of any work performed, work omitted, extra work that the Contractor may be required to perform, time extensions, payment to the Contractor during performance of this Contract, performance of the Contract, and/or compliance with Contract procedures, or should Contractor otherwise seek extra time or compensation FOR ANY REASON WHATSOEVER (collectively, **Disputed Work**), then Contractor shall first follow procedures set forth in the Contract Documents (including, without limitation, Paragraphs 11.03, 11.04, 13.03 and 13.04 of this Document 00 72 00 and Section 01 26 00.) If a dispute remains, then Contractor shall give written notice to Owner that expressly invokes this Article 12. Owner shall decide the issue in writing within 15 days; and Owner's written decision shall be final and conclusive. If Contractor disagrees with Owner's decision, or if Contractor contends that Owner failed to provide a decision timely, then Contractor's SOLE AND EXCLUSIVE REMEDY is to file a written claim within the time limits set forth in Paragraph 12.02 of this Article setting forth Contractor's position as required herein.
- B. Duty to Work During Disputes. Notwithstanding any dispute or Disputed Work, Contractor shall continue to prosecute the Work and the Disputed Work in accordance with the Owner's determinations. Contractor's SOLE AND EXCLUSIVE REMEDY for Disputed Work is to file a written claim within the time limits set forth in Paragraph 12.02 of this Article setting forth Contractor's position as required herein.

12.02 Form and Contents of Claim

- A. Contractor's written claim must identify itself as a **Claim** under this Article 12 and must include the following: (i) a narrative of pertinent events; (ii) citation to contract provisions; (iii) theory of entitlement; (iv) complete pricing of all cost impacts; (v) a Time Impact Evaluation of all time delays that shows actual time impact on the critical path; (vi) documentation supporting items (i) through (v); and (vii) a verification under penalty of perjury of the claim's accuracy. The Claim shall be submitted to Owner within thirty (30) calendar days of receiving Owner's written decision, or the date Contractor contends such decision was due, and shall be priced like a change order according to Section 01 26 00, and must be updated monthly as to cost and entitlement if a continuing claim. Routine contract materials, for example, correspondence, RFI, Change Order requests, or payment

requests shall not constitute a claim. Contractor shall bear all costs incurred in the preparation and submission of a claim.

- B. Regarding delay and impact costs of any nature, Contractor may not seek delay compensation for on-Site or off-Site costs based on formulas, e.g., "Eichleay" or other formula. Rather, Contractor shall prove actual costs resulting from such delays. If Contractor requests compensation for delay to the construction, then Contractor shall prove and document actual costs plus markup per the cost categories and procedures in Section 01 26 00 (Modification Procedures) in order to request, claim or prove compensation for delay.

12.03 Administration During/After Claim Submission

- A. Owner may render a final determination based on the Claim or may in its discretion conduct an administrative hearing on Contractor's claim, in which case Contractor shall appear, participate, answer questions and inquiries, and present any further evidence or analysis requested by Owner prior to rendering a final determination. Should Owner take no action on the Claim within 45 days of submission, it shall be deemed denied.
- B. Notwithstanding and pending the resolution of any claim or dispute, Contractor shall diligently prosecute the disputed work to final completion in accordance with Owner's determination.
- C. Public Contract Code Section 9204 specifies provisions on resolving contract claims of any size, and Public Contract Code Section 20104, et seq., specifies required provisions on resolving contract claims less than \$375,000. Those statutes constitute a part of this Contract. In the event any other Contract provision violates such statutes, the applicable statute controls. See Section 01 41 00.

12.04 Compliance

- A. The provisions of this Article 12 constitute a non-judicial claim settlement procedure that, pursuant to Government Code Section 930.2, shall constitute a condition precedent to submission of a valid Government Code Claim under the Government Code. Contractor shall bear all costs incurred in the preparation, submission and administration of a claim. Any claims presented in accordance with the Government Code must affirmatively indicate Contractor's prior compliance with the claims procedure herein and the previous dispositions under Paragraph 12.03 above of the claims asserted. No suit may be brought against Owner arising out of or in connection with the Project unless and until Contractor presents to Owner a statutory Government Code Claim, in accordance with Government Code Sections 910, et seq. Pursuant to Government Code Section 930.2, the one-year period in Government Code section 911.2 shall be reduced to 150 days from either accrual of the cause of action, substantial completion or termination of the contract, whichever occurs first; in all other respects, the Government Code shall apply unchanged.
- B. Failure to submit and administer claims as required in Article 12 shall waive Contractor's right to claim on any specific issues not included in a timely submitted claim. Claim(s) or issue(s) not raised in a timely protest and timely claim submitted under this Article 12 may not be asserted in any subsequent litigation, Government Code Claim, or legal action.
- C. Contractor shall present as its claims all Subcontractor, sub-Subcontractor and supplier claims of any type, and prove them under the terms of the Contract Documents. Owner shall not be directly liable to any Subcontractor, any supplier, or any other person or organization, or to any surety for or employee or agent of any of them, for damages or extra costs of any type arising out of or resulting from the Project.
- D. Owner shall not be deemed to waive any provision under this Article 12, if at Owner's sole discretion, a claim is administered in a manner not in accord with this Article 12. Waivers or modifications of this Article 12 may only be made a signed change order approved as to form by legal counsel for both Owner and Contractor; oral or implied modifications shall be ineffective.

12.05 Mediation

- A. All Contractor claims not otherwise subject to Public Contract Code Sections 20104, et seq., shall, as a condition precedent to litigation thereon, first be mediated. Mediation shall be confidential, non-binding, pursuant to the construction mediation procedures of JAMS in Sacramento, California, and utilize the services of a mediator mutually acceptable to the parties. If the parties are unable

to agree, the mediator will be selected by JAMS from its panel of approved construction industry mediators, having a minimum of 20 years' experience in the construction industry.

- B. All statutes of limitation shall be tolled from the date of the demand for mediation until a date two weeks following the mediation's conclusion. All unresolved Contractor claims shall be submitted to the same mediator. The cost of mediation shall be equally shared by all parties to the mediation. The parties shall, prior to the commencement of a mediation pursuant to this Paragraph, upon notice of the other party, exchange relevant, non-privileged project documents in compliance with Code of Civil Procedure Sections 2031.010, et seq. Additionally, the parties may agree mutually to engage in additional discovery prior to mediation. Should the parties proceed with additional discovery, they shall, unless mutually agreed otherwise, comply with Code of Civil Procedure Sections 2019, et. seq. The Mediator will have jurisdiction to resolve any discovery disputes relating to the Mediation.

ARTICLE 13 - UNDERGROUND CONDITIONS

13.01 Contractor to Locate Underground Facilities

- A. During construction, Contractor shall comply with Government Code Sections 4216 to 4216.9, and in particular Section 4216.2 which provides, in part: "Except in an emergency, an excavator planning to conduct an excavation shall notify the appropriate regional notification center of the excavator's intent to excavate at least two working days, and not more than 14 calendar days, before beginning that excavation. The date of the notification shall not count as part of the two-working-day notice. If an excavator gives less notice than the legal excavation start date and time and the excavation is not an emergency, the regional notification center will take the information and provide a ticket, but an operator has until the legal excavation start date and time to respond. However, an excavator and an operator may mutually agree to a different notice and start date. The contact information for operators notified shall be available to the excavator."
- B. Contractor shall contact USA, and schedule the Work to allow ample time for the center to notify its members and, if necessary, for any member to field locate and mark its facilities. Contractor is charged with knowledge of all subsurface conditions reflected in USA records. Prior to commencing excavation or trenching work, Contractor shall provide Owner with copies of all USA records secured by Contractor. Contractor shall advise Owner of any conflict between information provided in Document 00 31 32 (Geotechnical Data and Existing Conditions), the Drawings and that provided by USA records. Contractor's excavation shall be subject to and comply with the Contract Documents.
- C. Contractor shall also investigate the existence of existing service laterals, appurtenances or other types of utilities, indicated by the presence of an underground transmission main or other visible facilities, such as buildings, manholes, new asphalt, meters and junction boxes, on or adjacent to the Site, even if not shown or indicated in Existing Conditions Data, Contract Documents, or USA records, or discovered during Contractor's pre- or post-bid investigation. Contractor shall immediately secure all such available information and notify Owner and the utility owner, in writing, of its discovery.

13.02 Contractor to Protect Underground Facilities

- A. At all times during construction, all operating Underground Facilities shall remain in operation, unless the Contract Documents expressly indicate otherwise. Contractor shall maintain such Underground Facilities in service where appropriate; shall repair any damage to them caused by the Work; and shall incorporate them into the Work, including reasonable adjustments to the design location (including minor relocations) of the existing or new installations. Contractor shall take immediate action to restore any in service installations damaged by Contractor's operations.
- B. Prior to performing Work at the Site, Contractor shall lay out the locations of Underground Facilities that are to remain in service and other significant known underground installations indicated by the Existing Conditions Data, Contract Documents, USA records, or any material otherwise reasonably available to Contractor or discovered during Contractor's pre- or post-bid investigations. Contractor shall further locate, by carefully excavating with small equipment, potholing and principally by hand, all such utilities or installations that are to remain and that are subject to damage. If additional

utilities whose locations are unknown are discovered, Contractor shall immediately report to Owner for disposition of the same. Additional compensation or extension of time on account of utilities not shown or otherwise brought to Contractor's attention, including reasonable action taken to protect or repair damage, shall be determined as provided in this Document 00 72 00.

- C. If during construction, an Underground Facility is uncovered or revealed at or contiguous to the Site which was not shown, indicated, or discovered in the materials and investigations described in Paragraph 13.02B, above, then Contractor shall, promptly after becoming aware thereof and before further disturbing conditions affected thereby (and in no event later than seven Days), and prior to performing any Work in connection therewith (except in an emergency), identify the owner of such Underground Facility and give written notice to that owner and to Owner. During such time, Contractor shall be responsible for the safety and protection of such Underground Facility.
- D. The cost of all of the following will be included in the Contract Sum and Contractor shall have full responsibility for (a) reviewing and checking all available information and data including, without limitation, Existing Conditions Data, and information on file at USA; (b) locating all Underground Facilities shown or indicated in the Contract Documents or reasonably available information, or indicated by visual observation including, without limitation, and by way of example only, through performance of all pre-Bid investigations required by this Document 00 72 00 and Bidding Documents and post-Bid investigations required by this Document 00 72 00, and by engaging qualified locating services and all necessary backhoeing and potholing; (c) coordination of the Work with the owners of such Underground Facilities during construction; and (d) the safety and protection of all such Underground Facilities and repairing any damage thereto resulting from the Work.
- E. Consistent with Government Code Section 4215, as between Owner and Contractor, Owner will be responsible for the timely removal, relocation, or protection of existing main or trunk line utility facilities located on the Site only if such utilities are not identified in the Contract Documents or information made available for bidding. Owner will compensate for the cost of locating and repairing damage not due to Contractor's failure to exercise reasonable care, removing and relocating such main or trunk line utility facilities not indicated in the Contract Documents or information made available for bidding with reasonable accuracy, and equipment on the Project necessarily idled during such Work. Contractor shall not be assessed liquidated damages for delay in completion of the Project, when such delay was caused by the failure of Owner or the utility to provide for removal or relocation of such utility facilities.

13.03 Concealed or Unknown Conditions

- A. If either of the following conditions is encountered at Site when digging trenches or other excavations that extend deeper than four feet below the surface, Contractor shall give a written Notice of Differing Site Conditions to Owner promptly before conditions are disturbed, except in an emergency as set forth in this Document 00 72 00, and in no event later than seven Days after first observance of:
 - 1. Subsurface or Latent physical conditions which differ materially from those indicated in the Contract Documents; or
 - 2. Unknown physical conditions of an unusual nature or which differ materially from those ordinarily encountered and generally recognized as inherent in work of the character provided for in the Contract Documents.
- B. In response to Contractor's Notice of Differing Site Conditions under this Paragraph, Owner will investigate the identified conditions, and if they differ materially and cause increase or decrease in Contractor's cost of, or time required for, performance of any part of the Work, Owner will negotiate the appropriate change order following the procedures set forth in the Contract Documents. If Owner determines that physical conditions at the Site are not Latent or are not materially different from those indicated in Contract Documents or that no change in terms of the Contract Documents is justified, Owner will so notify Contractor in writing, stating reasons (with Contractor retaining its rights under Article 12 of this Document 00 72 00.)
- C. Contractor shall not be entitled to any adjustment in the Contract Sum or Contract Time regarding claimed Latent or materially different Site conditions (whether above or below grade) if Contractor knew or should have known of the existence of such conditions at the time Contractor submitted

- its Bid, failed to give proper notice, or relied upon information, conclusions, opinions or deductions of the kind that the Contract Documents preclude reliance upon.
- D. Regarding Underground Facilities, Contractor shall be allowed an increase in the Contract Sum or an extension of the Contract Time, or both, to the extent that they are attributable to the existence of any Underground Facility that is owned and was built by Owner only where the Underground Facility:
1. Was not shown or indicated in the Contract Documents or in the information supplied for bidding purposes or in information on file at USA; and
 2. Contractor did not know of it; and
 3. Contractor could not reasonably have been expected to be aware of it or to have anticipated it from the information available. (For example, if surface conditions such as pavement repairs, valve covers, or other markings, indicate the presence of an Underground Facility, then an increase in the Contract Sum or an extension of the Contract Time will not be due, even if the Underground Facility was not indicated in the Contract Documents, in the information supplied to Contractor for bidding purposes, in information on file at USA, or otherwise reasonably available to Contractor.)
- E. Contractor shall bear the risk that Underground Facilities not owned or built by Owner may differ in nature or locations shown in information made available by Owner for bidding purposes, in information on file at USA, or otherwise reasonably available to Contractor. Underground Facilities are inherent in construction involving digging of trenches or other excavations on Owner's Project, and Contractor is to apply its skill and industry to verify the information available.
- F. Contractor's compensation for claimed Latent or materially different Site conditions shall be limited to the actual, reasonable, incremental increase in cost of that portion of the Work, resulting from the claimed Latent or materially different Site conditions. Such calculation shall take into account the estimated value of that portion of the Work and the actual value of that portion of the Work, using for guidance Contractor's or its subcontractor's bid amount and actual amounts incurred for that portion of the Work and the reasonable expectation (if any) of differing or difficult site conditions in the Work area based on the available records and locale of the Work. For example, if Contractor excavates in an area unexpected, then such costs would be recoverable entirely; while if Contractor extends an existing excavation, then such costs would be recoverable if the resulting excavation costs in that work area exceeded the reasonable expectations therefore.

13.04 Notice of Hazardous Waste or Materials Conditions

- A. Contractor shall give a written Notice of Hazardous Materials Condition to Owner promptly, before any of the following conditions are disturbed (except in an emergency as set forth in this Document 00 72 00), and in no event later than 24 hours after first observance of any:
1. Material that Contractor believes may be hazardous waste or hazardous material, as defined in Section 25117 of the California Health and Safety Code (including, without limitation, Asbestos, lead, PCBs, petroleum and related hydrocarbons, and radioactive material) that is required to be removed to a Class I, Class II, or Class III disposal site in accordance with provisions of existing law (**hazardous material**); or
 2. Other material that may present an imminent substantial danger to persons or property exposed thereto in connection with Work at the Site (**other materials**).
- B. Except as otherwise provided in the Contract Documents or as provided by applicable law, Contractor shall not be required to give any notice for the disturbance or observation of any such hazardous materials or other materials where such matter is disturbed or observed as part of the scope of Work under the Contract Documents (such as hazardous waste or hazardous material investigation, remediation or disposal activities which are identified as the subject of Work under the Contract Documents), where Contractor complies with all requirements in the Contract Documents and applicable law respecting such materials.
- C. Contractor's Notice of Hazardous Materials Condition shall indicate whether the hazardous materials or other materials were shown or indicated in the Contract Documents to be within the scope of Work, and whether the hazardous materials or other materials were brought to the Site by Contractor, its Subcontractors, suppliers, or anyone else for whom Contractor is responsible.

- D. Contractor shall not be entitled to any adjustment in the Contract Sum or Contract Time regarding claimed hazardous waste or materials if:
 - 1. Contractor knew of the existence of such hazardous materials or other materials at the time Contractor submitted its Bid; or
 - 2. Contractor should have known of the existence of such hazardous material or other materials as a result of its having the responsibility to obtain additional or supplementary examinations, investigation, explorations, tests, studies, and data concerning the conditions at or contiguous to the Site prior to submitting its Bid; or
 - 3. Contractor failed to give the written notice within the required timeframe set forth below.
- E. If Owner determines that conditions involve hazardous materials or other materials and that a change in Contract Document terms is justified, Owner will issue either a Request for Proposal or Construction Change Directive under the procedures described in the Contract Documents. If Owner determines that conditions do not involve hazardous materials or other materials or that no change in Contract Document terms is justified, Owner will notify Contractor in writing, stating the reasons for its determination.
- F. In addition to the parties' other rights under this Document 00 72 00, if Contractor does not agree to resume Work based on a reasonable belief that it is unsafe, or does not agree to resume Work under special conditions, Owner may order the disputed portion of Work deleted from the Work, or performed by others, or Owner may invoke its right to terminate Contractor's right to proceed under the Contract Documents in whole or in part, for convenience or for cause as the facts may warrant.
- G. If Contractor does not agree with any Owner determination of any adjustment in the Contract Sum or Contract Time under this Article, Contractor may make a claim as provided in Article 12 of this Document 00 72 00.

ARTICLE 14 - LEGAL AND MISCELLANEOUS

14.01 Laws and Regulations

- A. Contractor shall keep fully informed of and shall comply with all laws, ordinances, regulations and orders of any properly constituted authority affecting the Contract Documents, Work and persons connected with Work, and shall protect and indemnify Owner and its officers, employees, consultants and agents against any claim or liability, including attorney's fees, arising from or based on violation of law, ordinance, regulation or order, whether by Contractor or by Subcontractors, employees or agents. Authorized persons may at any time enter upon any part of Work to ascertain compliance of all applicable laws, ordinances, regulations and orders.

14.02 Permits and Taxes

- A. Contractor shall procure all permits and licenses applicable to the Work (including environmental matters to the extent applicable); pay all charges and fees, including fees for street opening permits; comply with, implement and acknowledge effectiveness of all permits; initiate and cooperate in securing all required notifications or approvals therefore; and give all notices necessary and incident to due and lawful prosecution of Work, unless otherwise provided herein. Owner will pay applicable building permits, sanitation and water fees for the completed construction, except as otherwise provided in the Contract Documents. Contractor shall pay all sales and/or use taxes levied on materials, supplies, or equipment purchased and used on or incorporated into Work, and all other taxes properly assessed against equipment or other property used in connection with Work, without any increase in the Contract Sum. Contractor shall make necessary arrangements with proper authorities having jurisdiction over roads, streets, pipelines, navigable waterways, railroads, and other works in advance of operations, even where Owner may have already obtained permits for the Work.

14.03 Communications and Information Distribution

- A. All communications recognized under the Contract Documents shall be in writing, in the form of a serialized document, by type of communication. For example, RFI's shall be serialized beginning with RFI No. 1; payment applications shall be serialized beginning with Payment Application No. 1, submittals shall be serialized per specification section and transmitted with transmittal sheets

beginning with Transmittal No. 1; and correspondence shall be serialized beginning with letter No. 1. Contractor may propose other record management and identification systems or protocols, intended to facilitate orderly transmittal of project information, storage and retrieval of such information, which Owner will review consistent with these stated objectives, and accept or reject in its sole discretion.

- B. Documents Requiring Signatures. All documents requiring signatures for approval prior to implementing action, as stipulated in other portions of Contract Documents, shall require a manually signed, serialized letter delivered to the other party at its address for notice otherwise specified in the Contract Documents, either personally or by mail.
- C. Electronic data transfer of such correspondence will serve to expedite preliminary concurrence of information, only. Receipt of "hard copy" signature on forms is required prior to implementing action or work as the conditions may require. For example, change orders and authorizations for extra cost, require signatures. A party may acknowledge receipt of PDF copies of required correspondence by e-mail, but in the absence of such acknowledgment, mail or personal delivery is required.
- D. All emails shall be copied to Owner's and Contractor's Project Representative. Owner reserves the right to preclude e-mail communication, in whole or in part, as Project needs may require. Communication between Owner and Contractor shall not be via Twitter, Facebook, or other types of instant text message systems. Any such communications shall be inadmissible for any purpose related to this Contract.

14.04 Suspension of Work

- A. Owner may, without cause, order Contractor in writing to suspend, delay or interrupt Work in whole or in part for such period of time as Owner may determine. An adjustment shall be made for increases in cost of performance of Work of the Contract Documents caused by any such suspension, delay or interruption, calculated using the measures set forth in Section 01 26 00 (Modification Procedures). No adjustment shall be made to extent that performance is, was or would have been so suspended, delayed or interrupted by another cause for which Contractor is responsible.

14.05 Termination of Contract for Cause

- A. Owner may declare Contractor in default and terminate Contractor's right to proceed under the Contract Documents, for cause, should Contractor be the subject of a voluntary or involuntary petition in bankruptcy or admit in writing its inability to pay debts as they may become due. The Contractor shall be in default of the Contract Documents and Owner may terminate the Contractor's right to proceed under the Contract Documents, for cause, in whole or in part, should the Contractor commit a material breach of the Contract Documents and not cure such breach within ten (10) calendar days of the date of notice from Owner to the Contractor demanding such cure; or, if such breach is curable but not curable within such ten (10) day period, within such period of time as is reasonably necessary to accomplish such cure. (In order for the Contractor to avail itself of a time period in excess of 10 calendar days, the Contractor must provide Owner within the ten (10) day period with a written cure plan acceptable to Owner that demonstrates actual resources, personnel and a schedule to promptly to cure said breach, and then diligently commence and continue such cure according to the written plan)
- B. If Owner at any time reasonably believes that Contractor is or may be in default under the Contract Documents as provided above, then Owner may in its sole discretion notify Contractor of this fact and request written assurances from Contractor of performance of Contract Documents and a written plan from Contractor to remedy any default under the terms of Contract Documents that Owner may advise Contractor of in writing. Contractor shall, within ten (10) Days of Owner's request, deliver a written cure plan that meets the requirements of the written cure plan as defined above. Failure of Contractor to provide such written assurances of performance and the required written cure plan within ten (10) Days of request will constitute a material breach of Contract Documents sufficient to justify termination for cause.
- C. In the event of termination by Owner for cause as provided herein, the Contractor shall deliver to Owner possession of the Work in its then condition including, without limitation, all designs, engineering, Project records, cost data of all types, plans and specifications and contracts with

vendors and subcontractors, all other documentation associated with the Project, and all construction supplies and aids dedicated solely to performing the Work which, in the normal course of construction, would be consumed or only have salvage value at the end of the construction period. The Contractor shall remain fully liable for the failure of any Work completed and materials and equipment provided through the date of such termination to comply with the provisions of the Contract Documents. The provisions of this Section shall not be interpreted to diminish any right that Owner may have to claim and recover damages for any breach of the Contract Documents or otherwise, but rather, the Contractor shall compensate Owner for all loss, cost, damage, expense, and/or liability suffered by Owner as a result of such termination and/or failure to comply with the Contract Documents.

- D. In the event a termination for cause is later determined to have been made wrongfully or without cause, then the termination shall be treated as a termination for convenience, and the Contractor shall have no greater rights than it would have had following a termination for convenience. Any Contractor claim arising out of a termination for cause shall be made in accord with Article 12 herein. No other loss, cost, damage, expense or liability may be claimed, requested or recovered by the Contractor.

14.06 Termination of Contract for Convenience

- A. Owner may terminate performance of the Work under the Contract Documents in accordance with this clause in whole, or from time to time in part, whenever Owner shall determine that termination is in Owner's best interest. Termination shall be effected by Owner delivering to the Contractor notice of termination specifying the extent to which performance of the Work under the Contract Documents is terminated, and the effective date of the termination.
- B. Contractor shall comply strictly with Owner's direction regarding the effective date of the termination, the extent of the termination, and shall stop work on the date and to the extent specified.
- C. Contractor shall be entitled to a total payment on account of the Contract work so terminated measured by (i.) the actual cost to Contractor of Work actually performed, up to the date of the termination, with profit and overhead limited to twelve percent (12%) of actual cost of work performed, up to but not exceeding the actual contract value of the work completed as measured by the Schedule of Values and Progress Schedule, (ii.) offset by payments made and other contract credits. In connection with any such calculation, however, Owner shall retain all rights under the Contract Documents including, without limitation, claims, indemnities, or setoffs.
- D. Under no circumstances may Contractor recover legal costs of any nature, nor may Contractor recover costs incurred after the date of the termination.

14.07 Contingent Assignment of Subcontracts

- A. Contractor hereby assigns to Owner each Subcontract for a portion of the Work, provided that:
 - 1. The assignment is effective only after Owner's termination of Contractor's right to proceed under the Contract Documents (or portion thereof relating to that Subcontract) as set forth herein.
 - 2. The assignment is effective only for the Subcontracts which Owner expressly accepts by notifying the Subcontractor in writing;
 - 3. The assignment is subject to the prior rights, if any, of the Surety, obligated by Document 00 61 13.13 (Construction Performance Bond) provided under the Contract Documents, where the Surety exercises its rights to complete the Contract;
 - 4. After the effectiveness of an assignment, Contractor shall, at its sole cost and expense (except as otherwise provided in this Document 00 72 00), sign all instruments and take all actions reasonably requested by Owner to evidence and confirm the effectiveness of the assignment in Owner; and
 - 5. Nothing in this Paragraph shall modify or limit any of Contractor's obligations to Owner arising from acts or omissions occurring before the effectiveness of any Subcontract assignment including, without limitation, all defense, indemnity and hold-harmless obligations arising from or related to the assigned Subcontract.

14.08 Remedies and Contract Integration

- A. Subject to Contract Documents provisions regarding Contractor claims, claim review, and claim resolution, and subject to the limitations therein, the exclusive jurisdiction and venue for resolving all claims, counter claims, disputes and other matters in question between Owner and Contractor arising out of or relating to Contract Documents, any breach thereof or the Project shall be the applicable court of competent jurisdiction located in the State and County where the Project is located. All Owner remedies provided in the Contract Documents shall be taken and construed as cumulative and not exclusive; that is, in addition to each and every other remedy herein provided; and in all instances Owner shall have any and all other equitable and legal rights and remedies which it would have according to law.
- B. The Contract Documents, any Contract Modifications, Change Orders and Change Directives, as further described in Section 01 26 00, shall represent the entire and integrated agreement between Owner and Contractor regarding the subject matters hereof and thereof and shall constitute the exclusive statement of the terms of the parties' agreement. The Contract Documents, and any Contract Modifications and Change Orders, shall supersede any and all prior negotiations, representations or agreements, written or oral, express or implied, that relate in any way to the subject matter of the Contract Documents or written Modifications. Owner and Contractor represent and agree that, except as otherwise expressly provided in the Contract Documents, they are entering into the Contract Documents and any subsequent written Modification in sole reliance upon the information set forth or referenced in the Contract Documents or Contract Modifications; the parties are not and will not rely on any other information, which shall be inadmissible in any proceeding to enforce these documents.
- C. Either party's waiver of any breach or failure to enforce any of the terms, covenants, conditions or other provisions of the Contract Documents at any time shall not in any way affect, limit, modify or waive that party's right thereafter to enforce or compel strict compliance with every term, covenant, condition or other provision hereof, any course of dealing or custom of the trade or oral representations notwithstanding.
- D. Neither acceptance of the whole or any part of Work by Owner nor any verbal statements on behalf of Owner or its authorized agents or representatives shall operate as a waiver or modification of any provision of the Contract Documents, or of any power reserved to Owner herein nor any right to damages provided in the Contract Documents.

14.09 Interpretation

- A. Should any part, term or provision of this Contract or any of the Contract Documents, or any document required herein or therein to be executed or delivered, be declared invalid, void or unenforceable, all remaining parts, terms and provisions shall remain in full force and effect and shall in no way be invalidated, impaired or affected thereby. If the provisions of any law causing such invalidity, illegality or unenforceability may be waived, they are hereby waived to the end that this Contract and the Contract Documents may be deemed valid and binding agreements, enforceable in accordance with their terms to the greatest extent permitted by applicable law. In the event any provision not otherwise included in the Contract Documents is required to be included by any applicable law, that provision is deemed included herein by this reference (or, if such provision is required to be included in any particular portion of the Contract Documents, that provision is deemed included in that portion).
- B. Contract Documents shall not be construed to create a contractual relationship of any kind between (i) Project Manager or any Owner's representative and Contractor; (ii) Owner and/or its Representatives and a Subcontractor, sub-Subcontractor, or supplier of any Project labor, materials, or equipment; or (iii) between any persons or entities other than Owner and Contractor.

14.10 Patents

- A. Fees or claims for any patented invention, article or arrangement that may be used upon or in any manner connected with performance of the Work or any part thereof shall be included in the Bid price for doing the Work. Contractor shall defend, indemnify and hold harmless Owner and each of its officers, employees, consultants and agents including, without limitation, the Board and each Owner's Representative, from all damages, claims for damages, costs or expenses in law or equity, including attorney's fees, arising from or relating to any claim that any article supplied or to be supplied under the Contract Documents infringes on the patent rights, copyright, trade name,

trademark, service mark, trade secret or other intellectual property right of any person or persons or that the person or entity supplying the article does not have a lawful right to sell the same. Such costs or expenses for which Contractor agrees to indemnify and hold harmless the above indemnities include but are not limited to any and all license fees, whether such fees are agreed by any indemnitee or ordered by a court or administrative body of any competent jurisdiction.

14.11 Substitution for Patented and Specified Articles

- A. Except as noted specifically in Document 00 21 13 (Instructions to Bidders) or in Contract Documents, whenever in Specifications, material or process is designated by patent or proprietary name or by name of manufacturer, such designation shall be deemed to be used for purpose of facilitating description of material and process desired, and shall be deemed to be followed by the words "or Approved Equal." Contractor may offer any substitute material or process that Contractor considers "Equal" in every respect to that so designated and if material or process offered by Contractor is, in opinion of Owner, Equal in every respect to that so designated, its use will be approved. However, Contractor may utilize this right only by timely submitting Document 00 63 25 (Substitution Request Form) as provided in Document 00 21 13 (Instructions to Bidders). A substitution will be approved only if it is a true "or Equal" item in every aspect of its design and quality including, without limitation, its dimensions, weights, service requirements, durability, functioning, impact on contiguous construction elements, overall schedule and design.

14.12 Interest of Public Officers

- A. No representative, officer, or employee of Owner no member of the governing body of the locality in which the Project is situated, no member of the locality in which Owner was activated, and no other public official of such locality or localities who exercises any functions or responsibilities with respect to the Project, during the tenure of the official or for one year thereafter, shall, as principal, agent, attorney or otherwise, be directly or indirectly interested, in the Contract Documents or the proceeds thereof.

14.13 Limit of Liability

- A. OWNER, AND EACH OF ITS OFFICERS, BOARD MEMBERS, EMPLOYEES, CONSULTANTS AND AGENTS INCLUDING, WITHOUT LIMITATION, PROJECT MANAGER AND EACH OTHER OWNER REPRESENTATIVE, SHALL HAVE NO LIABILITY TO CONTRACTOR FOR SPECIAL, CONSEQUENTIAL, OR INCIDENTAL DAMAGES, EXCEPT TO THE LIMITED EXTENT THAT THESE CONTRACT DOCUMENTS OR APPLICABLE PUBLIC CONTRACTING STATUTES MAY SPECIFY THEIR RECOVERY.

14.14 Public Records Act.

- A. Contractor is aware that this Contract and any documents provided to the Owner may be subject to the California Public Records Act and may be disclosed to members of the public upon request. It is the responsibility of Contractor to clearly identify information in those documents it considers to be confidential under the California Public Records Act. To the extent that Owner agrees with that designation, such information will be held in confidence whenever possible. All other information will be considered public.

ARTICLE 15 - WORKING CONDITIONS AND PREVAILING WAGES

15.01 Use of Site/Sanitary Rules

- A. All portions of the Work shall be maintained at all times in neat, clean and sanitary condition. Contractor shall furnish toilets for use of Contractor's and Subcontractors' employees on the Site where needed, and their use shall be strictly enforced. All toilets shall be properly secluded from public observation, and shall be located, constructed and maintained subject to Owner's approval.
- B. Contractor shall confine construction equipment, the storage of materials and equipment and the operations of workers to the Site and land areas identified in and permitted by Contract Documents and other land and areas permitted by applicable laws and regulations, rights of way, permits and easements or as designated by Owner, and shall not unreasonably encumber the premises with construction equipment or other materials or equipment. Contractor shall assume full responsibility

for any damage to any such land or area, any improvement located thereon, or to Owner or occupant thereof resulting from the performance of Work.

- C. During the progress of the Work, Contractor shall keep the Site and the Project free from accumulations of waste materials, rubbish and other debris resulting from the Work. At the completion of the Work, Contractor shall clean the site, remove all waste materials, rubbish and debris from and about the Site as well as all tools, appliances, construction equipment and machinery and surplus materials. Contractor shall leave the premises clean and ready for occupancy by Owner at Substantial Completion of Work. Contractor shall restore to original condition all property not designated for alteration by Contract Documents.
- D. Contractor shall not load nor permit any part of any structure or pavement to be loaded in any manner that will endanger the structure or pavement, nor shall Contractor subject any part of Work or adjacent property to stresses or pressures that will endanger it. Contractor shall conduct all necessary existing conditions investigation regarding structural, mechanical, electrical or any other system existing, shall perform Work consistent with such existing conditions, and shall have full responsibility for insufficiencies or damage resulting from insufficiencies of existing systems, equipment or structures to accommodate performing the Work.

15.02 Protection of Work, Persons, and Property

- A. Contractor shall be responsible for initiating, maintaining and supervising all safety and site security precautions and programs in connection with Work, and shall develop and implement a site security and safety plan throughout construction. Contractor shall comply with all safety requirements specified in any safety program established by Owner, or required by state, federal or local laws and ordinances. Contractor shall be responsible for all theft or damage to Work, property or structures, and all injuries to persons, either on the Site or constituting the Work (e.g., materials in transit), arising from the performance of Work of the Contract Documents from a cause.
- B. Contractor shall comply with all applicable laws and regulations of any public body having jurisdiction for safety of persons or property or to protect them from damage, injury or loss; and shall erect and maintain all necessary safeguards for such safety and protection. Contractor shall notify Owners of adjacent property and of Underground Facilities and utility owners when prosecution of the Work may affect them, and shall cooperate with them in the protection, removal, relocation and replacement of their property.
- C. Contractor shall remedy all damage, injury or loss to any property referred to above in this Article, caused, directly or indirectly, in whole or in part, by Contractor, any Subcontractor, supplier, or any other person or organization directly or indirectly employed by any of them to perform or furnish any Work or anyone for whose acts any of them may be liable. Contractor's duties and responsibility for safety and for protection of Work shall continue until such time as all the Work is completed and Final Acceptance of the Work. Owner and its agents do not assume any responsibility for collecting any indemnity from any person or persons causing damage to Contractor's Work.
- D. Contractor shall designate a qualified and experienced safety representative at the Site whose duties and responsibilities shall be the prevention of accidents and the maintaining and supervising of safety precautions and programs.
- E. Owner may, at its option, retain such moneys due under the Contract Documents as Owner deems necessary until any and all suits or claims against Contractor for injury to persons or property shall be settled and Owner receives satisfactory evidence to that effect.
- F. Work within the right-of-way lines of any City, County and/or State shall be done in accordance with the standards and specifications of the controlling agency. Permit for such work shall be obtained and paid for by the Contractor before executing the work within such right-of-ways.

15.03 Responsibility For Safety and Health

- A. Contractor shall ensure that its and each tier of Subcontractors' employees, agents and invitees comply with applicable health and safety laws while at the Site. These laws include without limitation the Occupational Safety and Health Act of 1970 and rules and regulations issued pursuant thereto, and Owner's safety regulations as amended from time to time. Contractor shall comply with all Owner directions regarding protective clothing and gear. These laws also include without limitation Labor Code section 6409.6 and any other laws and regulations concerning COVID-19.

- B. Contractor shall be fully responsible for the safety of its and its Subcontractors' employees, agents and invitees on the Site. Contractor shall notify Owner, in writing, of the existence of hazardous conditions, property or equipment at the Site that are not under Contractor's control. Contractor shall be responsible for taking all the necessary precautions against injury to persons or damage to the property of Contractor, Subcontractors or persons from recognized hazards until the responsible party corrects the hazard.
- C. Contractor shall confine all persons acting on its or its Subcontractors' behalf to that portion of the Site where Work under the Contract Documents is to be performed, Owner-designated routes for ingress and egress thereto, and any other Owner-designated area. Except those routes for ingress and egress over which Contractor has no right of control, within such areas, Contractor shall provide safe means of access to all places at which persons may at any time have occasion to be present.

15.04 Emergencies

- A. In emergencies affecting the safety or protection of persons or Work or property at the Site or adjacent thereto, Contractor, without special instruction or authorization from Owner, is obligated to act to prevent threat and damage, injury or loss, until directed otherwise by Owner. Contractor shall give Owner prompt written notice if Contractor believes that any significant changes in Work or variations from Contract Documents have been caused thereby. If Owner determines that a change in the Contract Documents is required because of the action taken by Contractor in response to such an emergency, a Change Order or Construction Change Directive will be issued to document the consequences of such action.

15.05 Use of Roadways and Walkways

- A. Contractor shall not unnecessarily interfere with use of any roadway, walkway or other facility for vehicular or pedestrian traffic. Before beginning any interference and only with Owner's prior concurrence, Contractor may provide detour or temporary bridge for traffic to pass around or over the interference, which Contractor shall maintain in satisfactory condition as long as interference continues. Unless otherwise provided in the Contract Documents, Contractor shall bear the cost of these temporary facilities.

15.06 Nondiscrimination

- A. No person or entity shall discriminate in the employment of persons upon public works because of race, religious creed, color, national origin, ancestry, physical disability, mental disability, medical condition, marital status, sexual preference, or gender of such persons, except as provided in Government Code Section 12940. Every contractor for public works violating the provisions of Labor Code Section 1735 is subject to all the penalties imposed for a violation of Chapter 1, Part 7, Division 2 of the California Labor Code.

15.07 Prevailing Wages and Working Hours

- A. Contractor shall pay to persons performing labor in and about Work provided for in the Contract Documents an amount equal to or more than the general prevailing rate of per diem wages for (i) work of a similar character in the locality in which the Work is performed and (ii) legal holiday and overtime work in said locality. The per diem wages shall be an amount equal to or more than the stipulated rates contained in a schedule that has been ascertained and determined by the Director of the State Department of Industrial Relations and Owner to be the general prevailing rate of per diem wages for each craft or type of workman or mechanic needed to execute this Contract. Contractor shall also cause a copy of this determination of the prevailing rate of per diem wages to be posted at each Site.
- B. Contractor shall forfeit, as a penalty to Owner, \$200.00 for each laborer, worker, or mechanic employed in performing labor in and about the Work provided for in the Contract Documents for each Day, or portion thereof, that such laborer, worker or mechanic is paid less than the said stipulated rates for any Work done under the Contract Documents by him or her or by any Subcontractor under him or her, in violation of Articles 1 and 2 of Chapter 1 of Part 7 of Division II of the Labor Code. The sums and amounts that are forfeited pursuant to this Paragraph and the terms of the Labor Code shall be withheld and retained from payments due to Contractor under the

Contract Documents, pursuant to this Document 00 72 00 and the Labor Code, but no sum shall be so withheld, retained or forfeited except from the final payment without a full investigation by either the State Department of Industrial Relations or by Owner. The Labor Commissioner pursuant to Labor Code Section 1775 shall determine the final amount of forfeiture.

- C. Contractor shall insert in every subcontract or other arrangement which Contractor may make for performance of Work or labor on Work provided for in the Contract, provision that Subcontractor shall pay persons performing labor or rendering service under subcontract or other arrangement not less than the general prevailing rate of per diem wages for work of a similar character in the locality in which the Work is performed, and not less than the general prevailing rate of per diem wages for holiday and overtime work fixed in the Labor Code.
- D. Contractor stipulates that it shall comply with all applicable wage and hour laws, including without limitation, Labor Code Sections 1776 and 1810-1815. Failure to so comply shall constitute a default under this Contract.
- E. Contractor and its Subcontractors shall be responsible for compliance with Labor Code Sections 1810-1815.
 - 1. Eight hours of labor performed in execution of the Contract constitutes a legal day's work. The time of service of any worker employed on the Project is limited and restricted to 8 hours during any one calendar day, and 40 hours during any one calendar week.
 - 2. Contractor and its Subcontractors shall keep an accurate record showing the name of and actual hours worked each calendar day and each calendar week by each worker employed by him or her in connection with the Project. The record shall be kept open at all reasonable hours to the inspection Owner and to the Division of Labor Standards Enforcement.
 - 3. Contractor or its Subcontractors shall, as a penalty to Owner, forfeit twenty-five dollars (\$25) for each worker employed in the execution of the Contract Documents by the respective Contractor or Subcontractor for each calendar day during which the worker is required or permitted to work more than 8 hours in any one calendar day and 40 hours in any one calendar week in violation of the provisions of Labor Code Sections 1810-1815.
 - 4. Work performed on the Project by employees of Contractor or its Subcontractors in excess of 8 hours per day, and 40 hours during any one week, shall be permitted upon compensation for all hours worked in excess of 8 hours per day at not less than 1 1/2 times the basic rate of pay.
- F. Contractor and its Subcontractors shall be responsible for compliance with Labor Code Section 1776. This Project is subject to prevailing wage compliance monitoring and enforcement by the Department of Industrial Relations.
 - 1. Contractor and Subcontractors must keep accurate payroll records, showing the name, address, social security number, work classification, straight time and overtime hours worked each day and week, and the actual per diem wages paid to each journeyman, apprentice, worker, or other employee employed by him or her in connection with the Work of the Contract Documents. Each payroll record shall contain or be verified by a written declaration as required by Labor Code Section 1776.
 - 2. The payroll records enumerated above must be certified and shall be available for inspection at all reasonable hours at the principal office of the Contractor as required by Labor Code Section 1776.
 - a. Contractor shall inform Owner of the location of records enumerated above, including the street address, City, and county, and shall, within five working days, provide a notice of a change of location and address.
 - b. Contractor or Subcontractor has 10 days in which to comply subsequent to receipt of a written notice requesting the records enumerated above. In the event that the Contractor or Subcontractor fails to comply with the ten-day period, he or she shall, as a penalty to Owner on whose behalf the contract is made or awarded, forfeit \$100.00 for each calendar day, or portion thereof, for each worker, until strict compliance is effectuated. Upon the request of the Division of Apprenticeship Standards or the Division of Labor Standards Enforcement, these penalties shall be withheld from progress payments then due. Contractor is not subject to a penalty

assessment pursuant to this Paragraph due to the failure of a Subcontractor to comply with this Paragraph.

3. With each payment application, Contractor shall also deliver certified payrolls to Owner as set forth above in this Document 00 72 00 (General Conditions), and concurrently therewith (but in no event less frequently than monthly) directly to the Labor Commissioner in the format prescribed by the Labor Commissioner.
4. Contractor shall post all jobsite notices if and when prescribed by regulation.

15.08 Environmental Controls

- A. Contractor shall comply with all rules, regulations, ordinances, and statutes that apply to any Work performed under the Contract Documents including, without limitation, any toxic, water, stormwater management and soil pollution controls and air pollution controls specified in Government Code Section 11017. Contractor shall be responsible for insuring that Contractor's Employees, Subcontractors, and the public are protected from exposure to airborne hazards or contaminated water, soil, or other toxic materials used during or generated by activities on the Site or associated with the Project.

15.09 Shoring Safety Plan

- A. Any conflict between this Paragraph and the Technical Specifications shall be resolved in favor of the most stringent requirement.
- B. At least five Days in advance of any excavation five feet or more in depth, Contractor shall submit to Owner a detailed plan showing the shoring, bracing and sloping design (including calculations) and other provisions to be made for worker protection from the hazard of caving ground during the excavation, as required by Labor Code Section 6705. A civil or structural engineer registered in California shall prepare and sign any plan that varies from the shoring system standards established by the State Construction Safety Orders.
- C. During the course of Work, Contractor shall be responsible for determining where sloping, shoring, and/or bracing is necessary and the adequacy of the design, installation, and maintenance of all shoring and bracing for all excavation, including any excavation less than five feet in depth. Contractor will be solely responsible for any damage or injuries that may result from excavating or trenching. Owner's acceptance of any drawings showing the shoring or bracing design or Work schedule shall not relieve Contractor of its responsibilities under this Paragraph.
- D. Appoint a qualified supervisory employee who shall be responsible to determine the sloping or shoring system to be used depending on local soil type, water table, stratification, depth, etc.

15.010 Contractor's License Notice

- A. Statement required by California Business & Professions Code Section 7030: "Contractors are required by law to be licensed and regulated by the Contractor's State License Board which has jurisdiction to investigate complaints against contractors if a complaint regarding a patent act or omission is filed within four years of the date of the alleged violation. A complaint regarding a latent act or omission pertaining to structural defects must be filed within 10 years of the date of the alleged violation. Any questions concerning a contractor may be referred to the Registrar, Contractor' State License Board, P.O. Box 26000, Sacramento, California 95826."

END OF DOCUMENT

DOCUMENT 00 73 16

SUPPLEMENTAL CONDITIONS – INSURANCE AND INDEMNIFICATION

ARTICLE 1 INSURANCE

- 1.01** At or before the date specified in Document 00 21 13 (Instructions to Bidders), Contractor shall furnish to Owner satisfactory proof that Contractor has taken out for the entire period covered by the Contract the following classes of insurance in the form and with limits and deductibles specified below, unless otherwise specified in Contract Documents:
- A. Commercial General Liability (CGL): Insurance Services Office (ISO) Form CG 00 01 covering CGL on an “occurrence” basis, including products and completed operations, property damage, bodily injury, and personal & advertising injury with limits no less than **\$2,000,000** per occurrence. If a general aggregate limit applies, either the general aggregate limit shall apply separately to this project/location (ISO CG 25 03 or 25 04) or the general aggregate limit shall be twice the required occurrence limit.
 - B. Comprehensive Automobile Liability Insurance covering all owned, non-owned, and hired vehicles. Such insurance shall provide coverage not less than the standard Comprehensive Automobile Liability policy with limits not less than **\$2,000,000** each person Bodily Injury, **\$2,000,000** each occurrence Bodily Injury, and **\$2,000,000** each occurrence Property Damage.
 - C. All-Risk Course of Construction Insurance (a.k.a. Builder’s Risk Insurance): Unless otherwise specifically provided, Contractor shall purchase and maintain property insurance (All-Risk Course of Construction Insurance [a.k.a. Builder’s Risk Insurance]) on the Work, equipment, and supplies stored at the site to the full insurable value thereof (subject to such deductible amounts as may be agreed upon or required by laws and regulations.) This insurance shall include the interests of Owner and its agents, Contractor, and subcontractors in the work. Owner shall be listed as an additional insured party. Said policy shall insure against the perils of fire, extended coverage, testing and shall include “all risk” insurance for physical loss and damage including theft, vandalism and malicious mischief, collapse and water damage, and such other perils as may be provided herein, and shall include damages, losses and expenses arising out of or resulting from any insured loss or incurred in the repair or replacement of any insured property (including but not limited to fees and charges of engineers, architects, attorneys and other professionals).
 - D. Workers’ Compensation Insurance for all persons whom the Contractor may employ in carrying out Work contemplated under Contract Documents, in accordance with the Act of Legislature of State of California, known as “Workers’ Compensation Insurance and Safety Act,” approved May 26, 1913, and all acts amendatory or supplemental thereto, in the statutory amount.
 - E. When the construction is to be accomplished within a public or private right-of-way requiring special insurance coverage, the Contractor shall conform to the particular requirements and provide the required insurance. The Contractor shall include in his liability policy all endorsements that the said authority may require for the protection of its officers, agents, employees and interests.
 - F. **Not Used**
 - G. **Not Used**
 - H. Any deductibles or self-insured retentions must be declared to and approved by Owner. At the option of Owner, either the insurer shall reduce or eliminate such deductibles or self-insured retentions as respects the Owner, its officers, officials, employees, and volunteers, or the Contractor shall provide a financial guarantee satisfactory to Owner guaranteeing payment of losses and related investigations, claim administration, and defense expenses.
- 1.02** If Contractor normally carries insurance in an amount greater than the minimum amounts required by Owner in Paragraph 1.01 above, that greater amount shall become the minimum required amount of insurance for purposes of the Contract. Therefore, Contractor hereby acknowledges and

agrees that all insurance carried by it shall be deemed liability coverage for all actions it performs in connection with the Contract.

1.03 All policies of insurance shall be placed with insurers acceptable to Owner. The insurance underwriter(s) for all insurance policies except Workers' Compensation shall have an A. M. Best Company rating of **A-, VIII** or better, unless otherwise specified in Contract Documents. Required minimum amounts of insurance may be increased should conditions of Work, in opinion of Owner, warrant such increase. Contractor shall increase required insurance amounts upon direction by Owner.

1.04 Required Endorsements: The policies required under Document 00 72 00 (General Conditions) and this Document 00 73 16 (including any umbrella or excess liability policy(ies)) shall be endorsed as follows and provided prior to execution of the Contract Documents.

A. Commercial General Liability Endorsement

Contractor shall furnish to Owner the "Commercial General Liability Endorsement" as provided in this Document 00 73 16. The preferred form is a CG 20 10 11 85, but the Contractor may substitute an alternative endorsement, with prior approval by Owner, provided the endorsement references "your work" and contains the following minimum specific components:

1. The insurance policy number.
2. A statement that includes the following language: "Olivehurst Public Utility District, including its officers, officials, employees, and volunteers, are included as insureds."
3. A statement acknowledging the insured's insurance as primary as respects the Olivehurst Public Utility District and that any other insurance maintained by the Olivehurst Public Utility District shall be in excess of the insured's insurance and shall not be called upon to contribute with it.
4. A statement that the policy shall not be canceled except after thirty (30) days prior written notice to Olivehurst Public Utility District.
5. An original, authorized signature.
6. Coverage shall be at least as broad as Insurance Services Office Commercial General Liability coverage (occurrence form CG 0001).

An alternative to the submission of a CG 20 10 11 85 form is available. A CG 20 10 10 01 or a CG 20 33 10 01 (or similarly worded document) along with a CG 20 37 10 01 will be acceptable in lieu of a CG 20 10 11 85 form.

Note: Policies that include endorsement numbers CG 22 94 10 01 and/or CG 22 95 10 01, or have the endorsement wording written into the policy language, are not acceptable.

B. Automobile Liability Special Endorsement

Contractor shall furnish to Owner the "Automobile Liability Special Endorsement" as provided in this Document 00 73 16. The Contractor may substitute an alternative endorsement with prior approval by Owner, provided the endorsement contains the following minimum specific components:

1. The insurance policy number.
2. A statement that includes the following language: "Olivehurst Public Utility District, including its officers, officials, employees, and volunteers, are included as insureds."
3. A statement acknowledging the insured's insurance as primary as respects Olivehurst Public Utility District and that any other insurance maintained by Olivehurst Public Utility District shall be in excess of the insured's insurance, and shall not be called upon to contribute with it.
4. A statement that the policy shall not be canceled except after thirty days prior written notice to Olivehurst Public Utility District._____.
5. An original, authorized signature.
6. Coverage shall be at least as broad as Insurance Services Office form number CA 0001 (Ed. 1/87) covering Automobile Liability, Code 1 (any auto).

C. Workers' Compensation and Employer's Liability Special Endorsement

Contractor shall furnish to Owner the "Workers' Compensation and Employer's Liability Special Endorsement" as provided in this Document 00 73 16. The Contractor may substitute an alternative endorsement with prior approval by Owner, provided the endorsement contains the following minimum specific components:

1. A waiver of subrogation clause which states the following:
"This insurance company agrees to waive all rights of subrogation against Olivehurst Public Utility District, its officers, officials, employees, and volunteers for losses paid under the terms of this policy which arise from the work performed by the named insured for the District."
2. The insurance policy number.
3. A statement that the policy shall not be canceled except after thirty days prior written notice to the Olivehurst Public Utility District.
4. An original, authorized signature.
5. Contractor shall maintain limits for employer's liability no less than \$1,000,000 per accident for bodily injury or disease.

As an alternative, Owner will accept State Compensation Insurance Fund endorsement documentation in lieu of the form of endorsement provided in this Document 00 73 16, provided that the documentation contains State Fund endorsement numbers 2065 and 2570.

- D. Each such policy shall apply separately to each insured against whom claim is made or suit is brought, except with respect to the limit of the insurance company's liability required hereunder. Should any of the policies identified herein contain a "cross-suits" exclusion, such exclusion must not apply to any additional insureds.
- E. Contractor or its insurance broker shall submit to Owner a copy of the "Declarations Page" for each policy identified under Paragraph 1.01 above. The Declarations Page shall include the name of

the insurance carrier, the applicable policy number, the types of coverage and limits of insurance provided, the effective date(s) of the policy, the insurance broker's name and license number, and a list of all coverage forms and endorsements.

- F. Any available insurance proceeds broader than or in excess of the specified minimum insurance coverage requirements and/or limits shall be available to the Owner as an additional insured. The requirements for coverage and limits shall be the greater of either the minimum coverage and limits specified in this Agreement or the broader coverage and maximum limits of coverage of any insurance policy or proceeds available to the named insured.
- 1.05** Certificates of insurance and endorsements shall have clearly typed thereon Olivehurst Public Utility District Contract Number and title of Contract Documents. Written notice of cancellation, non-renewal, or reduction in coverage of any policy shall be mailed to Owner (Attention: Olivehurst Public Utility District Risk Manager / Purchasing Agent) at the address listed in Document 00 52 00 (Agreement), 60 Days in advance of the effective date of the cancellation, non-renewal, or reduction in coverage. Written notice of cancellation for non-payment shall be mailed within 10 Days of cancellation. Contractor shall maintain all insurance in full force and effect during entire period of performance of Contract Documents, including warranty and guarantee periods. However, Contractor may discontinue All-Risk Course of Construction Insurance after Final Payment, and shall maintain General Liability Insurance throughout the entire Extended Term specified Paragraph 1.01 above. At time of making application for extension of time, and during all periods exceeding the Contract Time resulting from any cause, Contractor shall submit evidence that insurance policies will be in effect during requested additional period of time. Upon Owner's request, Contractor shall submit to Owner, within 30 Days, copies of the actual insurance policies or renewals or replacements.
- 1.06** Contractor shall pay all insurance premiums, including any charges for required waivers of subrogation or the endorsement of additional insureds. If Contractor fails to maintain insurance, Owner may take out comparable insurance, and deduct and retain amount of premium from any sums due Contractor under Contract Documents.
- 1.07** If injury occurs to any employee of Contractor, Subcontractor or sub-subcontractor for which the employee, or the employee's dependents in the event of employee's death, is entitled to compensation from Owner under provisions of the Workers' Compensation Insurance and Safety Act, as amended, or for which compensation is claimed from Owner, Owner may retain out of sums due Contractor under Contract Documents, amount sufficient to cover such compensation, as fixed by the Act, as amended, until such compensation is paid, or until it is determined that no compensation is due. If Owner is compelled to pay compensation, Owner may, in its discretion, either deduct and retain from the Contract Sum the amount so paid, or require Contractor to reimburse Owner.
- 1.08** Nothing herein shall be construed as limiting in any way the extent to which Contractor or any Subcontractor may be held responsible for payment of damages resulting from their operations.
- 1.09** Except for Comprehensive General Liability Insurance, of which Subcontractors need only obtain **\$1,000,000** in coverage, all Subcontractors shall maintain the same insurance required to be maintained by Contractor with respect to their portions of the Work unless otherwise indicated in Contract Documents, and Contractor shall cause the Subcontractors to furnish proof thereof to Owner within ten Days of Owner's request.
- 1.10** The following provisions apply to any licensed professional engaged by Contractor to perform portions of the Work (Professional).
- A. Each Professional shall maintain the following insurance, unless otherwise specified in Contract Documents:
- B. Professional Liability Insurance, insuring against professional errors and omissions arising from Professional's Work on the Project, in an amount not less than **\$1,000,000** combined single limit for each occurrence. If Professional cannot provide an occurrence policy, Professional shall

provide insurance covering claims made as a result of performance of Work on this Project and shall maintain such insurance in effect for not less than two years following Final Completion of the Project.

1. Professional shall satisfy all other provisions of this Document 00 73 16 relating to that insurance, including without limitation providing required insurance certificates (containing the required endorsements) before commencing its Work on the Project.

ARTICLE 2 RESPONSIBILITY OF CONTRACTOR AND INDEMNIFICATION

- 2.01** Owner and each of its officers, employees, consultants and agents including, without limitation, the Board, Project Manager and each Owner's Representative, shall not be liable or accountable in any manner for loss or damage that may happen to any part of the Work; loss or damage to materials or other things used or employed in performing the Work; injury, sickness, disease, or death of any person; or damage to property resulting from any cause whatsoever except their sole negligence, willful misconduct or active negligence, attributable to performance or character of the Work, and Contractor releases all of the foregoing persons and entities from any and all such claims.
- 2.02** To the furthest extent permitted by law (including, without limitation, Civil Code Section 2782), Contractor shall defend, indemnify, and hold harmless, Owner and each of its officers, officials, employees, consultants and agents including, without limitation, the governing board, Project Manager and each Owner's Representative, from claims, suits, actions, losses and liability of every kind, nature and description including, without limitation, claims and fines of regulatory agencies and attorney's fees and consultant's fees, directly or indirectly arising out of, connected with, or resulting from performance of the Work, failure to perform the Work, or condition of the Work that is caused in whole or part by any act or omission of Contractor, Subcontractors, anyone directly or indirectly employed by any of them, or anyone for whose acts any of them may be liable, resulting from any cause whatsoever except for liability for loss, damage, or expense arising from Owner's sole negligence, willful misconduct, or active negligence.
- 2.03** With respect to third-party claims against Contractor, Contractor waives any and all rights to any type of express or implied indemnity including, without limitation, costs of defense, against Owner and each of its officers, officials, employees, consultants and agents including, without limitation, Owner, the governing board, Project Manager and each Owner's Representative. Owner shall provide timely notice to Contractor of any third-party claim relating to the Contract Documents, in accordance with Public Contract Code Section 9201.
- 2.04** Approval or purchase of any insurance contracts or policies shall in no way relieve from liability nor limit the liability of Contractor, its Subcontractors of any tier, or the officers or agents of any of them.
- 2.05** To the furthest extent permitted by law (including, without limitation, Civil Code §2782), the indemnities, releases of liability and limitations of liability, claims procedures, and limitations of remedy expressed throughout Contract Documents shall apply even in the event of breach of Contract, passive negligence, fault or strict liability of the party(ies) indemnified, released, or limited in liability, and shall survive the termination, rescission, breach, abandonment, or completion of the Work or the terms of the Contract Documents. If Contractor fails to perform any of these defense or indemnity obligations, Owner may in its discretion back charge Contractor for Owner's costs and damages resulting therefrom and withhold such sums from progress payments or other Contract moneys which may become due.
- 2.06** Owner's officers, directors, agents, or employees shall not be personally responsible for any liability arising under the Agreement, except such obligations as are specifically set forth herein.

(CONTRACT AGREEMENT PACKAGE)

(Attach completed Contractor's Commercial General Liability "Certificate of Insurance" to this page)

(CONTRACT AGREEMENT PACKAGE)

(Attach completed Contractor's "Commercial General Liability Endorsement" to this page.)

(CONTRACT AGREEMENT PACKAGE)

(Attach completed Contractor's "Automobile Liability Special Endorsement" to this page.)
REV. 2/08

(CONTRACT AGREEMENT PACKAGE)

(Attach completed Contractor's "Workers' Compensation and Employer's Liability Special Endorsement" to this page.)

END OF DOCUMENT

DOCUMENT 00 73 24

IN-USE OFF-ROAD DIESEL-FUELED FLEETS REGULATION

Attention is directed to provisions of the California Code of Regulations Sections 2449, 2449.1, and 2449.2, Title 13, relating to In-Use Off-Road Diesel-Fueled Fleets (Regulation), issued by the California Air Resources Board (CARB). Contractor warrants that it shall be knowledgeable of and comply with the Regulation, including without limitation the matters contained in this Document 00 73 04, at all times prior to and during its work on the Project. The Regulation shall control in the event of any conflict between this Document 00 73 04 and the Regulation.

A. Contracting Requirements.

1. If the Project involves the use of vehicles subject to the Regulation, Contractor must obtain copies of the valid Certificates of Reported Compliance, as described in Regulation section 2449(n), for the fleet selected for the Contract and its listed subcontractors, if applicable, prior to entering into a new or renewed contract with that fleet.

2. Contractor shall not enter into a contract with a fleet for which it does not have a valid Certificate of Reported Compliance for the fleet and Contractor's listed Subcontractors, if applicable, prior to entering into a new or renewed contract with that fleet.

3. The Certificates of Reported Compliance received by the Contractor for the Project must be retained for three years after the Project's completion. Upon request by CARB, these records must be provided to CARB within five business days of the request.

4. If the Project is considered to be an emergency operation, as defined in Regulation section 2449(c)(18), it is exempt from the requirements in Regulation section 2449(i)(1)-(3). Nevertheless, Contractor must still retain records verifying vehicles subject to the Regulation that are operating on the emergency operations project are actually being operated on the project for emergency operations only. These records must include a description of the emergency, the address or a description of the specific location of the emergency, the dates on which the emergency operations were performed, and an attestation by the fleet that the vehicles are operated on the project for emergency operations only.

B. Other Contractor Requirements.

1. Between March 1 and June 1 of each year, Contractor must collect new valid Certificates of Reported Compliance for the current compliance year, as defined in Regulation section 2449(n), from all fleets that have an ongoing contract with the Contractor as of March 1 of that year. Contractor must not write contracts to evade this requirement.

2. Contractor shall only allow fleets with valid Certificates of Reported Compliance on Contractor's job sites.

3. If Contractor discovers that any fleet intending to operate vehicles subject to the Regulation for Contractor does not have a valid Certificate of Reported Compliance, as defined in Regulation section 2449(n), or if Contractor observes any noncompliant vehicles subject to the Regulation on Contractor's job site, then Contractor must report the required information to CARB when as provided and within the time period contained in in the Regulation

4. Upon request by CARB, Contractor must immediately disclose to CARB the name and contact information of each responsible party for all vehicles subject to the Regulation operating at the job site or for Contractor.

5. If applicable, Contractor shall prominently display signage for any project where vehicles subject to the Regulation as provided and within the time period contained in in the Regulation.

END OF DOCUMENT

DOCUMENT 00 73 80

APPRENTICESHIP PROGRAM

ARTICLE 1 COMPLIANCE REQUIRED

- 1.01** Contractor and Subcontractors shall comply with the requirements of Labor Code Sections 1776, 1777.5, and 1777.6 concerning the employment of apprentices by Contractor or Subcontractors. Willful failure to comply may result in penalties, including loss of the right to Bid on or receive public works contracts.

ARTICLE 2 APPRENTICESHIP REQUIREMENTS

- 2.01** Contractor and Subcontractors understand and agree that to the extent compensation for the Work contemplated in this agreement is greater than \$30,000, apprentices will need to be employed on the Project as required by law. (Labor Code section 1777.5(d).) If apprentices will need to be employed, Contractor understands and agrees that:
- A. It is Contractor's responsibility to submit contract award information for each craft required on the Project using the appropriate form prepared by the Division of Apprenticeship Standards ("DAS") within the California Department of Industrial Relations ("DIR")—currently the "DAS 140 form." A copy of the current DAS 140 form is available at Attachment A for reference. If Contractor is approved to train apprentices, Contractor must send the required information to its apprenticeship committee. If Contractor is not approved to train apprentices, Contractor must send the information to all apprenticeship committees that can supply apprentices to the site of the public works project.
 - B. It is Contractor's responsibility to make training fund contributions in the amount established in the prevailing wage rate – either to the applicable apprenticeship committee, or the California Apprenticeship Council ("CAC").
 - C. It is Contractor's responsibility to contact the applicable apprenticeship committee to request apprentices for each craft or trade on the Project using the appropriate form DIR, currently the DAS 142 form. A copy of DAS 142 is available at Attachment B for reference. The form must be submitted at least three business days before apprentices are required
 - D. It is Contractor's responsibility to ensure apprentices are employed in the correct ratio. Contractor should be sure to employ on hour of apprentice work for every five hours performed by a journeyman level worker.
 - E. More information is available on DIR's website. <https://www.dir.ca.gov/Public-Works/Apprentices.html> Contractor is responsible for complying with any updated guidance, and using any updated forms, provided by DIR.

ARTICLE 3 CERTIFICATION OF APPROVAL

- 3.01** Labor Code Section 1777.5, as amended, requires a Contractor or Subcontractor employing tradespersons in any apprenticeable occupation to apply to the joint apprenticeship committee nearest the site of a public works project and which administers the apprenticeship program in that trade for a certification of approval. The certificate shall also fix the ratio of apprentices to journeypersons that will be used in performance of the Contract. The ratio of work performed by apprentices to journeypersons in such cases shall not be less than one *hour* of apprentices work for every five *hours* of labor performed by journeypersons (the minimum ratio for the land surveyor classification shall not be less than one apprentice for each five journeypersons), except:
- A. When unemployment for the previous three month period in the area exceeds an average of 15 percent;
 - B. When the number of apprentices in training in the area exceeds a ratio of one to five;
 - C. When a trade can show that it is replacing at least 1/30 of its membership through apprenticeship training on an annual basis state-wide or locally; or

- D. Assignment of an apprentice to any work performed under a public works contract would create a condition which would jeopardize his or her life or the life, safety, or property of fellow employees or the public at large or if the specific task to which the apprentice is to be assigned is of such a nature that training cannot be provided by a journey person.

ARTICLE 4 FUND CONTRIBUTIONS

- 4.01 Contractor is required to make contributions to funds established for administration of apprenticeship programs if Contractor employs registered apprentices or journeypersons in any apprenticeable trade on such contracts and if other contractors on the public works site are making such contributions.

ARTICLE 5 APPRENTICESHIP STANDARDS

- 5.01 Information relative to apprenticeship standards, wage schedules, and other requirements may be obtained from the Director of the California Department of Industrial Relations, or from the Division of Apprenticeship Standards and its branch offices.

PUBLIC WORKS CONTRACT AWARD INFORMATION

Contract award information must be sent to your Apprenticeship Committee if you are approved to train. If you are not approved to train, you must send the information (which may be this form) to ALL applicable Apprenticeship Committees in your craft or trade in the area of the site of the public work. Go to: <http://www.dir.ca.gov/databases/das/pwaddrstart.asp> for information about programs in your area and trade. You may also consult your local Division of Apprenticeship Standards (DAS) office whose telephone number may be found in your local directory under California, State of, Industrial Relations, Division of Apprenticeship Standards.

Do not send this form to the Division of Apprenticeship Standards.

NAME OF YOUR COMPANY	CONTRACTOR'S STATE LICENSE NO.
MAILING ADDRESS- NUMBER & STREET, CITY, ZIP CODE	AREA CODE & TELEPHONE NO.
NAME & ADDRESS OF PUBLIC WORKS PROJECT	DATE YOUR CONTRACT EXECUTED
	DATE OF EXPECTED OR ACTUAL START OF PROJECT
NAME & ADDRESS OF PUBLIC AGENCY AWARDED CONTRACT	ESTIMATED NUMBER OF JOURNEYMEN HOURS
	OCCUPATION OF APPRENTICE
THIS FORM IS BEING SENT TO: (NAME & ADDRESS OF APPRENTICESHIP PROGRAM(S))	ESTIMATED NUMBER OF APPRENTICE HOURS
	APPROXIMATE DATES TO BE EMPLOYED

This is not a request for dispatch of apprentices.

Contractors must make a separate request for actual dispatch, in accordance with Section 230.1(a) California Code of Regulations

Check One Of The Boxes Below

1. We are already approved to train apprentices by the _____
Apprenticeship Committee. We will employ and train under their Standards. Enter name of the Committee
2. We will comply with the standards of _____
Apprenticeship Committee for the duration of this job only. Enter name of the Committee
3. We will employ and train apprentices in accordance with the California Apprenticeship Council regulations, including § 230.1 (c) which requires that apprentices employed on public projects can only be assigned to perform work of the craft or trade to which the apprentice is registered and that the apprentices must at all times work with or under the direct supervision of journeymen/men.

Signature _____ Date _____

Typed Name _____

Title _____


State of California - Department of Industrial Relations DIVISION
OF APPRENTICESHIP STANDARDS

DAS 140 (REV. 1/04)

Explanation to box 1 - 3 on form DAS 140

- Box 1 is for contractors who are already approved to train by an apprenticeship program (signatory/member).
- Box 2 indicates that a contractor is willing to comply with a program's Standards for the current project only. This generally means that the fringe benefits and the training funds will be paid to that Committee's Trust Fund. It also allows a contractor to take advantage of a more generous maximum ratio than the CAC Standards, but does not affect the minimum ratio of 1 apprentice hour for every 5 journeyman hours.
- Box 3 means that a contractor will be governed by the regulations of the California Apprenticeship Council. Generally this means that the minimum and maximum ratio for apprentices is the same – 1 apprentice hour for every 5 journeyman hours per each craft, totaled at the end of the project. It also means the Training Fund Contribution is usually paid to the California Apprenticeship Council.

Attachment B
DAS 142

 REQUEST FOR DISPATCH OF AN APPRENTICE – DAS 142 FORM DO NOT SEND THIS FORM TO DAS	
<p>You may use this form to request dispatch of an apprentice from the Apprenticeship Committee in the craft or trade in the area of the public work. Go to: http://www.dir.ca.gov/databases/das/pwaddrstart.asp for information about programs in your area and trade. You may also consult your local Division Apprenticeship Standards (DAS) office whose telephone number may be found in your local directory under California, State of, Industrial Relations, Division of Apprenticeship Standards. <u>Except for projects with less than 40 hours of journeyworkers work, you must request and employ apprentices in no less than 8 hour increments.</u></p> <p style="text-align: center;">List one occupation/craft per form</p>	
<p>Date: _____</p> <hr/> <p>To Applicable Apprenticeship Committee:</p> <p>Name: _____</p> <p>Address: _____</p> <p>_____</p> <p>Tel. No. _____ Fax No. _____</p>	<p>Contractor Requesting Dispatch:</p> <p>Name: _____</p> <p>Address: _____</p> <p>_____</p> <p>License No. _____</p> <p>PWC Registration Number: _____</p> <p>Tel. No. _____ Fax No. _____</p>
<p>Project Information: PWC Project Number _____ Contract Number _____</p> <p>Total Contract Amount. _____ Sub-Contract Amount _____</p> <p>Name of the Project: _____</p> <p>Address: _____</p>	
<p>Dispatch Request Information:</p> <p>Number of Apprentice(s) Needed: _____ Craft or Trade: _____</p> <p>Date Apprentice(s) to Report: _____ (72 hrs. notice required) Time to Report: _____</p> <p>Name of Person to Report to: _____</p> <p>Address to Report to: _____</p> <p>_____</p>	
<p><i>You may use this form to make your written request for the dispatch of an apprentice. Requests for dispatch must be in writing and submitted at least 72 hours in advance (excluding weekends and holidays) via first class mail, fax or email. Proof of submission may be required. Please take note of California Code of Regulations, Title 8, § 230.1 (a) for all applicable requirements regarding apprenticeship requests and/or visit https://www.dir.ca.gov/das/PublicWorksForms.htm</i></p> <p><i>DAS 142 (Revised 10/18)</i></p>	

END OF DOCUMENT

DOCUMENT 00 91 13

ADDENDA

**OLIVEHURST PUBLIC UTILITY DISTRICT
HISTORIC OLIVEHURST PIPELINE REPLACEMENT PROJECT
1970 9TH AVE, OLIVEHURST, CA 95961
PROJECT NUMBER 2024-001**

[DOCUMENT TO BE COMPLETED AS ADDENDA DURING BID PERIOD]

[If a conformed copy is created, delete bracketed line above and replace with the following:]

The following Addenda were issued, modifying the Project Manual:

Addendum No. 1, issued on **[date]**
Addendum No. 2, issued on **[date]**
[Continue as appropriate]

(Addenda have been incorporated into the conformed Project Manual.)

END OF DOCUMENT

DIVISION 1 GENERAL REQUIREMENTS

SECTION 01 1100

SUMMARY OF WORK

PART 1 GENERAL

1.01 Summary

- A. Section includes Summary of Work and Work Restrictions including:
 - 1. Work Covered By Contract Documents
 - 2. Bid Item, Allowances and Alternates
 - 3. Specialty Items
 - 4. Work Under Other Contracts
 - 5. Future Work
 - 6. Work Sequence
 - 7. Work Days and Hours
 - 8. Shutdown for Discovery of Cultural Resources
 - 9. Cooperation of Contractor and Coordination with Other Work
 - 10. Partial Occupancy/Utilization Requirements
 - 11. Contractor Use of Site
 - 12. Air Quality Standards
 - 13. Construction Staking and Monument Protection
 - 14. Protection of Existing Structures and Underground Facilities
 - 15. Permits
 - 16. Owner-Furnished Products

1.02 Work Covered by Contract Documents

- A. Work comprises of the construction of Owner's Historic Olivehurst Pipeline Replacement Project located in Olivehurst California. Contract Documents fully describe the Work.
- B. The Work of this Contract comprises construction of all the Work indicated, described in the Specifications, or otherwise required by the Contract Documents. Unless provided otherwise in the Contract Documents, all risk of loss to Work covered by Contract Documents shall rest with Contractor until Final Acceptance of the Work. Cost of maintenance of systems and equipment prior to Final Acceptance will be considered as included in prices Bid and no direct or additional payment will be made therefore.
- C. For all Bid items, furnish and install all Work, including connections to existing systems, indicated and described in Specifications and all other Contract Documents. Work and requirements applicable to each individual Bid item, or unit of Work, shall be deemed incorporated into the description of each Bid item (whether Lump Sum or Unit Price). Any Bid item may be deleted from the Work and Contract Sum, in total or in part, prior to or after award of Contract without compensation in any form or adjustment of other Bid items or prices therefore.

1.03 **Bid Items**

BID ITEM NO. 1 - MOBILIZATION, DEMOBILIZATION, BONDS, INSURANCE, ADMINISTRATION

The lump sum bid shall not exceed five percent (5%) of the total bid price.

Mobilization shall not exceed three (3%) percent of the total bid item price. Mobilization shall include: the obtaining of insurance and bonds; moving onto the site of all equipment and facilities; submittal and approval of initial project schedule; obtaining and paying for all permits by other agencies as applicable; furnishing temporary construction utilities (temporary power, toilets, water, fences, etc.); installing construction signs; temporary buildings and field office trailer(s); and other construction all as required for the proper performance and completion of the work. Includes project management including, but not limited to, office meetings, field meetings, and all coordination with the District, Engineer, Yuba County Department of Public Works, Inspectors and Construction Manager. Work includes obtaining final approval and permit closeouts from all affected Agencies and property owners. Includes preparation of as-built plans as described in these specifications. The Contractor shall keep the as-built plans up-to-date on a monthly basis. Final compensation will be delayed until all items described above are submitted and approved.

The demobilization shall not exceed two percent (2%) of the total bid item price. Demobilization shall include site cleaning and restoration of surfaces within the job site not covered under other bid items, post-construction meeting, removal of all temporary facilities and equipment from the work area, disconnection of the temporary construction utilities and turnover of project to the Owner.

In the event the Contractor writes in a Mobilization/Demobilization price greater than five percent (5%) on the Bid Schedule found in 00 41 13 **BID FORM**, the Owner will pay any excess with the final Progress Payment.

Contractor may apply for payment of mobilization on a percent complete basis as the items covered in the Mobilization are being completed.

Contractor may apply for payment of demobilization on a percent complete basis after the overall project substantial completion is achieved and the project demobilization has begun.

The lump sum price shall be full compensation for the preparation and installation or submittal of these materials, and for all labor, equipment, tools and incidentals to complete this item.

BID ITEM NO. 2 - TRAFFIC CONTROL PLAN PREPARATION, APPROVAL, AND IMPLEMENTATION

Measurement and Payment By Full Compensation By Lump Sum.

Includes all tools, equipment, materials and labor necessary to provide and implement a traffic control plan in compliance with the Yuba County Department of Public Works encroachment permit standards and approved by Yuba County Department of Public Works. This includes all signage, flaggers, signal control, barricades, cones, K-rail concrete barriers, etc. used in the implementation of the traffic control plan. The contractor is responsible for development, approval and implementation of a traffic control plan.

This also includes all costs for any additional project identification signs required by Yuba County Department of Public Works and the encroachment permit. If road closures are implemented this will also include all time and materials required to coordinate with the Yuba County Sheriff and the Olivehurst Fire Department, in addition to bus service, mail delivery and garbage pick-up.

BID ITEM NO. 3 - WATER POLLUTION CONTROL PLAN PREPARATION AND IMPLEMENTATION

Measurement and Payment By Full Compensation By Lump Sum.

Includes all tools, equipment, materials and labor necessary to prepare, implement, maintain and repair the construction BMPs as required in the Water Pollution Control Plan (See Section 01 57 13 Temporary Erosion and Sedimentation Control). This includes any testing and reporting that may be necessary and keeping the WPCP in compliance. The plan must be approved by the District. Any violations and/or fines issued will be the sole responsibility of the Contractor to correct and/or pay.

The estimated project area is 25,000 square feet. A SWPPP is not required if the disturbed area is less than 1-acre. However, if the contractor intends to expand the disturbed area of the project beyond 1-acre for any reason (for example required staging area) Contractor shall also prepare and provide a SWPPP as part of this bid item.

BID ITEM NO. 4 - SITE SAFETY (SHEETING, SHORING AND BRACING)

Measurement and Payment By Full Compensation By Lump Sum. Includes providing a detailed plan of worker safety and maintaining safety during construction, including conforming to Labor Code Sections 6700-6708, all applicable safety orders and permits.

Contractor may apply for payment for this Bid Item on a percent complete basis as the items covered in Site Safety are being completed.

The lump sum price shall be full compensation for the preparation and installation or submittal of these materials, and for all labor, equipment, tools and incidentals to complete this item.

BID ITEM NO. 5 – POTHOLE EXISTING FACILITIES (MAINLINE)

Measurement and Payment By Full Compensation By the Unit Price per Each pothole required to establish all utilities crossing the Mainline Alignment.

This item includes the potholing of each known utility shown on the plans and identified through USA markings in accordance with the USA utility potholing requirements and determined necessary by the Contractor, and agreed to by District, to identify and avoid utilities conflicts. This includes, but is not limited to, providing all labor, materials, and equipment necessary to perform each pothole; documenting the pothole information and reporting it to the Engineer a minimum of 4-weeks before construction work begins. This also includes restoring the pothole location in accordance with the County requirements for temporary pothole paving.

Potholing activities NOT included are potholes made for the purpose of safe installation of new water services in accordance with the plans and specifications. The Contractor's coordination efforts with the private property owners are to be included in Bid Item 1. Potholing efforts associated with new service connections are to be included in the respective 'New Water Service' bid items.

No additional compensation will be provided for a utility located within the standard limits of a USA marking. See 02221 – Trenching Backfilling and Compacting section 1.06 for additional pothole requirements. Contractor shall make all attempts to minimize the number of potholes.

BID ITEM NO. 6 - DEMOLITION AND ABANDONMENT

Measurement and Payment By Full Compensation By Lump Sum.

This item includes the demolition, dismantling and removal of asphalt, concrete, and landscape

necessary to access the facility being abandoned or demolished; existing pipe sections and fitting necessary to abandon the pipe; existing fire hydrants and bury, existing air release valves, and any other facility to be demolished or abandoned. This includes, visible appurtenances such as, but not limited to, valves, risers, and valve boxes.

Abandonment of existing pipe shall be done in accordance with the plans, specifications and District Standards. This shall include, but not limited to, removing necessary pipe, fittings, valves, risers, and valve boxes; plugging and/or capping pipe of pressurized and non-pressurized pipe. This also includes, but not limited to, providing and installing all necessary fittings to connect to the existing pipeline (spools, couplings, etc.) necessary to make the abandonment and all costs and materials associated with any temporary tie-ins necessary to keep pipelines and services active during construction.

Abandonment of the existing water services shall be done in accordance with the plans, specifications, and District Standards. This shall include, but not limited to, existing service line necessary to make the new service connection; and concrete or hardscape and/or landscape around the existing meter box. The existing service line shall be disconnected from the existing meter and abandoned in-place; this includes removing the District valve and fittings and capping the existing service line.

All demolished materials described above shall be removed from the site and legally disposed of by the Contractor. All salvageable items identified by the District shall be returned and delivered to the District's corporation yard.

The Contractor is responsible to review each abandonment location to determine the fittings and pipe requirements necessary to adequately abandon the existing pipeline and appurtenance while maintaining service to the customer during construction. The plans provide locations of pipelines to be abandoned and pipelines to remain in service.

This bid item includes the Contractor preparing and submitting for the District's approval a system abandonment plan that includes, but not limited to, the abandonment of the existing main, services and associated appurtenances. This includes all coordination with the District pertaining to when and how the Contractor will execute the abandonment plan.

The Contractor is responsible for determining the final abandonment sequencing and including all costs in their bid for any temporary and permanent facilities necessary to execute the abandonment plan.

At all abandonment locations, the Contractor is responsible for restoration of all A.C. pavement, sidewalk, gutter and improvements on private property to the property owner's reasonable satisfaction.

BID ITEM NO. 7 - 6-INCH UNRESTRAINED WATER MAIN INSTALLATION (DR 18)

Measurement and Payment By Full Compensation By the Lineal Foot.

Includes, furnish and installation of the unrestrained 6" C900 DR18 PVC. This includes, but not limited to, fabrication, freighting, fittings, couplings, crosses, tees, bends, polyethylene encasement, warning tape, locating wire, fire service tees and valves; saw cutting, excavation, placement, bedding, backfilling, compacting of backfill, pipe and construction dewatering, thrust blocking, flushing and testing, disinfecting, temporary surface pavement repair and striping, and all incidental work associated with the pipeline installation complete, with the exception of other items listed separately on the Bid Schedule.

The total length shown on the Bid Schedule is the estimated actual length (horizontal) computed from the design drawings. Payment will be made per the actual length of pipe installed (horizontal and vertical).

BID ITEM NO. 8 - 6-INCH RESTRAINED WATER MAIN INSTALLATION (DR 14)

Measurement and Payment By Full Compensation By the Lineal Foot.

Includes, furnish and installation of the restrained 6" C900 DR 14 PVC. This includes, but not limited to, fabrication, freighting, fittings, couplings, pipe restraint, crosses, tees, bends, polyethylene encasement, warning tape, locating wire, fire service tees and valves; saw cutting, excavation, placement, bedding, backfilling, compacting of backfill, pipe and construction dewatering, thrust blocking, flushing and testing, disinfecting, temporary surface pavement repair and striping, and all incidental work associated with the pipeline installation complete, with the exception of other items listed separately on the Bid Schedule (see bid items for Tie-ins and Jack and Bore). Any additional transition couplings not shown on the plans, but required to change pipe materials, should also be included in this bid item.

The total length shown on the Bid Schedule is the estimated actual length (horizontal) computed from the design drawings. Payment will be made per the actual length of pipe installed (horizontal and vertical). Estimated length does not include restrained 6" C900 DR 14 PVC that may be contained in other bid items.

BID ITEM NO. 9 - 8-INCH UNRESTRAINED WATER MAIN INSTALLATION (DR 18)

Measurement and Payment By Full Compensation By the Lineal Foot.

Includes, furnish and installation of the unrestrained 8" C900 DR18 PVC. This includes, but not limited to, fabrication, freighting, fittings, couplings, crosses, tees, bends, polyethylene encasement, warning tape, locating wire, fire service tees and valves; saw cutting, excavation, placement, bedding, backfilling, compacting of backfill, pipe and construction dewatering, thrust blocking, flushing and testing, disinfecting, temporary surface pavement repair and striping, and all incidental work associated with the pipeline installation complete, with the exception of other items listed separately on the Bid Schedule.

The total length shown on the Bid Schedule is the estimated actual length (horizontal) computed from the design drawings. Payment will be made per the actual length of pipe installed (horizontal and vertical).

BID ITEM NO. 10 - 8-INCH UNRESTRAINED WATER MAIN INSTALLATION (DR 14)

Measurement and Payment By Full Compensation By the Lineal Foot.

Includes, furnish and installation of the unrestrained 8" C900 DR 14 PVC to be installed on 8th Ave in proximity to the existing sewer main. This includes, but not limited to, fabrication, freighting, fittings, couplings, crosses, tees, bends, polyethylene encasement, warning tape, locating wire, fire service tees and valves; saw cutting, excavation, placement, bedding, backfilling, compacting of backfill, pipe and construction dewatering, thrust blocking, flushing and testing, disinfecting, temporary surface pavement repair and striping, and all incidental work associated with the pipeline installation complete, with the exception of other items listed separately on the Bid Schedule. This bid item encompasses STA 15+90 to 17+45 and STA 19+60 to 22+76.

The total length shown on the Bid Schedule is the estimated actual length (horizontal) computed from the design drawings. Payment will be made per the actual length of pipe installed (horizontal and vertical).

BID ITEM NO. 11 - 8-INCH RESTRAINED WATER MAIN INSTALLATION (DR 14)

Measurement and Payment By Full Compensation By the Lineal Foot.

Includes, furnish and installation of the restrained 8" C900 DR 14 PVC. This includes, but not limited to, fabrication, freighting, fittings, couplings, pipe restraint, crosses, tees, bends, polyethylene encasement, warning tape, locating wire, fire service tees and valves; saw cutting, excavation, placement, bedding, backfilling, compacting of backfill, pipe and construction dewatering, thrust blocking, flushing and testing, disinfecting, temporary surface pavement repair and striping, and all incidental work associated with the pipeline installation complete, with the exception of other items listed separately on the Bid Schedule (see bid items for Tie-ins and Jack and Bore). Any additional transition couplings not shown on the plans, but required to change pipe materials, should also be included in this bid item.

The total length shown on the Bid Schedule is the estimated actual length (horizontal) computed from the design drawings. Payment will be made per the actual length of pipe installed (horizontal and vertical). Estimated length does not include restrained 8" C900 DR 14 PVC contained in other bid items.

BID ITEM NO. 12 – 8-INCH INLINE GATE VALVES

Measurement and Payment By Unit Price for Each 8-inch Inline Gate Valve Indicated on the bid schedule.

Includes installing the valve in accordance with detail 7/D2, the plans and specifications, and in coordination with the District and County inspector.

This includes all labor, material, and equipment including, but not limited to, fabrication, freighting, labor, tools, equipment and materials necessary to complete installation of valves including preparation, excavation, backfill, polyethylene encasement, valve, nut, bolt, gasket, valve operating extension, and valve riser, box and lid.

This includes adjusting all new valve boxes and iron to grade in coordination with placing permanent pavement. The Contractor shall provide all tools, equipment, materials, and labor necessary to make the adjustment to grade including, but not limited to, furnishing materials; saw cutting; pavement removal; excavation and backfill; subgrade preparation; constructing concrete collars; adjusting valve box iron and utility boxes to grade; furnishing new iron and utility boxes (if applicable); and all incidental work necessary to make the adjustment to grade. All frames, covers, boxes, grates, and manholes are permitted for reuse unless damaged during initial removal or unless otherwise directed by the District or as shown on the plans.

BID ITEM NO. 13 – UNDERCROSSING (48" STORM DRAINS) VIA JACK AND BORE

Measurement and Payment By Full Compensation by Lump Sum.

This item includes furnishing and installing an 18" Steel Casing and 8" C900 DR 14 PVC carrier pipe. This includes, but is not limited to, air valve, blow off valve, pipe, fabrication, freighting, fittings, couplings, adapter couplings, pipe restraint, corrosion protection, AC saw cutting, pit excavations, equipment set up and removal, boring and jacking process, bedding, backfilling, dewatering, flushing and testing, disinfecting, temporary surface pavement repair and all labor, equipment, tools and incidentals, incidental work associated with the Bore and Jack completion, with the exception of other items listed separately on the Bid Schedule.

Full compensation for all costs for labor, tools, equipment, and materials necessary to complete installation of the 8" waterline under the three 48" RCP Storm Drains on Western Ave from

approximate station 3+78 to 5+04 including preparation, excavation, backfill, surface repair, pipe, fittings, air valve and blow off valve, etc. are considered included in this item.

Undercrossing shall be installed per DDW requirements and detail 1/D1 & 4/D1 of contact drawings.

BID ITEM NO. 14 – UNDERCROSSING (36” STORM DRAINS) VIA JACK AND BORE

Measurement and Payment By Full Compensation by Lump Sum.

This item includes furnishing and installing an 18” Steel Casing and 8” C900 DR 14 PVC carrier pipe. This includes, but is not limited to, air valve, blow off valve, pipe, fabrication, freighting, fittings, couplings, adapter couplings, pipe restraint, corrosion protection, AC saw cutting, pit excavations, equipment set up and removal, boring and jacking process, bedding, backfilling, dewatering, flushing and testing, disinfecting, temporary surface pavement repair and all labor, equipment, tools and incidentals, incidental work associated with the Bore and Jack completion, with the exception of other items listed separately on the Bid Schedule.

Full compensation for all costs for labor, tools, equipment, and materials necessary to complete installation of the 8” waterline under the three 36” RCP Storm Drains on 8th Ave from approximate station 22+56 to 23+78 including preparation, excavation, backfill, surface repair, pipe, fittings, air valve and blow off valve, etc. are considered included in this item.

Undercrossing shall be installed per DDW requirements and detail 1/D1 & 4/D1 of contact drawings.

BID ITEM NO. 15 - TIE-IN - DETAIL 1/T1 (OLIVEHURST AND 8TH AVE @ STA 13+95)

Measurement and Payment By Full Compensation By Lump Sum.

Bid item is based on the connection detail included in the plans, existing field conditions, and per District Standards and encroachment permit requirements.

Included in this bid item are, but not limited to, all costs for labor, tools, equipment, and materials necessary to complete the tie-in of the new system to the existing system per OPUD Standard drawings or as indicated on the plan. This includes coordination with the District, preparation, excavation, backfill, temporary paving and striping, fittings, thrust blocking and restraints, polyethylene wrap, valves and temporary closure of the existing water system where required. This bid item encompasses STA 13+39 to 14+27.

BID ITEM NO. 16 - TIE-IN - DETAIL 2/T1 (8TH AVE @ STA 24+06)

Measurement and Payment By Full Compensation By Lump Sum.

Bid item is based on the connection detail included in the plans, existing field conditions, and per District Standards and encroachment permit requirements.

Included in this bid item are, but not limited to, all costs for labor, tools, equipment, and materials necessary to complete the tie-in of the new system to the existing system per OPUD Standard drawings or as indicated on the plan. This includes coordination with the District, preparation, excavation, backfill, temporary paving and striping, fittings, thrust blocking and restraints, polyethylene wrap, and temporary closure of the existing water system where required. This bid item encompasses STA 23+86 to 24+06.

BID ITEM NO. 17 - TIE-IN - DETAIL 3/T1 (9TH AVE @ STA 1+00)

Measurement and Payment By Full Compensation By Lump Sum.

Bid item is based on the connection detail included in the plans, existing field conditions, and per District Standards and encroachment permit requirements.

Included in this bid item are, but not limited to, all costs for labor, tools, equipment, and materials necessary to complete the tie-in of the new system to the existing system per OPUD Standard drawings or as indicated on the plan. This includes coordination with the District, preparation, excavation, backfill, temporary paving and striping, fittings, thrust blocking and restraints, polyethylene wrap, and temporary closure of the existing water system where required. This bid item encompasses STA 1+00 to 1+30.

BID ITEM NO. 18 - TIE-IN - DETAIL 4/T1 (OLIVEHURST AND 9TH AVE @ STA 14+23)

Measurement and Payment By Full Compensation By Lump Sum.

Bid item is based on the connection detail included in the plans, existing field conditions, and per District Standards and encroachment permit requirements.

Included in this bid item are, but not limited to, all costs for labor, tools, equipment, and materials necessary to complete the tie-in of the new system to the existing system per OPUD Standard drawings or as indicated on the plan. This includes coordination with the District, preparation, excavation, backfill, temporary paving and striping, fittings, thrust blocking and restraints, polyethylene wrap, valves and temporary closure of the existing water system where required. This bid item encompasses STA 13+63 to 14+23.

BID ITEM NO. 19 - TIE-IN - DETAIL 5/T1 (OLIVEHURST AND 10TH AVE @ STA 13+82)

Measurement and Payment By Full Compensation By Lump Sum.

Bid item is based on the connection detail included in the plans, existing field conditions, and per District Standards and encroachment permit requirements.

Included in this bid item are, but not limited to, all costs for labor, tools, equipment, and materials necessary to complete the tie-in of the new system to the existing system per OPUD Standard drawings or as indicated on the plan. This includes coordination with the District, preparation, excavation, backfill, temporary paving and striping, fittings, thrust blocking and restraints, polyethylene wrap, valves and temporary closure of the existing water system where required. This bid item encompasses STA 13+22 to 13+82.

BID ITEM NO. 20 - TIE-IN - DETAIL 6/T2 (WESTERN AND 11TH AVE @ STA 1+11)

Measurement and Payment By Full Compensation By Lump Sum.

Bid item is based on the connection detail included in the plans, existing field conditions, and per District Standards and encroachment permit requirements.

Included in this bid item are, but not limited to, all costs for labor, tools, equipment, and materials necessary to complete the tie-in of the new system to the existing system per OPUD Standard drawings or as indicated on the plan. This includes coordination with the District, preparation, excavation, backfill, temporary paving and striping, fittings, thrust blocking and restraints, polyethylene wrap, valves and temporary closure of the existing water system where required. This bid item encompasses STA 1+11 to 1+71.

BID ITEM NO. 21 - TIE-IN - DETAIL 7/T2 (WESTERN AND 8TH AVE @ STA 21+07)

Measurement and Payment By Full Compensation By Lump Sum.

Bid item is based on the connection detail included in the plans, existing field conditions, and per District Standards and encroachment permit requirements.

Included in this bid item are, but not limited to, all costs for labor, tools, equipment, and materials necessary to complete the tie-in of the new system to the existing system per OPUD Standard drawings or as indicated on the plan. This includes coordination with the District, preparation, excavation, backfill, temporary paving and striping, fittings, thrust blocking and restraints, polyethylene wrap, valves and temporary closure of the existing water system where required. This bid item encompasses STA 20+40 to 21+07 and includes the connection to the 8th Ave alignment and associated valves from STA 1+00 to 1+60.

BID ITEM NO. 22 – CON - DETAIL 8/T2 (WESTERN & 9TH AVE @ STA 14+27)

Measurement and Payment By Full Compensation By Lump Sum.

Bid item is based on the connection detail included in the plans, existing field conditions, and per District Standards and encroachment permit requirements.

Included in this bid item are, but not limited to, all costs for labor, tools, equipment, and materials necessary to complete the tie-in of the new system to the existing system per OPUD Standard drawings or as indicated on the plan. This includes coordination with the District, preparation, excavation, backfill, temporary paving and striping, fittings, thrust blocking and restraints, polyethylene wrap, valves and temporary closure of the existing water system where required. This bid item encompasses STA 13+66 to 14+58 of the Western Ave Alignment and includes the connection to the 9th Ave alignment and associated valves from STA 1+30 to STA 1+84.

BID ITEM NO. 23 – CON - DETAIL 9/T2 (WESTERN & 10TH AVE @ STA 7+58)

Measurement and Payment By Full Compensation By Lump Sum.

Bid item is based on the connection detail included in the plans, existing field conditions, and per District Standards and encroachment permit requirements.

Included in this bid item are, but not limited to, all costs for labor, tools, equipment, and materials necessary to complete the tie-in of the new system to the existing system per OPUD Standard drawings or as indicated on the plan. This includes coordination with the District, preparation, excavation, backfill, temporary paving and striping, fittings, thrust blocking and restraints, polyethylene wrap, valves and temporary closure of the existing water system where required. This bid item encompasses STA 7+22 to 7+95 of the Western Ave Alignment and includes the connection to the 10th Ave alignment and associated valves from STA 1+00 to STA 1+61.

BID ITEM NO. 24 – CON - DETAIL 10/T2 (8TH AVE & PRIVATE RD @ STA 23+80)

Measurement and Payment By Full Compensation By Lump Sum.

Bid item is based on the connection detail included in the plans, existing field conditions, and per District Standards and encroachment permit requirements.

Included in this bid item are, but not limited to, all costs for labor, tools, equipment, and materials necessary to complete the tie-in of the new system to the existing system per OPUD Standard drawings or as indicated on the plan. This includes coordination with the District, preparation, excavation, backfill, temporary paving and striping, fittings, thrust blocking and restraints, polyethylene wrap, valves and temporary closure of the existing water system where required. This bid item encompasses STA 23+78 to 23+84 of the 8th Ave Alignment and includes the connection to the Private Rd alignment and associated valves from STA 1+00 to STA 1+61.

BID ITEM NO. 25 – NEW FIRE HYDRANT ASSEMBLY (SHORT SIDE and LONG SIDE)

Measurement and Payment By Full Compensation By the Unit Price per Each as shown in the bid schedule.

Includes furnishing all labor, material, and equipment required to install the new fire hydrant assembly connected to the new main complete and in-place in accordance with OPUD standard detail 8-10 (3/D3). Due to project constraints, the contractor to assume half (9) of the hydrants to be installed with an additional 90 degree fitting in order to place valve and hydrant adjacent to each other near the R.O.W. limits.

This includes, but is not limited to, the hydrants and hydrant bury, 6-inch valves and all necessary piping, fittings and anode bag, riser, valve box, tracer wire, restraint and gaskets, tack weld 3 of the 6 bolts on the hydrant, concrete pad and thrust blocking, saw cutting, excavation and backfill, concrete and/or asphalt restoration in accordance with these plans and Yuba County standards, painting, property hardscape and landscape restoration and all other incidentals. It also includes the blue reflector to be placed at the centerline of the roadway adjacent to the fire hydrant per Yuba County Standards.

BID ITEM NO. 26 – NEW WATER SERVICES CONNECTION - (LONG SIDE)

Measurement and Payment By Full Compensation By the Unit Price per Each for the 1-inch diameter service as shown on the plans.

The limits of this pay item begins at the service saddle connection to the main and ends with the Curb stop 90 to be reconnected to the existing meter per detail 7/D3. This includes, but is not limited to, furnishing and installing, new saddle, 1-inch polyethylene pipe, all fittings, unions and washers, nipples and couplings, and valves necessary to install the new 1-inch service line. This includes material freighting; potholing to locate and expose existing services and utilities; saw cutting and removal of AC paving and landscape; excavating, bedding, backfilling, and compacting; pipe dewatering and construction dewatering; temporary and permanent trench pavement and patch paving for potholing per Yuba County Trench Detail 300; and meter box reconnection. See sheet G8 and G9 for individual meter information and details 2/D4, 4/D4, & 5/D4 for typical meter locations.

Note that all meters, meter boxes, and meter reader components are to be reused or replaced by OPUD if determined to be inadequate for reuse. Service components will include everything up to the Muller curb stop 90. See detail 6/D3 for required meter assembly components. See specification section 15080 – Pipe fittings and accessories for a list of approved products.

BID ITEM NO. 27 – NEW WATER SERVICE & METER RELOCATION - (LONG SIDE)

Measurement and Payment By Full Compensation By the Unit Price per Each for the 1-inch diameter service and meter box relocation as shown on the plans.

The limits of this pay item begins at the service saddle connection to the main and ends with the reconnection to the existing in-tract behind the relocated meter. Meters, meter boxes and meter reading components shall be reused and relocated per OPUD standard detail 8-32 (6/D3). New service lines shall be installed per detail 7/D3. This includes, but is not limited to, furnishing and installing, new saddle, 1-inch polyethylene pipe, all fittings, unions and washers, nipples and couplings, and valves necessary to install the new 1-inch service line. Once relocated, a new meter spud shall be provided (straight or 90 down) to and new poly pipe shall be installed to reconnect to the customer in-tract piping using an appropriate coupling. This includes material freighting; potholing to locate and expose existing services and utilities; saw cutting and removal of AC paving and landscape; excavating, bedding, backfilling, and compacting; pipe dewatering and construction dewatering; temporary and permanent trench pavement and patch paving for potholing per Yuba

County Trench Detail 300; and meter box reconnection. See sheet G8 and G9 for individual meter information and details 2/D4, 4/D4, & 5/D4 for typical meter locations.

Note that all meters, meter boxes, and meter reader components are to be reused or replaced by OPUD if determined to be inadequate for reuse. Service components will include everything up to the Muller curb stop 90. In-tract reconnection includes a new meter spud, piping and an appropriate coupling to reconnect the in-tract. See detail 6/D3 for required meter assembly components. See specification section 15080 – Pipe fittings and accessories for a list of approved products.

BID ITEM NO. 28 – NEW WATER SERVICE CONNECTION - (SHORT SIDE)

Measurement and Payment By Full Compensation By the Unit Price per Each for the 1-inch diameter service as shown on the plans.

The limits of this pay item begins at the service saddle connection to the main and ends with the Curb stop 90 to be reconnected to the existing meter per detail 7/D3. This includes, but is not limited to, furnishing and installing, new saddle, 1-inch polyethylene pipe, all fittings, unions and washers, nipples and couplings, and valves necessary to install the new 1-inch service line. This includes material freighting; potholing to locate and expose existing services and utilities; saw cutting and removal of AC paving and landscape; excavating, bedding, backfilling, and compacting; pipe dewatering and construction dewatering; temporary and permanent trench pavement and patch paving for potholing per Yuba County Trench Detail 300; and meter box reconnection. See sheet G8 and G9 for individual meter information and details 2/D4, 4/D4, & 5/D4 for typical meter locations.

Note that all meters, meter boxes, and meter reader components are to be reused or replaced by OPUD if determined to be inadequate for reuse. Service components will include everything up to the Muller curb stop 90. See detail 6/D3 for required meter assembly components. See specification section 15080 – Pipe fittings and accessories for a list of approved products.

BID ITEM NO. 29 – NEW WATER SERVICE & METER RELOCATION - (SHORT SIDE)

Measurement and Payment By Full Compensation By the Unit Price per Each for the 1-inch diameter service and meter box relocation as shown on the plans.

The limits of this pay item begins at the service saddle connection to the main and ends with the reconnection to the existing in-tract behind the relocated meter. Meters, meter boxes and meter reading components shall be reused and relocated per OPUD standard detail 8-32 (6/D3). New service lines shall be installed per detail 7/D3. This includes, but is not limited to, furnishing and installing, new saddle, 1-inch polyethylene pipe, all fittings, unions and washers, nipples and couplings, and valves necessary to install the new 1-inch service line. Once relocated, a new meter spud shall be provided (straight or 90 down) to and new poly pipe shall be installed to reconnect to the customer in-tract piping using an appropriate coupling. This includes material freighting; potholing to locate and expose existing services and utilities; saw cutting and removal of AC paving and landscape; excavating, bedding, backfilling, and compacting; pipe dewatering and construction dewatering; temporary and permanent trench pavement and patch paving for potholing per Yuba County Trench Detail 300; and meter box reconnection. See sheet G8 and G9 for individual meter information and details 2/D4, 4/D4, & 5/D4 for typical meter locations.

Note that all meters, meter boxes, and meter reader components are to be reused or replaced by OPUD if determined to be inadequate for reuse. Service components will include everything up to the Muller curb stop 90. In-tract reconnection includes a new meter spud, piping and an appropriate coupling to reconnect the in-tract. See detail 6/D3 for required meter assembly components. See specification section 15080 – Pipe fittings and accessories for a list of approved products.

BID ITEM NO. 30 – NEW WATER SERVICE - VACANT LOT

Measurement and Payment By Full Compensation By the Unit Price per Each for the 1-inch diameter service and new meter box as shown on the plans.

The limits of this pay item begins at the service saddle connection to the main and ends with the furnished installation of the new meter box. Meter boxes shall be located and installed per OPUD standard detail 8-32 (6/D3) and service lines shall be installed per detail 7/D3. This includes, but is not limited to, furnishing and installing, new saddle, 1-inch polyethylene pipe, all fittings, unions and washers, nipples and couplings, and valves necessary to install the new 1-inch service line. This includes material freighting; potholing to locate and expose existing services and utilities; removal of landscape; excavating, bedding, backfilling, and compacting; pipe dewatering and construction dewatering. See sheet G8 and G9 for individual meter information and detail 1/D4 for typical meter placement.

BID ITEM NO. 31 – FLUSH/PRESSURE TEST/DISINFECTION

Measurement and Payment By Full Compensation By Lump Sum. This Bid Item includes performing the flushing, disinfection, and pressure testing of all new water mains in accordance with the District Standards and these specifications to the District's satisfaction. This includes, but is not limited to, furnishing all labor, equipment, and materials necessary to perform the flushing, pressure test, and disinfection of the new water main prior to being allowed to make the final connection to the existing water system.

BID ITEM NO. 32 – TRENCH PAVEMENT RESTORATION (MAINLINE)

Measurement and Payment By Full Compensation By the Square Foot for permanent pavement restoration per the plans and encroachment permit requirements.

Per County of Yuba, assume existing AC to be 4" thick. Therefore, per standard utility trench detail 300, AC thickness for pavement replacement should be assumed to be 5" thick.

Included in the bid item are all costs for freight, labor, tools, equipment and materials necessary to complete permanent pavement restoration for mainline, tie-ins and appurtenances in open cuts. Not included in this item are trench pavement restoration associated with new services.

All pavement restoration shall be installed per Yuba County Department of Public Works standards and encroachment permit conditions.

Payment will be made per the actual square footage of trench pavement restoration completed excluding the key grind and overlay which is included in bid item No. 33.

BID ITEM NO. 33 – PAVEMENT RESTORATION MAINLINE (2" KEYGRIND AND OVERLAY)

Measurement and Payment By Full Compensation By the Square Foot of permanent pavement restoration per the plans and encroachment permit requirements.

Included in the bid item are all cost for freight, labor, tools, equipment and materials necessary to complete a 2" key grind and overlay pavement restoration for all impacted pavement surfaces related to mainline installation. Also included in this bid item are costs for replacement of all existing traffic striping damaged during construction per specification section 02575 Pavement Restoration.

All pavement restoration shall be installed per Yuba County Department of Public Works standards and encroachment permit conditions. Extents of pavement restoration shall be per Yuba County Department of Public Works standard trench detail 300. Inspectors will determine appropriate limits of restoration in accordance with the encroachment permit conditions.

Payment will be made per the actual square footage of 2" key grind and overlay restoration completed.

BID ITEM NO. 34 – LANDSCAPE AND HARDSCAPE REPAIRS

Measurement and Payment By Lump Sum for Licensed Landscaper (C-27) to perform repairs to existing Landscape and Hardscape per spec section 02491 - Landscaping Repairs.

Included in this item are all materials, labor and documentation required to repair existing hardscape and landscape for all private properties impacted by construction. This includes fencing, walkways, planters, irrigation, brick or stone construction, etc. Contractor is responsible for providing an itemized invoice for each property accompanied by construction photography detailed in specification 02070 – Construction Photography.

Payment will be made per actual work done as documented in the itemized invoices.

1.04 Not Used.

1.05 Not Used.

1.06 Not Used.

1.07 Not Used.

1.08 Work Days and Hours

- A. Work Days and hours: Owner's Regular Business Days and hours for construction personnel, such as facilities managers, architects, inspectors, and maintenance personnel, are **Monday-Friday inclusive, 7:00 a.m. - 5:00 p.m. local time.**
- B. Work at the Site on weekends or holidays is not permitted, unless Contractor requests otherwise from Owner and County in writing at least **48 hours** in advance and Owner approves in its sole discretion.

1.09 Shutdown for Discovery of Cultural Resources

- A. If discovery is made of items of historical archaeological or paleontological interest, immediately cease all Work in the area of discovery. Archaeological indicators may include, but are not limited to, dwelling sites, locally darkened soils, stone implements or other artifacts, fragments of glass or ceramics, animal bones, human bones, and fossils. After cessation of excavation, immediately contact Owner. Do not resume Work until authorization is received from Owner. When resumed, excavation or other activities shall be as directed by Owner.

1.10 Not Used.

1.11 Not Used.

1.12 Contractor Use of Site

- A. Confine operations at Site to areas permitted by Contract Documents, permits, ordinances, and laws. Do not unreasonably encumber Site with materials or equipment.
- B. Assume full responsibility for protection and safekeeping of products stored on premises. Move any stored products that interfere with operations of Owner or other contractor.
- C. Coordinate parking, storage, staging, and Work areas with Owner. Owner will provide a storage area for Contractor's equipment and materials. Do not store construction materials in the dripline of any tree.
- D. Prior to commencement of Work or excavation, Contractor and Owner shall jointly survey the area adjacent to the Project area making permanent note and record of such existing damage such as cracks, sags or other similar damage. This record shall serve as a basis for determination of subsequent damage to structures, conditions or other existing improvements due to Contractor's

operations. All parties making the survey shall sign the official record of existing damage. Cracks, sags or damage of any nature to the adjacent Project area, not noted in the original survey but subsequently noted, shall be reported immediately to Owner.

- E. The Contractor shall follow all City ordinances in force during the duration of this Contract.
- F. It is essential that the Contractor perform the Work with as little interference and disturbance as possible to the surrounding neighborhood.
- G. When suspect materials, outside the scope of Work, are encountered during the Work or restoration process, the Contractor shall immediately contact the Project Manager for evaluation and approval of the methods for dealing with the material.

1.13 Air Quality Standards

- A. Ensure that idling time for all heavy equipment is minimized to reduce on-Site emissions.
- B. Maintain equipment in good mechanical condition.
- C. Cover trucks hauling dirt.
- D. Limit dust emissions during periods of high winds (greater than 15 miles per hour).
- E. Replace ground cover in disturbed areas as soon as possible.
- F. Enclose, cover, water, or apply soil binders to exposed stockpiles.
- G. Remove earth tracked onto neighboring paved roads at least once daily.
- H. Limit equipment speed to 10 miles per hour in unpaved areas.

1.14 Construction Staking and Monument Protection

- A. Notify Owner three Business Days prior to the need for initial staking. Owner will provide engineering surveys to establish construction stakes that in Owner's judgment are necessary to enable Contractor to proceed with the Work.
- B. If Contractor finds any additional staking necessary, notify Owner in writing two Business Days in advance. Owner shall have no liability for any inadequacy unless Contractor notifies Owner and Owner fails to cure within three Business Days of such notice.
- C. Contractor shall be responsible for laying out the Work, shall protect and preserve the established construction stakes and property monuments, and shall make no changes or relocations without the prior written approval of Owner. Whenever Contractor knows or reasonably should know that any Work activity is likely to damage or destroy any construction stakes or property monuments, or require relocation because of necessary changes in grades or locations, provide at least two Business Days advance notice to Owner. In any event, notify Owner whenever any construction stakes or property monuments are lost or destroyed or require relocation because of necessary changes in grades or locations. Owner shall replace or repair construction stakes or property monuments at Contractor's expense.
- D. Perform brush clearing and traffic control, as necessary, in Owner's sole judgment.
- E. Illegible survey requests or requests for surveys without proper (at least three Business Days) notification, may result in delayed surveys. No extension of Contract Time will be allowed due to such delays.
- F. If Owner's survey crews are not available to perform the survey staking following proper notification, Contractor shall provide its own survey staking. Provide Owner with Contractor's survey staking information in writing within three Business Days after it becomes available to Contractor.

1.15 Geotechnical Data and Existing Conditions – (Not Used)

1.16 Protection of Existing Structures and Underground Facilities

- A. The Drawings may indicate existing above- and below-grade structures, drainage lines, storm drains, sewers, water lines, gas lines, electrical lines, hot water lines, and other similar items and underground facilities that are known to Owner. At least two Business Days, or as otherwise noted, prior to commencement of excavation, notify the owners of the underground facilities
- B. Where overhead service to a structure, known to receive service, does not exist, then underground service shall be assumed to exist.
- C. Attention is also directed to the existence of overhead power and telephone lines.
- D. Perform pot-holing per technical specifications section 02221 Trenching Backfilling and Compacting. For sensitive utilities or landmarks pot-holing may be required. This may be done on an area-by-area basis, but shall be accomplished at least 7 Days in advance of the date of construction within such area.
- E. Telemetry antennas: Ensure that the telemetry and voice communication antennas remain operational. Owner's telemetry system is critical to the function and operation of Owner's water supply and distribution system. Coordinate relocation of equipment related to the telemetry and voice communication systems with Owner. Notify Owner 3 Days prior to conducting any Work in the vicinity of the telemetry antenna.
- F. No attempt has been made to locate private utilities on private property such as sprinkler irrigation systems or electrical conduits. Contact the property owners prior to construction.
- G. In addition to reporting, if a utility is damaged, Contractor must take appropriate action as provided in Document 00 72 00 (General Conditions).
- H. Additional compensation or extension of time on account of utilities not indicated or otherwise brought to Contractor's attention including reasonable action taken to protect or repair damage shall be determined as provided in Document 00 72 00 (General Conditions).

1.17 Permits

- A. Permits, agreements, or written authorizations that are known by Owner to apply to this Project are listed below:
 - 1. Yuba County Encroachment Permit
 - 2. Cal/OSHA Permit. Obtain, as applicable, permit(s) as required by Cal/OSHA for the following:
 - a. Construction of trenches or excavations that are five feet or more in depth and into which a person is required to descend.
 - b. Construction or demolition of any building, structure, or scaffolding for falsework more than three stories high, or the equivalent height (36 feet).
 - c. Erection or dismantling of vertical shoring systems more than three stories high, or the equivalent height (36 feet).
 - 3. The local Cal/OSHA district office is located at:

Office:	Sacramento
Address:	1750 Howe Ave. Suite 430
	Sacramento, CA 95825
Telephone:	(916) 263-2800
Fax:	(916) 263-2798
Email:	DOSHSAC@dir.ca.gov
- B. All other permits that may be required, such as electrical, mechanical, fire prevention, irrigation, grading, slope protection, tree cutting, etc., have not been applied for and shall be obtained by Contractor. Applicable permit fees will be reimbursed to the extent specified in Document 00 72 00 (General Conditions).

1.18 Actual Damages for Permit Violations

- A. In addition to damages which are impracticable or extremely difficult to determine, for which liquidated damages will be assessed as described in Document 00 52 00 (Agreement) and Document 00 72 00 (General Conditions), Owner may incur actual damages, including fines imposed by any regulatory agency, resulting from violation of legal or regulatory requirements where the violations result from Contractor's activities.
- B. Contractor shall be liable for and shall pay Owner the amount of any actual losses in addition to liquidated damages or other remedies provided by the Contract Documents.
- C. The amount of liquidated damages provided in Document 00 52 00 (Agreement) and Document 00 72 00 (General Conditions) is not intended to include, nor does the amount include, any damages incurred by Owner for reasons other than those listed in that paragraph. Any money due or to become due to Contractor may be retained by Owner to cover both the liquidated and the actual damages described above and, should such money not be sufficient to cover such damages, Owner shall have the right to recover the balance from Contractor or its sureties.

PART 2 PRODUCTS

2.01 Products Ordered in Advance – Not Used

2.02 Owner-Furnished Products

- A. Owner-Furnished Products:
 - 1. Meter Boxes – Owner to furnish new meter boxes when existing meter boxes are damaged beyond reuse as determined by the District Inspector.
- B. Owner's Responsibilities:
 - 1. Arrange for and deliver Owner-reviewed Shop Drawings, Product Data, and Samples, to Contractor.
 - 2. Arrange and pay for delivery to Site.
 - 3. On delivery, inspect products jointly with Contractor.
 - 4. Submit claims for transportation damage and replace damaged, Defective, or deficient items.
 - 5. Arrange for manufacturers' warranties, inspections, and service.
- C. Contractor's Responsibilities:
 - 1. Review Owner-reviewed Shop Drawings, Product Data, and Samples.
 - 2. Receive and unload products at Site; inspect for completeness or damage jointly with Owner.
 - 3. Handle, store, install, and finish products.
 - 4. Repair or replace items damaged after receipt.
 - 5. Install into Project per Contract Documents.

PART 3 EXECUTION – NOT USED

END OF SECTION

DIVISION 1 GENERAL REQUIREMENTS

SECTION 01 20 00

MEASUREMENT AND PAYMENT

PART 1 GENERAL

1.01 Summary

- A. Section includes description of requirements and procedures for determining amount of Work performed and for obtaining payment for Work performed.

1.02 References

- A. California Public Contract Code
- B. Code of Civil Procedure
- C. Government Code
- D. Civil Code

1.03 Composition and Scope Of Contract Sum

A. Scope of Contract Sum

1. Contract Sum for performance of the Work under Contract Documents, or under any Bid item, allowance, or Alternate, shall include full compensation for all Work required under the Contract Documents, including without limitation, all labor, materials, taxes, transport, handling, storage, supervision, administration, and all other items necessary for the satisfactory completion of the Work, whether or not expressly specified or indicated, incidental work and unexpected expenses, and all terms, conditions, requirements and limitations set forth in the Contract Documents.
2. Contract Sum may be expressed as lump sum, unit price, GMP, allowance, or combination thereof. Contract Sum, whether lump sum, unit price or otherwise, shall be deemed to include all costs necessary to complete required Work, including Contractor overhead and profit, all costs (if any) for loss or damage arising from nature of Work or prosecution of the Work, and from action of elements.
3. Unless Contract Documents expressly provide otherwise, Contract Sum shall be deemed to include:
 - (a) Any and all costs arising from any unforeseen difficulties which may be encountered during, and all risks of any description connected with, prosecution of Work or any Work item (whether lump sum, unit price or otherwise) until acceptance by Owner;
 - (b) All expenses incurred due to suspension, or discontinuance of Work or any Work item (whether lump sum, unit price or otherwise) as provided in Contract Documents; and
 - (c) Escalation to allow for cost increases between time of Contract Award and completion of Work or any Work item (whether lump sum, unit price or otherwise).

B. Unit Price Items

1. Quantity of Work to be paid for under any item for which a unit price is fixed in Contract Documents shall be determined by Owner based on, so far as practicable, actual number of units satisfactorily completed, as determined by Owner and certified by Contractor, within prescribed or ordered limits, and no payment will be made for Work unsatisfactorily performed or done outside of limits.
2. Unit Prices shall apply to Work covered by unit prices so long as actual quantities performed on the Project are not less than 75 percent or greater than 125 percent of the estimated quantities bid or otherwise stated in the Contract Documents. If actual quantities

exceed these parameters, then the unit price shall be adjusted by an amount to reflect the Contractor's incremental cost differential resulting from increased or decreased economies of scale.

C. Lump Sum Items

1. When estimated quantity for specific portion of Work is not indicated and/or Work is designated as lump sum, payment will be on a lump sum basis for Work satisfactorily completed in accordance with Contract Documents.
2. Payment for lump sum Work, or items of Work subject to a lump sum (e.g. without limitation, change order work), shall be made on the basis of satisfactory completion of such Work or work item, earned in progressive stages in accordance with the Contract Documents, up to but not exceeding Contractor's percentage completion of the Work or item.
3. Lump sum items shall be paid based upon the approved Schedule of Values, which shall be used to measure progressive payments based upon satisfactory progress towards completion of the item.

D. Allowance Items

1. Allowances. Allowance Work will be authorized by Owner in writing, following change order procedures to determine cost, supporting documentation and authorization to proceed. Unused allowance amounts at Contract completion shall reduce the Contract Sum accordingly.
2. Allowance items (if any) are specified in Section 01 11 00 (Summary of Work) or Section 01 21 00 (Allowances).

1.04 Payment Procedures

A. Work Breakdown Structure/Schedule of Values

1. Within time period specified in Document 00 72 00 (General Conditions), but in any event prior to Contractor's first Application for Payment, Contractor shall submit a detailed breakdown of its Bid by scheduled Work items and/or activities, including coordination responsibilities and Project Record Documents responsibilities. Where more than one Subcontractor comprises the work of a Work item or activity, the Schedule of Values shall show a separate line item for each subcontract. Contractor shall furnish such breakdown of the total Contract Sum by assigning dollar values (cost estimates) to each applicable Progress Schedule network activity, which cumulative sum equals the total Contract Sum. This breakdown may be referred to as the Schedule of Values (**SOV**), Work Breakdown Structure (**WBS**) or both.
2. Contractor's overhead, profit, insurance, cost of bonds (except to the extent expressly identified in a Bid item) and/or other financing, as well as "general conditions costs," (e.g., Site cleanup and maintenance, temporary roads and access, off-Site access roads, temporary power and lighting, security, and the like), shall be prorated through all activities so that the sum of all the Schedule of Values line items equals Contractor's total Contract Sum, less any allowances designated by Owner. Scheduling, record documents and quality assurance control shall be separate line items.
3. Owner will review the breakdown in conjunction with the Progress Schedule to ensure that the dollar amounts of this Schedule of Values are, in fact, reasonable cost allocations for the Work items listed. Upon favorable review by Owner, Owner will accept this Schedule of Values for use. Owner shall be the sole judge of fair market cost allocations.
4. Owner will reject any attempt to increase the cost of early activities, i.e., "front loading," resulting in a complete reallocation of moneys until such "front loading" is corrected. Repeated attempts at "front loading" may result in suspension or termination of the Work for default, or refusal to process progress payments until such time as the Schedule of Values is acceptable to Owner.

B. Contractor's Requests for Progress Payments

1. If requested by Contractor, progress payments will be made monthly, under the following conditions:
2. On or before the 25th Day of each month, Contractor shall submit to Owner five copies of an Application for Payment for the cost of the Work put in place during the period from the last Day of the previous month to the end of the current month, along with one copy of an updated Progress Schedule. Such Applications for Payment shall be for the expected total value of activities completed or partially completed, based upon Schedule of Values prices (or Bid item prices if unit price) of all labor and materials incorporated in the Work up until midnight of the last Day of that one month period, less the aggregate of previous payments. Accumulated retainage shall be shown as separate item in payment summary. Owner and Contractor will reconcile any differences in the field, based on the reconciled monthly report sheets. If Contractor is late submitting its Application for Payment, that Application may be processed at any time during the succeeding one-month period, resulting in processing of Contractor's Application for Payment being delayed for more than a Day for Day basis.
3. Except as otherwise provided in a labor compliance program applicable to the Work (if any) or as otherwise required by Owner, concurrently with each Application for Payment, Contractor shall submit to Owner Contractor's and its Subcontractors' certified payroll records required to be maintained pursuant to Labor Code Section 1776 for all labor performed during pay periods ending during the period covered by the Application for Payment.
4. No progress payment will be processed prior to Owner receiving all requested, acceptable schedule update information and certified payrolls, and in Owner's sole and absolute discretion, Owner may deny the entire Application for Payment for noncompliance.
5. Each Application for Payment shall list each Change Order and Construction Change Directive (**CCD**) executed prior to date of submission, including the Change Order/CCD Number, and a description of the Work activities, consistent with the descriptions of original Work activities. Contractor shall submit a monthly Change Order/CCD status log to Owner.
6. If Owner requires substantiating data, Contractor shall submit information requested by Owner, with cover letter identifying Project, Application for Payment number and date, and detailed list of enclosures. Contractor shall submit one copy of substantiating data and cover letter for each copy of Application for Payment submitted.
7. If Contractor fails or refuses to participate in monthly Work reconciliations or other construction progress evaluation with Owner, Contractor shall not receive current payment until Contractor has participated fully in providing construction progress information and schedule update information to Owner.

C. Owner's Review of Progress Payment Applications

1. Owner will review Contractor's Application for Payment following receipt and during the Progress Schedule and Billing Meeting. If adjustments need to be made to percent of completion of each activity, Owner will make appropriate notations and return to Contractor. Contractor shall revise and resubmit. All parties shall update percentage of completion values in the same manner, i.e., express value of an accumulated percentage of completion to date.
2. If Owner determines that portions of the Application for Payment are not proper or not due under the Contract Documents, then Owner may approve the other portions of the Application for Payment, and in the case of disputed items or Defective Work not remedied, may withhold up to 150 percent of the disputed amount from the progress payment.
3. Pursuant to Public Contract Code Section 20104.50, if Owner fails to make any progress payment within 30 Days after receipt of an undisputed and properly submitted Application for Payment from Contractor, Owner shall pay interest to the Contractor equivalent to the legal rates set forth in Code of Civil Procedure Section 685.010 (a). The 30-Day period shall be reduced by the number of Days by which Owner exceeds the seven-Day return requirement set forth herein.
4. As soon as practicable after approval of each Application for Payment for progress payments, Owner will pay to Contractor in manner provided by law, an amount equal to 95 percent of the amounts otherwise due as provided in Contract Documents, or a lesser

amount if so provided in Contract Documents and by law, provided that payments may at any time be withheld if, in judgment of Owner, Work is not proceeding in accordance with Contract, or Contractor is not complying with requirements of Contract, or to comply with stop notices or to offset liquidated damages accruing or expected. In Owner's sole discretion, if Contractor has failed to comply with either its Progress Schedule update or project record documents requirements, Owner may retain an additional five percent (5%) of any earned amounts until such requirements are satisfied.

5. Before any progress payment or final payment is due or made, Contractor shall submit satisfactory evidence that Contractor is not delinquent in payments to employees, Subcontractors, suppliers, or creditors for labor and materials incorporated into Work. This specifically includes, without limitation, conditional lien release forms for the current progress payment and unconditional release forms for past progress payments. This also includes copies of certified payroll from Contractor and subcontractors for the current payment period.

D. Payment for Material and Equipment Not Yet Incorporated Into the Work

1. No payment shall be made for materials or equipment not yet incorporated into the Work, except as specified elsewhere in the Contract Documents or as may be agreed to by Owner in its sole discretion. Where Contractor requests payment on the basis of materials and equipment not incorporated in the Work, Contractor must satisfy the following conditions:
 - a. The materials and/or equipment shall be delivered and suitably stored at the Site or at another local location agreed to in writing, for example, a mutually acceptable bonded and insured warehouse.
 - b. Full title to the materials and/or equipment shall vest in Owner at the time of delivery to the Site, warehouse or other storage location. Obtain a negotiable warehouse receipt, endorsed over to Owner for materials and/or equipment stored in an off-site warehouse. No payment will be made until such endorsed receipts are delivered to Owner.
 - c. Stockpiled materials and/or equipment shall be available for Owner inspection, but Owner shall have no obligation to inspect them and its inspection or failure to inspect shall not relieve Contractor of any obligations under the Contract Documents. Materials and/or equipment shall be segregated and labeled or tagged to identify these specific Contract Documents.
 - d. After delivery of materials and/or equipment, if any inherent or acquired defects are discovered, defective materials and/or equipment shall be removed and replaced with suitable materials and/or equipment at Contractor's expense.
 - e. At Contractor's expense, insure the materials and/or equipment against theft, fire, flood, vandalism, and malicious mischief, as well as any other coverages required under the Contract Documents.
 - f. Contractor's Application for Payment shall be accompanied by a bill of sale, invoice or other documentation warranting that Owner has received the materials and equipment free and clear of all liens and evidence that the materials and equipment are covered by appropriate property insurance and other arrangements to protect Owner interest therein, all of which must be satisfactory to Owner. This documentation shall include, without limitation, conditional releases of mechanics' liens and stop notices from all those providing materials and equipment as to which the Application for Payment relates, as well as unconditional releases of the same from the same as to the previous Application for Payment for which they have not already been provided. Amounts previously paid for materials and equipment prior to incorporation into the Work shall be deducted from amounts otherwise due Contractor as they are incorporated.

1.05 Final Payment

A. Final Payment

1. As soon as practicable after all required Work is completed in accordance with Contract Documents, including punchlist, testing, record documents and Contractor maintenance after Final Acceptance, Contractor shall submit its Application for Final Payment.
2. Provided Contractor has met all conditions required for Final payment, Owner will pay to Contractor, in manner provided by law, unpaid balance of Contract Sum of Work (including, without limitation, retentions), or whole Contract Sum of Work if no progress payment has been made, determined in accordance with terms of Contract Documents, less sums as may be lawfully retained under any provisions of Contract Documents or by law.

B. Final Accounting

1. Prior progress payments and change orders shall be subject to audit and correction in the final payment.
2. Contractor and each assignee under an assignment in effect at time of final payment shall execute and deliver at time of final payment, and as a condition precedent to final payment, Document 00 65 30 (Agreement and Release of Claims).

1.06 Substitution of Securities

- A. Public Contract Code Section 22300. In accordance with the provisions of Public Contract Code Section 22300, substitution of securities for any moneys withheld under Contract Documents to ensure performance is permitted as provided under Document 00 62 90.

1.07 Basis And Effect Of Payment

- A. Payment will be made by Owner, based on Owner observations at the Site and the data comprising the Application for Payment. Payment will not be a representation that Owner has:
1. Made exhaustive or continuous on-Site inspections to check the quality or quantity of Work;
 2. Reviewed construction means, methods, techniques, sequences, or procedures;
 3. Reviewed copies of requisitions received from Subcontractors and material suppliers and other data requested by Owner to substantiate Contractor's right to payment; or
 4. Made examination to ascertain how or for what purpose Contractor has used money previously paid on account of the Contract Sum.
- B. Owner does not expressly, or by implication, agree, warrant, or represent in any manner, that actual amount of Work will correspond with amount shown or estimated and reserves right to increase or decrease amount of any class or portion of Work, to leave out entire Work Item or Items, or to add work not originally included in Bid or Contract Documents, when in its judgment such change is in best interest of Owner. No change in Work shall be considered a waiver of any other condition of Contract Documents. No claim shall be made for anticipated profit, for loss of profit, for damages, or for extra payment whatever, except as otherwise expressly provided for in Contract Documents, because of any differences between the amount of Work actually done and estimated amount as set forth herein, or for elimination of Work Items.

PART 2 PRODUCTS – NOT USED

PART 3 EXECUTION – NOT USED

END OF SECTION

DIVISION 1 GENERAL REQUIREMENTS

SECTION 01 26 00

MODIFICATION PROCEDURES

PART 1 GENERAL

1.01 Summary

- A. Section includes requirements that supplement the paragraphs of Document 00 72 00 (General Conditions).
- B. Section includes procedures to satisfy Owner's Right of Separate Construction as listed in 00 72 00 Section 7.06A which may reduce the Contractor's obligation to complete contracted work up to an amount equal to 25% of the total bid amount.
- C. Description of procedures for modifying the Contract Documents and determining costs for changes in Contract Sum or Contract Time.

1.02 Procedures For Contractor Initiated Change Order

- A. Contractor-Initiated Change Proposal Request (CPR) and Procedures
 - 1. Contractor may initiate changes by submitting a Change Proposal Request (**CPR**).
 - 2. Whenever Contractor elects or is entitled to submit a CPR, Contractor shall prepare and submit to Owner for consideration a CPR using the Cost Proposal Form attached to this Section 01 26 00 or otherwise included in this Project Manual. All CPR's must contain a complete breakdown of costs of credits, deducts and extras; itemizing labor, materials, equipment, markup, bonds, insurance and taxes; and any requested changes to Contract Time. All Subcontractor Work shall be so indicated. Individual entries on the CPR form shall include applicable Schedule of Values code, with all amounts determined as provided herein. After receipt of a CPR with a detailed breakdown, Owner will act promptly thereon.
 - 3. If Owner accepts a CPR, Owner will prepare a Change Order for Owner and Contractor signatures.
 - 4. If CPR is not acceptable to Owner because it does not agree with Contractor's proposed cost and/or time, Owner will provide comments thereto. Contractor will then, within seven Days (except as otherwise provided herein), submit a revised CPR.
 - 5. When necessity to proceed with a change does not allow Owner sufficient time to conduct a proper check of a CPR (or revised CPR), Owner may issue a Change Directive (**CD**) as provided below.
- B. Contractor-Initiated Request for Information (RFI) Procedures, Requirements and Limitations
 - 1. Contractor may submit RFI's for clarifications in Owner-prepared Contract Documents, which may result in the Contractor submitting a CPR.
 - 2. Whenever Contractor requires information regarding the Project or Owner-prepared Contract Documents, or receives a request for such information from a Subcontractor, Contractor may prepare and deliver an RFI to Owner. Contractor shall use RFI format provided on approval by Owner. Contractor shall not issue an RFI to Owner solely to clarify Contractor-prepared Construction Documents. Contractor must submit time critical RFIs at least 30 Days before scheduled start date of the affected Work activity. Contractor shall reference each RFI to an activity of Progress Schedule and shall note time criticality of the RFI, indicating time within which a response is required. Contractor's failure to reference RFI to an activity on the Progress Schedule and note time criticality on the RFI shall

constitute Contractor's waiver of any claim for time delay or interruption to the Work resulting from any delay in responding to the RFI.

3. Contractor shall be responsible for its costs to implement and administer RFIs throughout the Contract duration. Regardless of the number of RFIs submitted, Contractor shall not be entitled to additional compensation for the effort required to submit the RFIs. Contractor shall be responsible for Owner's administrative costs for answering RFIs where the answer could reasonably be found by reviewing the Contract Documents, as determined by Owner; at Owner discretion, such costs may be deducted from progress payments or final payment.
4. Owner will respond within ten Days from receipt of RFI with a written response to Contractor. Contractor shall distribute response to all appropriate Subcontractors.
5. If Contractor is satisfied with the response and does not request a change in Contract Sum or Contract Time, then the response shall be executed without a change.
6. If Contractor believes the response is incomplete, Contractor shall issue another RFI (with the same RFI number with the letter "A" indicating it is a follow-up RFI) to Owner clarifying original RFI. Additionally, Owner may return RFI requesting additional information should original RFI be inadequate in describing condition.

C. Time Requirements

1. If Contractor believes that an Owner response to an RFI, submittal or other Owner direction, results in change in Contract Sum or Contract Time, Contractor shall notify Owner with the issuance of a preliminary CPR within ten Days after receiving Owner's response or direction, and in no event after starting the disputed work or later than the time allowed under Article 12 of Document 00 72 00 (General Conditions). If Contractor also requests a time extension, or has issued a notice of delay or otherwise requests a time extension with a CPR, then Contractor shall submit the TIE required in these Contract Documents, including Section 01 32 00 (Progress Schedules and Reports), concurrently with the CPR and in no event later than ten Days after providing the notice of delay.
2. If Contractor requires more time to accurately identify the required changes to the Contract Sum or Contract Time, Contractor may submit an updated and final CPR and TIE within 14 Days of submitting the preliminary CPR.
3. If Owner agrees with Contractor's CPR and/or TIE, then Owner will prepare a Change Order for Owner and Contractor signatures. If Owner disagrees with Contractor, then Contractor may give notice of potential claim as provided in Article 12 of Document 00 72 00 (General Conditions), and proceed thereunder.
4. Contractor must submit all CPR's (preliminary and final), notices of potential claim, Claims, and TIE's within the required time periods. Any failure to do so waives Contractor's right to submit a CPR or file a Claim.

D. Cost Estimate Information

1. Contractor and subcontractors shall, upon Owner's request, permit inspection of the original unaltered cost estimates, subcontract agreements, purchase orders relating to the change, and documents substantiating all costs associated with its CPR or Claims arising from changes in the Work.

1.03 Procedures for Owner-Initiated Change Orders

A. Owner Initiated Change Directives (CD)

1. Owner may, by Change Directive (**CD**) or initially by Instruction Bulletin or by following the procedures for disputed work herein, order changes in the Work within the general scope of the Contract consisting of additions, deletions, or other revisions, with or without adjustment to Contract Sum or Contract Time.
2. If at any time Owner believes in good faith that a timely Change Order will not be agreed upon using the foregoing procedures, or at any other time, Owner may issue a CD with its recommended cost and/or time adjustment (if any). Upon receipt of CD, Contractor shall promptly proceed with the change of Work involved and respond to Owner within ten Days.

3. Contractor's response must be any one of following:
 - (a) Return CD signed, thereby accepting Owner response, including adjustment to time and cost (if any).
 - (b) Submit a (revised if applicable) Cost Proposal with supporting documentation (if applicable, reference original Cost Proposal number followed by letter A, B, etc. for each revision), if Owner so requests.
 - (c) Give notice of intent to submit a claim as described in Article 12 of Document 00 72 00 (General Conditions), and submit its claim as provided therein.
 4. If CPR or the CD provides for an adjustment to any Contract Sum, the adjustment shall be based on one of the following methods:
 - (a) Mutual acceptance of a lump sum properly itemized and supported by sufficient substantiating data to permit evaluation.
 - (b) Contractor to proceed on cost reimbursable (force account) basis while negotiating towards a firm price.
 - (c) Cost to be determined in a manner agreed.
 5. Change Directive signed by Contractor indicates the agreement of Contractor therewith, including adjustment in Contract Sum or the method for determining them. Such agreement shall be effective immediately and shall be finalized as a Change Order. Where Owner authorizes CD work on a time and materials basis up to a maximum amount, then Contractor shall promptly advise Owner upon reaching 75% of such maximum amount, otherwise Contractor shall accept fully the risk of completing the CD work without exceeding such maximum amount.
 6. If Contractor does not respond promptly or disagrees with the method for adjustment (or non-adjustment) in the Contract Sum, the method and the adjustment shall be determined by Owner on the basis of the Contract Documents and the reasonable expenditures and savings of those performing the Work attributable to the change. If the parties still do not agree on the proper adjustment due to a Change Directive, Contractor may file a Claim per Article 12 of Document 00 72 00 (General Conditions) and/or Owner may direct the changed work through a unilateral change order. Contractor shall keep and present an itemized accounting in a manner consistent with the SOV, together with appropriate supporting data. Unless otherwise provided in the Contract Documents, costs for the purposes of this paragraph shall be limited to those provided herein.
 7. Pending final determination of cost to Owner, Contractor may include amounts not in dispute in its Applications for Payment. The amount of credit to be allowed by Contractor to Owner for a deletion or change which results in a net decrease in the Contract Sum shall be actual net cost as confirmed by Owner. When both additions and credits covering related Work or substitutions are involved in a change, the allowance for Markup shall be figured on the basis of net increase, if any, with respect to that change.
- B. Owner Initiated Change Order (CO) Or Request For Proposal (RFP)
1. Owner may initiate changes in the Work or Contract Time by issuing a Request for Proposal (**RFP**) or Change Order (**CO**) to Contractor.
 2. Owner may issue an RFP to Contractor. Any RFP will detail all proposed changes in the Work and request a quotation of changes in Contract Sum and Contract Time from Contractor.
 3. In response to an RFP, Contractor shall furnish a Change Proposal Request (**CPR**) within 21 Business Days of Owner's RFP. Upon approval of CPR, Owner may issue a Change Directive directing Contractor to proceed with extra Work.
 4. If the parties agree on price and time for the work, the Owner will issue a Contact Change Order. If the parties do not agree on the price or time for a CPR, Owner may either issue a CD or decide the issue per Article 12 of Document 00 72 00 (General Conditions). Contractor shall perform the changed Work notwithstanding any claims or disagreements of any nature.

1.04 Procedures that Apply to Contractor- and Owner-Initiated Change Orders

A. Adjustment of Schedules to Reflect Change Orders or CDs

1. Contractor shall revise Schedule of Values and Application for Payment forms to record each authorized Change Order or CD as a separate line item and adjust the Contract Sum as shown thereon prior to the next monthly pay period.
2. Contractor shall revise the Progress Schedules prior to the next monthly pay period, to reflect CO or CD.
3. Contractor shall enter changes in Project Record Documents prior to the next monthly pay period.

B. Required Documentation for Adjustments to Contract Amounts

1. For all changes and cost adjustments requested, Contractor shall provide documentation of change in Contract Amounts asserted, with sufficient data to allow evaluation of the proposal.
2. In all requests for compensation, cost proposals, estimates, claims and any other calculation of costs made under the Contract Documents, Contractor shall breakout and quantify costs of labor, equipment and materials identified herein, for Contractor and subcontractors of any tier.
3. Contractor shall, on request, provide additional data to support computations for:
 - (a) Quantities of products, materials, labor and equipment.
 - (b) Taxes, insurance, and bonds.
 - (c) Justification for any change in Contract Time and new Progress Schedule showing revision due, if any.
 - (d) Credit for deletions from Contract, similarly documented.
4. Contractor shall support each claim or computation for additional cost, with additional information including:
 - (a) Origin and date of claim or request for additional compensation.
 - (b) Dates and times Work was performed and by whom.
 - (c) Time records and wage rates paid.
 - (d) Invoices and receipts for products, materials, equipment and subcontracts, similarly documented.
 - (e) Credit for deletions from Contract, similarly documented.

C. Responses and Disputes

1. For all responses for which the Contract Documents do not provide a specific time period, recipients shall respond within a reasonable time.
2. For all disputes arising from the procedures herein, Contractor shall follow Article 12 of Document 00 72 00 (General Conditions).

1.05 Cost Determination for Changes in Contract Amounts

A. Calculation of Total Cost of Extra Work

1. Total cost of changed Work, extra Work or of Work omitted shall be the sum of three components defined immediately below as: Component 1 (Direct Cost of Construction or Direct Costs); Component 2 (Markup); and, Component 3 (Bonds, Insurance, Taxes).
2. **Component 1:** Direct Costs of labor, equipment and materials, is calculated based upon actually incurred (or omitted) labor costs, equipment rental costs, and material costs, as defined herein;
3. **Component 2:** Markup on such actually incurred Direct Costs, is applied in the percentages identified below; and
4. **Component 3:** Actual additional costs for any additionally required bonds, insurance, and/or taxes by Contractor, Subcontractors, or other forces, defined herein, is calculated without markup.
5. All amounts payable to Subcontractors under Components 1, 2, and 3: must be earned under the terms of the applicable Subcontracts; must be properly requested, documented

and permitted under the terms of the applicable subcontract(s) and Contract Documents; and shall be payable only if changed Work complies with terms of Contract Documents.

1.06 Measurement Of Direct Cost Of Construction (Cost Component 1)

A. Composition of Component 1 (Direct Cost of Construction)

1. Component 1 has three subcomponents, also referred to as labor, equipment, and materials (**LEM**):
 - (a) Labor (**Component 1A**)
 - (b) Equipment (**Component 1B**)
 - (c) Materials (**Component 1C**)

B. Measurement of Cost of Labor (Component 1A)

1. Cost of Labor shall be calculated as: Cost of labor for workers (including forepersons when authorized by Owner) used in actual and direct performance of the subject work, whether employer is Contractor, Subcontractor or other forces, in the sum of the following:
 - (a) Actual Wages: Actual wages paid shall include any employer payments to or on behalf of workers for health and welfare, pension, vacation, and similar purposes.
 - (b) Labor surcharge: Payments imposed by local, county, state, and federal laws and ordinances, and other payments made to, or on behalf of, workers, other than actual wages as defined, such as worker's compensation insurance. Such labor surcharge shall not exceed generally accepted standards in the State for labor rates in effect on date upon which extra Work is accomplished.
 - (c) Cost of labor shall include no other costs, fees or charges.
2. Labor cost for operators of equipment owned and operated by Contractor or any Subcontractor, shall be no more than rates of such labor established by collective bargaining agreements for type of worker and location of Work, whether or not owner-operator (i.e., Contractor or Subcontractor) is actually covered by such an agreement.
3. Cost of labor shall be recorded and documented in certified payroll records, maintained in the form customary and/or required in the State, and delivered to Owner weekly.

C. Measurement of Cost of Equipment (Component 1B)

1. Measurement of Component 1B (Cost of Equipment). Cost of Equipment shall be calculated as: Cost of equipment used in actual and direct performance of the subject work, whether by Contractor, Subcontractor or other forces. Cost of Equipment shall be calculated as herein described.
2. For rented equipment, cost will be based on actual rental invoices, appropriate for the use and duration of the work. Equipment used on extra Work shall be of proper size and type. If, however, equipment of unwarranted size or type and cost is used, cost of use of equipment shall be calculated at rental rate for equipment of proper size and type, as determined by Owner.
3. Equipment rental cost for Contractor or Subcontractor-owned equipment, shall be determined by reference to, and not in excess of, the generally accepted standards in the State for equipment rental rates in effect on date upon which extra Work is accomplished. If there is no applicable rate for an item of equipment, then payment shall be made for Contractor or Subcontractor-owned equipment at rental rate listed in the most recent edition of the Caltrans Standard Schedules and Specifications, and absent a rental rate therein, then the Association of Equipment Distributors (**AED**) book.
4. In all cases, rental rates paid shall be deemed to cover cost of fuel, oil, lubrication, supplies, small tools, necessary attachments, repairs and maintenance of any kind, depreciation, storage, insurance, and all incidentals.
5. Unless otherwise specified, manufacturer's ratings, and manufacturer-approved modifications, shall be used to classify equipment for determination of applicable rental rates. Individual pieces of equipment or tools not listed in said publication and having a replacement value of \$100 or less, whether or not consumed by use, shall be considered

- to be small tools and no payment will be made therefore as payment is included in payment for labor. Rental time will not be allowed while equipment is inoperative due to breakdowns.
6. For equipment on Site, rental time to be paid for equipment shall be time equipment is in operation on extra Work being performed or on standby as approved by Owner. The following shall be used in computing rental time of equipment:
 - (a) When hourly rates are listed, less than 30 minutes of operation shall be considered to be ½ hour of operation.
 - (b) When daily rates are listed, less than four hours of operation shall be considered to be ½ Day of operation.
 - (c) Rates shall correspond to actual rates paid by Contractor, i.e., if Contractor pays lower weekly or monthly rates, then same shall be charged to Owner.
 7. For equipment that must be brought to Site to be used exclusively on extra Work, cost of transporting equipment to Site and its return to its original location shall be determined as follows:
 - (a) Owner will pay for costs of loading and unloading equipment.
 - (b) Cost of transporting equipment in low bed trailers shall not exceed hourly rates charged by established haulers.
 - (c) Cost of transporting equipment shall not exceed applicable minimum established rates of California Public Utilities Commission or appropriate State Dept. of Transportation.
 - (d) Owner will not make any payment for transporting and loading and unloading equipment if equipment is used on Work in any other way than upon extra Work.
 - (e) Rental period may begin at time equipment is unloaded at Site of extra Work and terminate at end of the performance of the extra Work or Day on which Owner directs Contractor to discontinue use of equipment, whichever first occurs. Excluding Saturdays, Sundays, and Owner legal holidays, unless equipment is used to perform extra Work on such Days, rental time to be paid per Day shall be four hours for zero hours of operation, six hours for four hours of operation and eight hours for eight hours of operation, time being prorated between these parameters. Hours to be paid for equipment that is operated less than eight hours due to breakdowns, shall not exceed eight less number of hours equipment is inoperative due to breakdowns.
 8. Employee vehicles are not part of Component 1A, rather, are included within Component 2 (Markup).
 9. Cost of Equipment shall include no other costs, fees or charges.
- D. Measurement of Cost of Material (Component 1C)
1. Cost of Material shall be calculated as herein described. Cost of such materials will be cost to purchaser (Contractor, Subcontractor or other forces) from supplier thereof, except as the following are applicable:
 2. If cash or trade discount by actual supplier is offered or available to purchaser, it shall be credited to Owner notwithstanding fact that such discount may not have been taken.
 3. For materials salvaged upon completion of Work, salvage value of materials shall be deducted from cost, less discounts, of materials.
 4. If cost of a material is, in opinion of Owner, excessive, then cost of material shall be deemed to be lowest current wholesale price at which material is available in quantities concerned delivered to Site, less any discounts as provided in this Paragraph.
 5. Cost of Material shall include no other costs, fees or charges.
- 1.07 Measurement and Payment of Markup (Cost Component 2)**
- A. Markup Percentages for Changed Work (Component 2)
1. Markup on Direct Cost of labor, materials and equipment for extra Work pursuant to the Contract Documents performed by Contractor shall be 15%.

2. When extra Work is performed by Subcontractors, regardless of the number of tiers, total Markup on Component 1 Direct Costs shall be 20%. Contractor and its Subcontractors shall divide the 20% as they may agree.
3. Under no circumstances shall the total Markup on any extra Work exceed 20%, stated as a percent of the Direct Cost of labor, equipment and materials. This limitation shall apply regardless of the actual number of subcontract tiers.
4. On proposals covering both increases and decreases in Contract Sum, Markup shall be allowed on the net increase only as determined above. When the net difference is a deletion, no percentage for Markup shall be allowed, but rather an appropriate percentage deduction shall be issued in the amount of the net difference.

B. Measurement and Payment of Markup (Component 2)

1. Markup (Component 2) provides complete compensation to Contractor and all Subcontractors for:
 - (a) All Contractor and Subcontractor profit;
 - (b) All Contractor and Subcontractor home-office overhead;
 - (c) All Contractor and Subcontractor assumption of risk assigned to Contractor under the Contract Documents;
 - (d) Subject to the qualifications below regarding self-performed work, all General Conditions and General Requirements of Contractor (and, if applicable, Subcontractors).
2. Profit. Compensation for profit included within Component 2 (Markup), includes without limitation: Fees of all types, nature and description; and Profit and margins of all types, nature and description.
3. Home Office Expenses. Compensation for home office expenses included within Component 2 (Markup), includes without limitation: Salaries and other compensation of any type of Contractor's and Subcontractor's personnel (management, administrative and clerical), and all direct and indirect operating, travel, payroll, safety, storage, quality control, maintenance and overhead costs of any nature whatsoever, incurred by Contractor and Subcontractors at any location other than the Project specific site office, including without limitation, Contractor's principal or branch offices; insurance premiums other than those for Project specific insurance directed by the Owner in a change order; all hardware, software, supplies and support personnel necessary or convenient for Contractor's capture, documentation and maintenance of its costs and cost accounting data and cost accounting and control systems and work progress reporting.
4. Assumption of Risk. Compensation for Contractor's and Subcontractor's assumption of risk under the Contract Documents, included within Component 2 (Markup), includes, without limitation, loss, cost, damage, expense or liability resulting directly or indirectly from any of the following causes (**unallowable costs**), for Contractor and Subcontractors of any tier: noncompliance with the Contract Documents, fault or negligence, defective or non-conforming Work, by Contractor or any Subcontractor or Vendor of any tier or anyone directly or indirectly employed by any of them, or for whose acts or omissions any of them are responsible or liable at law or under the Contract Documents; cost overruns of any type; costs in excess of any lump sum, not to exceed amount or GMP; costs resulting from bid or "buy out" errors, unallocated scope, or incomplete transfer of scope or contract terms to Subcontractors; any costs incurred by Contractor relating to a Change in the Work without a Change Order or Change Directive in accordance with the Contract Documents; costs for work or materials for which no price is fixed in the Contract Documents, unless it is expressly specified that such work or material is to be paid for as extra work.
5. General Conditions and Division 1 General Requirements. Compensation for Contractor's (and, if applicable Subcontractors') General Conditions and General Requirements Costs included within Component 2 (Markup) includes compensation for: Contractor's direct costs, without overhead or profit, for salaries and related forms of compensation and employer's costs for labor and personnel costs, of Contractor's employees and subconsultant's employees (if any), while and only to the extent they are performing Work at the Project Site, and all "General Requirements Costs" below. Personnel and Work

compensated by this Component include, without limitation: All required Project management responsibilities; all on-site services; monthly reporting and scheduling; routine field inspection of Work; general superintendence; general administration and preparation of cost proposals, schedule analysis, change orders and other supporting documentation as necessary; salaries of project superintendent, project engineers, project managers, safety manager, other manager, timekeeper, and secretaries; all cost estimates and updates thereto; development, validation and updates to the project schedule; surveying; and estimating. General Requirements Costs included within Component 2 (Markup) include, without limitation: all scheduling hardware, software, licenses, equipment, materials and supplies; purchase, lease or rental, build out, procurement, supporting equipment and maintenance of temporary on-Site facilities, Project field and office trailers and other temporary facilities, office equipment and supporting utilities; platforms, fencing, cleanup and jobsite security; temporary roads, parking areas, temporary security or safety fencing and barricades, etc.; all Contractor's motor vehicles used by any Contractor's personnel, and all costs thereof; all health and safety requirements, required by law or Owner procedures; all surveying; all protection of Work; handling and disposal fees; final cleanup; repair or maintenance; other incidental Work; all items, activities and function similar to any of those described above; all travel, entertainment, lodging, board and the like.

6. Personnel compensated by the Markup Component do not include workers of foreman level or below in the case of self-performed work; rather, such personnel shall be treated as a Direct Cost of Construction. Costs compensated by Component 2 (Markup) do not include temporary measures specifically required by the changed work, not otherwise required or ongoing in the prosecution of the Work, that commence specifically to support the changed work and conclude with the completion of the changed work. Such costs shall be treated as Direct Costs of Construction. Examples of General Requirements costs that this component may not cover are the following: temporary barricades or fencing of specific areas required specifically for the changed work; cranes required specifically for the changed work; and extra security required specifically for the changed work.

1.08 Measurement and Payment of Bonds, Insurance, Taxes (Component 3)

A. Measurement of Bonds, Insurance, Taxes (Component 3)

1. Component 3 (Bonds, Insurance, Taxes) consists of the cost of bonds, insurance and taxes, also referred to as **BIT**. All State sales and use taxes, applicable County and applicable City sales taxes, shall be included. Federal and Excise tax shall not be included.
2. There is no markup on BIT.

1.09 Effect Of Payment

A. Change Order Compensation is All Inclusive

1. Except as provided expressly below regarding changes that extend the Contract Time, payment of calculated cost of extra work constitutes full and complete compensation for costs or expense arising from the extra Work, and is intended to be all inclusive.
2. Payment for Direct Cost of Construction (Component 1 or LEM) is intended to be all-inclusive. Any costs or risks not delineated within cost of labor, equipment or materials herein, shall be deemed to be within the costs and risks encompassed by the applicable Markups and unallowable in any separate amount.
3. Payment of Markup (Component 2) is intended to be all-inclusive. Contractor waives claims for any further or different payment of cost and risk items delineated herein, other than the allowable percentage markup on costs set forth in the Contract Documents; such separate, further or different cost or risk items shall be unallowable, waived and liquidated within the allowable percentage markup.
4. Contractor shall recover no other costs or markups on extra work of any type, nature or description.

B. Exception for Changes Extending Contract Time

1. Where a change in the Work extends the Contract Time, Contractor may request and recover additional, actual direct LEM costs, provided Contractor can demonstrate such additional costs are (i) actually incurred performing the Work, (ii) not compensated by Component 2 (Markup), and (iii) directly result from the extended Contract Time. Contractor shall make such request and provide such documentation following all required procedures, documentation and time requirements in the Contract Documents, and subject to all contract limitations of liability. Contractor may not seek or recover such costs using formulas (e.g., Eichleay).

C. Limits of Liability/Accord and Satisfaction

1. The foregoing limits of compensation apply in all cases of claims for changed Work, whether calculating Change Proposal Requests, Change Orders or CDs, or calculating claims and/or damages of all types, and applies even in the event of fault, negligence, strict liability, or tort claims of all kinds, including strict liability or negligence. Contractor may recover no other costs arising out of or connected with the performance of extra Work, of any nature.
2. Under no circumstances may Contractor claim or recover special, incidental or consequential damages against Owner, its representatives or agents, whether arising from breach of contract, negligence, strict liability or other tort or legal theory, unless specifically and expressly authorized in the Contract Documents.
3. No change in Work shall be considered a waiver of any other condition of Contract Documents. No claim shall be made for anticipated profit, for loss of profit, for damages, or for extra payment whatever, except as expressly provided for in Contract Documents.
4. Accord and Satisfaction: Every Change Order and accepted CD shall constitute a full accord and satisfaction, and release, of all Contractor (and if applicable, Subcontractors) claims for additional time, money or other relief arising from or relating to the subject matter of the change including, without limitation, impacts of all types, cumulative impacts, inefficiency, overtime, delay and any other type of claim. Contractor may elect to reserve its rights to disputed claims arising from or relating to the changed Work at the time it signs a Change Order or approves a CD, but must do so expressly in a writing delivered concurrently with the executed Change Order or approved CD, and must also submit a Claim for the reserved disputed items pursuant to Article 12 of Document 00 72 00 (General Conditions) no later than 30 Days after Contractor's first written notice of its intent to reserve rights. Execution of any Change Order or CD shall constitute Contractor's representation of its agreement with this provision.

1.10 Miscellaneous Requirements

A. Owner-Furnished Materials

1. Owner reserves right to furnish materials as it deems advisable, and Contractor shall have no claims for costs and Markup on such materials.

B. Records and Certification

1. All charges shall be recorded daily and summarized in Change Proposal Request form attached hereto. Contractor or authorized representative shall complete and sign form each day. Contractor shall also provide with the form: the names and classifications of workers and hours worked by each; an itemization of all materials used; and a list by size type and identification number of equipment and hours operated.
2. Owner shall have the right to audit all records in possession of Contractor relating to activities covered by Contractor's claims for modification of Contract, including CD Work. This right shall be specifically enforceable, and any failure of Contractor to voluntarily comply shall be deemed an irrevocable waiver and release of all claims then pending that were or could have been subject to Article 12 of Document 00 72 00 (General Conditions).

PART 2 PRODUCTS – NOT USED

PART 3 EXECUTION – NOT USED

END OF SECTION

[COST PROPOSAL FORM FOLLOWS ON NEXT PAGE]

COST PROPOSAL FORM

Historic Olivehurst Pipeline Replacement Project

CP Number: _____
Date: _____
In Response To _____
 (RFP #, etc.)

Contract Number _____

To: OLIVEHURST PUBLIC UTILITY DISTRICT

Attention: [_____] _____, CA 9 _____

Phone: (____) ____ - _____

Fax: (____) ____ - _____

From: [Insert Contractor's Name/Address] _____

This Cost Proposal is in response to the above-referenced _____ [insert RFP, etc. as applicable].

Brief description of change(s): _____

ITEM DESCRIPTION	PRIME CONTRACTOR	SUB 1	SUB 2	SUB 3	SUB 4	TOTAL
LABOR						
EQUIPMENT						
MATERIAL						
TOTAL DIRECT COST OF CONSTRUCTION (LEM)						
MARKUP FOR PRIME CONTRACTOR'S SELF-PERFORMED WORK (15%)						
MARKUP FOR SUBCONTRACTOR-PERFORMED WORK (20%)						
BONDS, INSURANCE AND TAXES						
GRAND TOTAL						

REQUESTED CHANGE IN CONTRACT TIME (DAYS)

(Time Impact Evaluation Enclosed)

By Contractor: _____ Signature: _____ Date: _____

DIVISION 1 GENERAL REQUIREMENTS

SECTION 01 31 19

PROJECT MEETINGS

PART 1 GENERAL

1.01 Summary

- A. Section includes description of required project meetings for construction phase of the Work.

1.02 Preconstruction Conference

- A. Preconstruction Conference. Owner will call for and administer Preconstruction Conference at time and place to be announced (usually the week prior to start of Work at the Site).
- B. Contractor, all major Subcontractors, and major suppliers shall attend Preconstruction Conference. Agenda may include, without limitation, the following items:

1. Schedules
2. Contractor's Initial Progress Schedule
3. Contractor's Schedule of Values
4. Contractor's Schedule of Submittals
5. Personnel and vehicle permit procedures
6. Use of premises
7. Location of the Contractor's on-Site facilities
8. Security
9. Housekeeping
10. Submittal and RFI procedures
11. Inspection and testing procedures, on-Site and off-Site
12. Utility shutdown procedures
13. Control and reference point survey procedures
14. Injury and Illness Prevention Program
15. Jurisdictional agency requirements

- C. Owner will distribute copies of minutes to attendees. Attendees shall have seven Days to submit comments or additions to minutes. Minutes will constitute final memorialization of results of Preconstruction Conference.

1.03 Schedule Review Meeting

- A. Review of Initial Draft Schedules. Contractor shall meet with Owner prior to Commencement Date of Work under Contract Documents and conduct initial review of Contractor's draft Shop Drawing and Sample Submittal Schedule, draft Schedule of Values, and Initial Progress Schedule. Authorized representative in Contractor's organization, designated in writing, who will be responsible for working and coordinating with Owner relative to preparation and maintenance of Progress Schedule shall attend the initial schedule review meeting.

- B. Pre-Payment Review of Second Draft Schedules.

1. Unless otherwise provided in Contract Documents, at least 15 Days before submission of the first application for payment, a conference attended by Contractor, Owner, and others as appropriate, will be held to review acceptability of the required schedules, first reviewed at the Preconstruction Conference. Contractor shall have an additional seven Days to make corrections and adjustments and to complete and resubmit the schedules. Schedules shall be updated and completed as required by Sections 01 20 00 (Measurement and Payment), 01 32 00 (Progress Schedules) and 01 33 00 (Submittals).

- C. Contractor shall have its manager, superintendent, scheduler, and key Subcontractor representatives, as required by Owner, in attendance. The meeting will take place over a

continuous one Day period. Owner review will be limited to submittal conformance to Contract Documents' requirements including, but not limited to, coordination requirements. Owner review may also include:

1. Clarifications of Contract Requirements.
2. Directions to include activities and information missing from submittal.
3. Requests of Contractor to clarify its schedule.
4. Within five Days of the Schedule Review Meeting, Contractor shall respond in writing to all questions and comments expressed by Owner at the meeting.

D. Owner will administer Schedule Review Meetings and shall distribute minutes of Schedule Review Meetings to attendees. Attendees shall have five Days to submit comments or additions to minutes. Minutes will constitute final memorialization of results of Schedule Review Meetings.

1.04 Weekly Project Meetings

A. Owner will schedule and administer weekly progress meetings throughout duration of Work. Progress meetings will be held weekly unless otherwise directed by Owner. Meetings shall be held at Owner's Offices unless otherwise specified in Contract Documents.

1. Owner's Representative will prepare agenda and distribute it four Days in advance of meeting to Contractor.
2. Participants with agenda items shall present them.
3. Owner shall record and distribute the meeting minutes. Minutes shall be distributed by the Owner to the Contractor within three business days after the meeting. Contractor shall distribute the minutes to those affected by decisions made at meeting. Attendees shall have five business days to submit comments or additions to the minutes. Minutes shall constitute final memorialization of results of meeting.
4. Progress meetings shall be attended by Contractor's job superintendent, major Subcontractors and suppliers, Owner, Owner consultants and Architect (at Owner's option), and others as appropriate to agenda topics for each meeting.
5. Agenda may contain the following items, as appropriate:
 - (a) Review, revise as necessary, and approve previous meeting minutes
 - (b) Review of Work progress since last meeting
 - (c) Status of Construction Work Schedule, delivery schedules, adjustments
 - (d) Submittal, RFI, and Change Order status
 - (e) Review of the Contractor's safety program activities and results, including report on all serious injury and/or damage accidents
 - (f) Other items affecting progress of Work

1.05 Progress Schedule and Billing Meetings

A. A meeting will be held on approximately the 20th of each month to review the schedule update submittal and progress payment application.

B. At this meeting, at a minimum, the following items will be reviewed:

1. Percent complete of each activity;
2. Time impact evaluations for Change Orders and Time Extension Request;
3. Actual and anticipated activity sequence changes;
4. Actual and anticipated duration changes; and
5. Actual and anticipated Contractor delays.

C. These meetings are considered a critical component of overall monthly schedule update submittal and Contractor shall have appropriate personnel attend. At a minimum, Contractor's General Superintendent and Scheduler shall attend these meetings.

1.06 Special Meetings

A. Any party may call special meetings by notifying all desired participants and Owner five Days in advance, giving reason for meeting. Special meetings may be held without advance notice in emergency situations.

- B. At any time during the progress of Work, Owner shall have authority to require Contractor to schedule a meeting with Owner and of any or all of the Subcontractors engaged in Work or in other work, to address matters of concern to the Owner.
 - C. Contractor shall schedule and conduct coordination meetings as necessary to discharge coordination responsibilities in Document 00 72 00 (General Conditions). Contractor shall give Owner five Days written notice of coordination meetings. Contractor shall maintain minutes of coordination meetings. Attendees shall have seven Days to submit comments or additions to minutes. Minutes will constitute final memorialization of results of coordination meetings.
 - D. Contractor to submit minutes of meetings to all attendees within three Days of the meeting.
- 1.07 Safety Meetings**
- A. Conduct monthly Contractor Safety Committee meetings.
 - B. Conduct weekly toolbox safety talks.

PART 2 PRODUCTS – NOT USED

PART 3 EXECUTION – NOT USED

END OF SECTION

DIVISION 1 GENERAL REQUIREMENTS

SECTION 01 32 00

PROGRESS SCHEDULES AND REPORTS

PART 1 GENERAL

1.01 Summary

- A. Section includes description of requirements and procedures for submitting progress schedules and submittals.
- B. Contractor shall employ competent scheduling personnel or a schedule consultant with experience performing scheduling required herein on a minimum of two prior, similar projects, and with first-hand knowledge of this Project.

1.02 General

- A. The Progress Schedule shall be cost-loaded based on Work Breakdown Structure/Schedule of Values as approved by Owner.
- B. Progress Schedule shall be based on, and incorporate milestone and completion dates specified, in Contract Documents.
- C. Overall time of completion and time of completion for each milestone shown on Progress Schedule shall adhere to times in Document 00 52 00 (Agreement), unless an earlier (advanced) time of completion is requested by Contractor and agreed to by Owner. A Contract Modification shall formalize any such agreement.
- D. Progress Schedule shall be the basis for evaluating job progress, payment requests, and time extension requests. Responsibility for developing Contract schedule and monitoring actual progress as compared to Progress Schedule rests with Contractor.
- E. Failure of Progress Schedule to include any element of the Work or any inaccuracy in Progress Schedule will not relieve Contractor from responsibility for accomplishing the Work in accordance with the Contract. Owner acceptance of Progress Schedule shall be for its use in monitoring and evaluating job progress, payment requests, and time extension requests, and shall not, in any manner, impose a duty of care upon Owner, or act to relieve Contractor of its responsibility for means and methods of construction.
- F. Transmit to Owner, no less than monthly, current progress schedule in electronic form, to include the entire electronic file without abridgment, inclusive of all updates.

1.03 Contractor to Submit Baseline and Progress Schedules

- A. Contractor shall submit an Initial Contract Schedule two weeks prior to the first Application for Payment – no later than the Preconstruction Conference as provided in Document 00 72 00 (General Conditions). Contractor's Initial Contract Schedule is subject to Owner's review and comments. The approved Initial Contract Schedule shall be referred to as the **Baseline Schedule**.
- B. Contractor's Baseline Schedule and progress schedules shall show Contractor's construction and procurement activities including, without limitation, equipment procurement and delivery (Contractor and Owner supplied), activities with Subcontractors and suppliers, major submittal reviews, commissioning of systems, use of major equipment on site, and necessary interface with Owner and third parties required to complete the Work in a timely manner and in accordance with Contract Time.

1.04 Schedule Requirements

- A. Unless Owner agrees in writing otherwise, progress schedule shall be on Primavera P6, most current version of Sure Track, or equivalent software acceptable to Owner, as Owner may specify, which Contractor shall prepare and supply to Owner, with all datapoint entries completed for start dates, necessary work activities, durations (not longer than 21 calendar days), and logic ties.
- B. Contractor shall develop a network plan and schedule for the Project demonstrating complete fulfillment of all Contract requirements, shall keep the network plans up to date in accordance with the requirements of this Section 01 32 00, and shall utilize the Critical Path Method (**CPM**) in planning, coordinating, performing and reporting the work under this contract, including all activities of Subcontractors, equipment vendors, and suppliers, and in assisting Owner in monitoring the progress of the Work.
- C. CPM network is a graphic depiction of the Contractor's construction plan, showing the sequential steps needed to reach completion of the Work within the prescribed Contract Time. It shall depict events and tasks as activities, and their interrelationships, and shall recognize the progress that must be made on one activity before subsequent activities can begin. These activities shall be logically represented in a CPM network showing their interrelationships in a chronological fashion. As each activity has a time allocation, the completed network shall show the critical path of activities that must be completed on time if the entire Project is not to be delayed. It shall also be possible to identify the earliest and latest start and finish times for each activity if the overall Project is not to be delayed. Therefore, the CPM network shall be comprehensive and shall include all interdependencies and interactions required to perform the Work of the Project.
- D. Contractor's Baseline Schedule and Progress Schedules shall be in the form of a CPM (arrow) diagram. Contractor shall provide Owner with native format electronic schedules and hard copies of the Baseline Schedule, schedule updates, and look-ahead schedules. All electronic and hard copies of the Progress Schedule that Contractor provides to Owner shall indicate the critical path of the Work (in red) and shall show a logical progression of the Work through (Substantial and Final) completion within Contract Time.
- E. Unless Owner agrees in writing otherwise, Progress Schedules shall also show early and late start and finish dates and total available float (float to the successor activity's late start date) for each activity.
- F. Owner has no obligation to accept an early completion schedule.

1.05 Monthly Updates

- A. Contractor's Progress Schedule shall be updated monthly to reflect actual progress. The schedule shall be subject to Owner's review and acceptance for use in monitoring Contractor's Work and evaluating Applications for Payment.
- B. Contractor shall supply Owner with an electronic copy of the updated Progress Schedule with each monthly Applications for Payment. Contractor shall provide Owner with three-week look-ahead schedules weekly, showing in detail and activities and resources scheduled for the immediate two week period.
- C. The three-week look-ahead schedule shall list the trades scheduled for the following three weeks, the approximate resource assignment, and the progress in the past week on trades and work activities for the prior week's three-week look-ahead schedule for the prior week. The three-week look-ahead schedule shall be produced and presented at each weekly progress meeting and shall be coordinated with the schedule required under this Section 01 32 00.

1.06 General

- A. Progress Schedule shall be based on, and incorporate milestone and completion dates specified, in Contract Documents.
- B. Overall time of completion and time of completion for each milestone shown on Progress Schedule shall adhere to times in Document 00 52 00 (Agreement), unless an earlier (advanced) time of

completion is requested by Contractor and agreed to by Owner. A Contract Modification shall formalize any such agreement.

- C. Progress Schedule shall be the basis for evaluating job progress, payment requests, and time extension requests. Responsibility for developing Contract schedule and monitoring actual progress as compared to Progress Schedule rests with Contractor.
- D. Failure of Progress Schedule to include any element of the Work or any inaccuracy in Progress Schedule will not relieve Contractor from responsibility for accomplishing the Work in accordance with the Contract. Owner acceptance of Schedule shall be for its use in monitoring and evaluating job progress, payment requests, and time extension requests, and shall not, in any manner, impose a duty of care upon Owner, or act to relieve Contractor of its responsibility for means and methods of construction.
- E. Transmit to Owner, no less than monthly, current Progress Schedule in electronic form, to include the entire electronic file without abridgment, inclusive of all updates.

1.07 Initial And Original Progress Schedule

- A. Initial Schedule submitted for review at the Preconstruction Conference shall serve as Contractor's schedule for up to 30 Days after the Notice to Proceed.
- B. Initial Schedule must indicate detailed plan for the Work to be completed in first 30 Days of the Contract; details of planned mobilization of plant and equipment; sequence of early operations; and procurement of materials and equipment. Show Work beyond 30 Days in summary form.
- C. Contractor shall submit its Original Schedule for review no later than first progress payment. Original Schedule and all updates shall comply with all standards herein.
- D. All Schedules shall be time-scaled.
- E. In lieu of providing a cost loaded schedule, Contractor shall provide owner with a monthly cash flow schedule, showing Contractor's forecasted expenditures on a monthly basis through completion of the Project. Contractor's cash flow schedule shall be updated monthly and shall have sufficient detail and accuracy to form a reasonable basis, based upon currently available information, for Owner to project and plan for Project cash flow requirements for the Project duration.
- F. Except as otherwise expressly provided in this Section 01 32 00, meet with Owner to review and discuss each Progress Schedule (i.e., Initial, Original and monthly updates) within seven (7) Days after each Progress Schedule has been submitted to Owner.
 - 1. Owner review and comment on any Progress Schedule shall be limited to Contract conformance (with sequencing, coordination, and milestone requirements).
 - 2. Contractor shall make corrections to Progress Schedule necessary to comply with Contract requirements and shall adjust Schedule to incorporate any missing information requested by Owner. Resubmit Initial Schedule if requested by Owner.
- G. Initial Schedule shall identify the following milestone events:
 - 1. Notice to Proceed date(s)
 - 2. Substantial completion and project completion at each construction phase
 - 3. Start and completion dates for Work in each occupied space
 - 4. Utility connections
 - 5. Inspections
- H. Original Schedule and all updates shall identify all Work activities, in proper sequence for the completion of the Work. Work activities shall include the following:
 - 1. Major Contractor-furnished equipment, materials, and building elements, and scheduled activities requiring submittals or Owner prior approval.
 - (a) Show dates for the submission, review, and approval of each submittal. Dates shall be shown for the procurement, fabrications, delivery, and installation of major equipment, materials, and building elements, and for scheduled activities designated by Owner.

- (b) A minimum of fifteen (15) working days shall be allotted for Owner review for each submittal.
- 2. System test dates
- 3. Dates Contractor request designated working spaces, storage areas, access, and other facilities to be provided by Owner
- 4. Dates Contractor requests orders and decisions from Owner
- 5. Dates Contractor requests Owner-furnished equipment
- 6. Dates Contractor requests Owner-furnished utilities
- 7. Connection and relocation of existing utilities
- 8. Connecting to or penetrating existing structures
- 9. Dates Contractor requests access to areas requiring removal of Asbestos containing materials by Owner
- I. If Contractor is of the opinion that any of the Work included on its Schedule has been impacted, submit to Owner a written Time Impact Evaluation (**TIE**) in accordance with this Section 01 32 00. The TIE shall be based on the most current update of the Initial Schedule.

1.08 Schedule Format and Level of Detail

- A. Utilize Primavera computer-scheduling software, for all scheduling including schedule updates, and employ scheduling personnel experienced and competent in it. For all activities or impacts shown in schedule, Contractor shall complete all data points in the software to specifically include the activities, their durations, their logic ties and their resources.
- B. Each Schedule (Initial, Original and updates) shall indicate all separate design, approvals, design reviews and submissions to authorities with jurisdiction, fabrication, long lead item procurement activities, procurement and field construction activities required for completion of the Work, including but not limited to the following:
 - 1. All Contractor, Subcontractor, and assigned Contractor work shall be shown in a logical work sequence that demonstrates a coordinated plan of work for all contractors. The intent is to provide a common basis of acceptance, understanding, and communication, as well as interface with other contractors.
 - 2. Activities related to the delivery of Contractor and Owner-furnished equipment to be Contractor-installed per Contract shall be shown.
 - 3. Critical design and construction milestones;
 - 4. All activities shall be identified through codes or other identification to indicate the building (i.e. buildings, Site work) and Contractor/Subcontractor responsibility to which they pertain.
 - 5. Break up the Work schedule into activities of durations of approximately twenty-one (21) Work Days or less each, except for non-field construction activities or as otherwise deemed acceptable by Owner.
 - 6. Show the critical path in red. For each activity, show early start, late start, early finish, late finish, durations measured in Days, float, resources, predecessor and successor activities, planned workday/week for the activity, material quantities, and scheduled/actual progress payments.
- C. Seasonal weather conditions (which do not constitute a delay as defined herein) shall be considered in the planning and scheduling of all work influenced by high or low ambient temperatures or presence of high moisture for the completion of the Work within the allotted Contract Time.
- D. Failure by Contractor to include any element of Work required for performance of the Work on the detailed construction schedule shall not excuse Contractor from completing all Work required within the Contract Time.
- E. A three-week "look ahead," detailed daily bar chart schedule shall be updated and issued weekly in hard copy and electronically.
- F. Monthly updates shall include schedule sorts in hard copy, by bid item (geographic work area) with critical items shown in red float and with early/late start and finish dates, to facilitate meaningful review and assessment of schedule.

1.09 Monthly Schedule Update Submittals

- A. Following acceptance of Contractor's Initial Schedule, Contractor shall monitor progress of Work and adjust Schedule each month to reflect actual progress and any anticipated changes to planned activities.
 - 1. Each Schedule update submitted shall be complete, including all information requested for the Initial Schedule and Original Schedule submittal.
 - 2. Each update shall continue to show all Work activities including those already completed. These completed activities shall accurately reflect "as built" information by indicating when activities were actually started and completed, and Contractor warrants the accuracy of as-built information as shown.
- B. A meeting will be held on approximately the 25th of each month to review the Schedule update submittal and progress payment application.
 - 1. At this meeting, at a minimum, the following items will be reviewed: Percent complete of each activity; TIEs for Contract Modifications and Time Extension Request; actual and anticipated activity sequence changes; actual and anticipated duration changes; and actual and anticipated Contractor delays and critical issues.
 - 2. These meetings are considered a critical component of overall monthly schedule update submittal; have appropriate personnel attend. At a minimum, Contractor's General Superintendent and Scheduler shall attend these meetings.
 - 3. Plan on the meeting taking no less than four hours.
- C. Within five Days after monthly Schedule update meeting, Contractor shall submit on CD the updated Schedule, and reports and charts, both in hard copy and on a CD.
- D. Within 35 Days of receipt of above-noted revised submittals, Owner will either accept or reject monthly schedule update submittal.
 - 1. If accepted, percent complete shown in monthly update will be basis for Application for Payment by Contractor. The schedule update shall be submitted as part of Contractor's Application for Payment and a basis of such payment.
 - 2. If rejected, update shall be corrected and resubmitted by Contractor before the Application for Payment is submitted. Owner may withhold five percent of monthly progress payment amount until acceptable schedule update is received.
- E. Neither updating, changing or revising of any report, curve, schedule or narrative submitted to Owner by Contractor under this Contract, Owner review or acceptance of any such report, curve, schedule or narrative, nor Owner failure to review same, shall have the effect of amending or modifying, in any way, the Contract Substantial Completion date or milestone dates or of modifying or limiting, in any way, Contractor's obligations under this Contract. Any Owner review is solely for Owner's internal consideration to reasonably ascertain likelihood of Contractor's achieving applicable Contract milestones, and Contractor may not rely thereon.

1.10 Schedule Revisions

- A. Updating the Schedule (Initial and Original) to reflect actual progress shall not be considered revisions to the Schedule. Since scheduling is a dynamic process, however, revisions to activity durations and sequences are expected on a monthly basis.
- B. To reflect revisions to the Schedule, provide Owner with a written narrative with a full description and reasons for each Work activity that is revised. For revisions affecting the sequence of Work, provide a schedule diagram that compares the original sequence to the revised sequence of Work. Contractor shall clearly show and discuss any changes in the critical path, and provide the written narrative and schedule diagram for revisions three (3) Days in advance of the monthly schedule update meeting.
- C. Schedule revisions shall not be incorporated into any schedule update until Owner has reviewed the revisions. Owner may request further information and justification for schedule revisions and, within three Days, provide Owner with a complete written narrative response to Owner request.

- D. If Owner does not accept Contractor's revision, and Contractor disagrees with Owner position, Contractor has seven Days from receipt of Owner letter rejecting the revision, to provide a written narrative providing full justification and explanation for the revision. Contractor's failure to respond in writing within seven Days of Owner written rejection of a schedule revision shall be contractually interpreted as acceptance of Owner position, and Contractor waives its rights to subsequently dispute or file a claim regarding Owner position. If Contractor files a timely response as provided in this paragraph, and the parties are still unable to agree, then Owner and Contractor's rights shall be as provided in Document 00 72 00 (General Conditions), Article 12.
- E. At Owner discretion, Contractor can be required to provide Subcontractor certifications of performance regarding proposed schedule revisions affecting said Subcontractors.

1.11 Recovery Schedule

- A. Owner may request If a recovery schedule should Contractor fall Schedule update shows a substantial completion date twenty-one (21 or more) Days behind any schedule Contract Substantial Completion date, or individual Milestone, which schedule shall show Contractor's plan and resources committed to retain Contract completion dates.
- B. The recovery schedule shall show the intended critical path., Contractor shall submit to Owner within seven Days the proposed revisions to recover the lost time. As part of this submittal, Contractor shall provide a written narrative for each revision made to recapture the lost time. If the revisions include sequence changes, Contractor shall provide a schedule diagram comparing the original sequence to the revised sequence of Work. If Owner requests, Contractor shall show the intended critical path; secure appropriate Subcontractor and supplier consent to the recovery Schedule; submit a narrative explaining trade flow and construction flow changes, duration changes, added/deleted activities, critical path changes and identify all near critical paths and man hour loading assumptions for major Subcontractors.
- C. The revisions shall not be incorporated into any Schedule update until Owner has reviewed the revisions.
- D. If Owner does not accept Contractor's revisions, Owner and Contractor shall follow the procedures set forth above regarding schedule revisions.
- E. At Owner discretion, Contractor can be required to provide Subcontractor certifications for revisions affecting said Subcontractors.

1.12 Time Impact Evaluation For Contract Modifications And Other Delays

- A. When Contractor is directed to proceed with changed work or Subcontractors, or otherwise requests a time extension, Contractor shall prepare and submit, within 14 Days from the direction to proceed, a Time Impact Evaluation (TIE).
- B. When Contractor requests a time extension for any reason, Contractor shall submit a TIE, in accordance with Article 11 of Document 00 72 00 and Section 01 26 00, Article 1.02.C that provides information justifying the request and stating the extent of the adjustment requested for each specific change or alleged delay. Each TIE shall be in a form and content that is acceptable to Owner and that includes both a written narrative and a schedule diagram depicting how the changed Work or other impact work affects other schedule activities. The schedule diagram shall show how Contractor proposes to incorporate the changed Work or other impact work in the schedule, and how it impacts the current Schedule update critical path or otherwise. Contractor is also responsible for establishing time extensions based on the TIE's impact on the critical path. The diagram shall be tied to the main sequence of scheduled activities to enable Owner to evaluate the impact of changed Work to the scheduled critical path.
- C. Contractor shall comply with the requirements of this Section 01 32 00 regarding the submission of TIEs for all types of delays such as, but not limited to, Contractor/Subcontractor delays, adverse weather delays, strikes, procurement delays, fabrication delays, etc.

- D. Contractor is responsible for all costs associated with preparing, and the process of incorporating TIE's into the current schedule update. Contractor shall provide Owner with four copies of each TIE both in hard copy and CD.
- E. Once agreement has been reached on a TIE, the Contract Time will be adjusted accordingly. If agreement is not reached on a TIE, the Contract Time may be extended in an amount Owner allows, and Contractor may submit a claim for additional time claimed by Contractor as provided in Document 00 72 00 (General Conditions).

1.13 Time Extensions

- A. Contractor is responsible for requesting time extensions for time impacts that, in the opinion of Contractor, impact the critical path of the current schedule update. Notice of time impacts shall be given in accordance with Document 00 72 00 (General Conditions).
- B. Where an event for which Owner is responsible impacts the projected Substantial Completion date, Contractor shall provide a written mitigation plan, including a schedule diagram, which explains how (e.g., increase crew size, overtime, etc.) the impact can be mitigated. Contractor shall also include a detailed cost breakdown of the labor, equipment, and material Contractor would expend to mitigate Owner-caused time impact. Contractor shall submit mitigation plan to Owner within fourteen (14) Days from the date of discovery of said impact. Contractor is responsible for the cost to prepare the mitigation plan.
- C. Failure to request time, provide TIE, or provide the required mitigation plan will result in Contractor waiving its right to a time extension and cost to mitigate the delay.
- D. No time will be granted under the Contract Documents for cumulative effect of changes.
- E. Owner will not be obligated to consider any time extension request unless requirements of Contract Documents are complied with.
- F. Failure of Contractor to perform in accordance with the current schedule update shall not be excused by submittal of time extension requests.
- G. Notwithstanding any other provision of this Section 01 32 00, if Contractor does not submit a TIE within the required 14 Days for any issue, Contractor hereby agrees that Contractor does not require a time extension for that issue.

1.14 Project Status Reporting

- A. In addition to submittal requirements for scheduling identified in this Section 01 32 00, Contractor shall provide a monthly project status report (i.e., written narrative report) to be submitted in conjunction with each Schedule as specified herein. Status reporting shall be in form specified in this paragraph.
- B. A progress summary shall be the first page of the Monthly Project Report. The report shall indicate in column format (i.) the original and forecast cost and dates of completion; (ii.) the original and adjusted contract sums; (iii.) pending change order requests and claims; and (iv.) the original and projected completion dates.
- C. The Monthly Project Report shall include construction progress and updates. Construction progress: generally since prior report, and percentage completion. Contractor shall include a narrative of the work performed and an updated task list and identify areas of concern, actions and approvals needed, including without limitation:
 - 1. Contractor schedule: work progress against schedule. The report shall clearly identify actual performance with respect to the current approved version of the schedule, including without limitation:
 - (a) Progress made on critical activities indicated on each Schedule, including inspections.
 - (b) Explanations for any lack of work on critical path activities planned to be performed during last month.

- (c) Explanations for any schedule changes, including changes to logic or to activity durations.
 - (d) List of critical activities scheduled to be performed during the next month.
 - (e) Status of major material and equipment procurement.
- 2. Problems. The narrative shall include any problems or delays encountered, causes of delays, proposed ways to work around any problems that arise and schedule assessment, and an explanation of how Project will be brought back on schedule if delays have occurred.
 - 3. Design Status. The Monthly Project Report shall include a section on design status for the Project. The report shall also include a list of any Contract deliverables and identification of areas of concern, actions and approvals needed, and recommendations regarding ongoing design work with respect to value engineering, constructability coordination of design services with other Project items, and any and all design changes affecting appearance, size, function, usage or cost of the Project or any Subproject.
 - 4. Subcontractor Procurement. The Monthly Project Report shall include a section on subcontractor procurement, if applicable.
 - 5. Contractor's Safety Program. The Monthly Project Report shall include a section on the Contractor's Safety Program. The narrative shall include incident reports and statistics and other Contractor recommended information to demonstrate and promote the effectiveness of its Safety Program.
 - 6. Disputes and Claims. The Monthly Project Report shall include a section on disputes and claims. For the Project and each Subproject, the narrative shall include a discussion on disputes, potential claims, and claims made.
 - 7. Look Ahead Task List. The Monthly Report shall include a 120-day look ahead/task listing for Owner planning purposes, of Owner-specific activities, inspections, approvals, tie-ins, connections, consents, decisions, necessary from the Owner to facilitate Contractor's progress.
 - 8. Daily Log (electronic copy only). Contractor shall keep a daily log containing a record of weather, contractor activities, and subcontractors working on the site, number of workers, work accomplished, problems encountered, impacts on the Work and specific activities, and other relevant data or such additional data as Owner may require. Contractor shall maintain the log electronically in a format acceptable to Owner, with each data-point maintained separately for separate sorting, charting or study by Owner if necessary. Contractor shall submit such electronic file monthly, with the Monthly Progress Report.
 - 9. Status reports, and the information contained therein, shall not be construed as claims, notice of claims, notice of delay, or requests for changes or compensation.
- D. At the close of each workday provide Owner with report of Contractor and its Subcontractors' work activities for that day, including trades, equipment, work activities worked on, staff levels, and equipment deliveries. Use form acceptable to Owner.
 - E. Submit all reports and schedule files on CD, in addition to written copies.
 - F. Submit all Title 24-required reports in the applicable required time, format and detail required by Title 24, as applicable.
- 1.15 Verified Reports.**
- A. Contractor shall ensure that the Verified Reports required by Title 24 of the California Code of Regulations be timely completed by Subcontractors and others

PART 2 PART 2 PRODUCTS – NOT USED

PART 3 PART 3 EXECUTION – NOT USED

END OF SECTION

DIVISION 1 GENERAL REQUIREMENTS

SECTION 01 33 00

SUBMITTALS

PART 1 GENERAL

1.01 Summary

- A. This section describes general requirements for submittals for the Work:
 - 1. Procedures
 - 2. Schedule of Shop Drawing and Sample Submittals
 - 3. Safety Plan
 - 4. Progress Schedule
 - 5. Product Data
 - 6. Shop drawings
 - 7. Samples
 - 8. Quality Control Submittals
 - (a) Engineering Data
 - (b) Test Reports
 - (c) Certificates
 - (d) Manufacturers' Instructions
 - 9. Caltrans Submittals
 - 10. City and State Permits
 - 11. Machine Inventory Sheets
 - 12. Operations and Maintenance Manuals
 - 13. Computer Programs
 - 14. Project Record Documents

1.02 Procedures

- A. Submit in duplicate sets, Schedule of Shop Drawing and Sample Submittals, Safety Plans, Progress Schedule, Product Data, Shop Drawings, Samples, Quality Control Data, Machine Inventory Sheets, Operations and Maintenance Manuals, Computer Programs, and Project Record Documents required by the Contract Documents.
- B. Transmit each item with a standard letter of transmittal in form approved by Owner.
- C. Identify Contractor, subcontractor, subconsultant, major supplier, pertinent drawing sheet and detail number, and specification section number as appropriate. Provide space for Owner review stamps.
- D. Where manufacturers' standard drawings or data sheets are used, they shall be marked clearly to show those portions of the data which are applicable to this Project.
- E. Submit Shop Drawings, Samples, Product Data and other submittals (collectively, **Submittals**) to Owner for review and action in accordance with accepted Schedule of Submittals. If no such schedule is agreed upon, then all Submittals shall be completed within 30 Days after commencement of Contract Time.
- F. The data shown on all Submittals shall be complete with respect to quantities, dimensions, materials and similar data to show Owner the materials and equipment Contractor proposes to provide and to enable Owner to review the information for the limited purposes specified below. Samples shall be identified clearly as to material, supplier, pertinent data such as catalog numbers and the use for which it is intended and otherwise as Owner may require to enable Owner to review the submittal. The number of each Sample to be submitted will be as specified in the Specifications.
- G. At the time of each submission, Contractor shall give Owner specific written notice of all variations, if any, that the Submittal may have from the requirements of the Contract Documents, and the reasons therefore. This written notice shall be in a written communication separate from the Submittal. In addition, Contractor shall cause a specific notation to be made on each Submittal submitted to Owner for review and approval of each such variation.

- H. If Owner accepts deviation, Owner shall issue an appropriate Contract Modification.
- I. Submittal coordination and verification is the responsibility of Contractor, this responsibility shall not be delegated in whole or in part to subcontractors, subconsultants or suppliers. Before submitting each Submittal, Contractor shall have determined and verified:
- J. Submittal coordination and verification is the responsibility of Contractor; this responsibility shall not be delegated in whole or in part to subcontractors, subconsultants or suppliers. Before submitting each Submittal, Contractor shall have determined and verified:
 - 1. All field measurements, quantities, dimensions, specified performance criteria, installation requirements, materials, catalog numbers and similar information with respect thereto;
 - 2. All materials with respect to intended use, fabrication, shipping, handling, storage, assembly and installation pertaining to the performance of the Work; and
 - 3. All information relative to Contractor's sole responsibilities and of means, methods, techniques, sequences and procedures of construction and safety precautions and programs incident thereto.
- K. Contractor shall also have reviewed and coordinated each Submittal with other Submittals and with the requirements of the Work and the Contract Documents.
- L. Contractor's submission to Owner of a Submittal will constitute Contractor's representation that it has satisfied its obligations under the Contract Documents, and as set forth immediately above, with respect to Contractor's review and approval of that Submittal.
- M. Designation of work "by others", if shown in Submittals prepared by a subcontractor, subconsultant or supplier, shall mean that work will be responsibility of Contractor rather than the subcontractor, subconsultant or supplier who has prepared submittals.
- N. After review by Owner of each of Contractor's Submittals, one of set of duplicates of material will be returned to Contractor with actions defined as follows:
 - 1. NO EXCEPTIONS TAKEN - Accepted subject to its compatibility with future Submittals and additional partial Submittals for portions of the Work not covered in this Submittal. Does not constitute approval or deletion of specified or required items not shown on the Submittal.
 - 2. MAKE CORRECTIONS NOTED (NO RESUBMISSIONS REQUIRED) - Same as 1. above, except that minor corrections as noted shall be made by Contractor.
 - 3. AMEND AND RESUBMIT - Rejected because of major inconsistencies or errors which shall be resolved or corrected by Contractor prior to subsequent review by Owner.
 - 4. REJECTED - RESUBMIT - Submitted material does not conform to Drawings and Specifications in major respect, i.e.: wrong size, model, capacity, or material.
 - 5. NOT REVIEWED - Submitted material has not been reviewed and is being returned to be acted upon by Contractor without review by Owner.
- O. It is considered reasonable that Contractor shall make a complete and acceptable Submittal at least by its second submission. Owner reserves the right to deduct monies from payments due Contractor to cover additional costs of Owner's review beyond the second submission. Illegible Submittals will be rejected and returned to Contractor for resubmission.
- P. Favorable review will not constitute acceptance by Owner of any responsibility for the accuracy, coordination and completeness of the Submittals. Accuracy, coordination, and completeness of Submittals shall be sole responsibility of Contractor, including responsibility to backcheck comments, corrections, and modifications from Owner's review before proceeding with the Work which is the subject of the Submittals. Submittals may be prepared by Contractor, Subcontractors or suppliers, but Contractor shall ascertain that Submittals meet all requirements of the Contract Documents, while conforming to structural space and access conditions at the point of installation. Owner's review will be only to determine if the items covered by the Submittals will, after installation or incorporation in the Work, conform to the requirements of the Contract Documents. Favorable review of a Submittal, method of work, or information regarding materials and equipment Contractor proposes to furnish shall not relieve Contractor of responsibility for errors therein and shall not be regarded as an assumption of risk or liability by Owner, or any officer or employee thereof, and

Contractor shall have no claim under Contract on account of failure or partial failure or inefficiency or insufficiency of any plan or method of work or material and equipment so reviewed. Favorable review shall be considered to mean merely that Owner has no objection to Contractor using, upon his own full responsibility, the plan or method of work proposed, or furnishing the materials and equipment proposed.

- Q. Owner's review will not extend to the means, methods, techniques, sequences or procedures of construction or to safety precautions or programs incident thereto. The review and approval of a separate item as such will not indicate approval of the assembly in which the item functions. Owner may decline to review Submittals in which event the Submittals will be returned to Contractor to be acted upon without review. There is no obligation running to Contractor by Owner, or anyone acting upon its behalf to act upon Contractor's Submittals, and action upon them does not give rise to liability of any type to Contractor.
- R. Submit a complete initial Submittal for those items where required by individual Specification sections. The complete submittal shall contain sufficient data to demonstrate that items comply with the Contract Documents, shall meet minimum requirements for submissions cited in the technical specifications, shall include motor data and seismic anchorage certifications, where required, and shall include other necessary revisions required for equipment. If Contractor submits an incomplete initial Submittal, when complete the Submittal is required, submittal may be returned to Contractor without review.
- S. It shall be Contractor's responsibility to copy, conform and distribute reviewed Submittals in sufficient numbers for Contractor's files, Subcontractors and vendors.
- T. After Owner's review of a Submittal, revise and resubmit as required. Identify changes made since previous Submittal.
 - 1. Begin no fabrication or work which requires Submittals until return of Submittals not requiring resubmittal.
 - 2. Normally, Submittals will be processed and returned to Contractor within 15 working days of receipt.
- U. Distribute copies of reviewed Submittals to concerned persons. Instruct recipients to promptly report any inability to comply with Submittals.

1.03 Schedule Of Shop Drawings And Sample Submittals

- A. Submit preliminary Schedule of Shop Drawing and Sample Submittals as required by Document 00 72 00 (General Conditions). Submit two copies of final and accepted Schedule of Submittals of Shop Drawings and samples as required by Document 00 72 00 (General Conditions), and in no event later than 30 days following Notice to Proceed.
- B. The Schedule of Shop Drawing and Sample Submittals will be used by Owner to schedule activities relating to review of submittals. Schedule of Submittals shall indicate a spreading out of Submittals and early Submittals of long lead-time items and of items which require extensive review.
- C. Schedule of Shop Drawing and Sample Submittals shall be reviewed by Owner and shall be revised and resubmitted until accepted by Owner.

1.04 Safety Plan

- A. Submit two copies of a Safety Plan specific to this Contract to Owner within 15 Days after commencement of Contract Time.
- B. One copy of accepted the Safety Plan will be returned to Contractor.
- C. No on-site work shall be started until Safety Plan has been reviewed and accepted by Owner. Acceptance of the Safety Plan shall not affect Contractor's responsibility for maintaining a safe working place and instituting safety programs in connection with project. Neither Owner nor Owner assumes any responsibility for Contractor's safety related obligations. Contractor shall have sole responsibility for safety on and off the Site.

1.05 Progress Schedule

- A. See Section 01 32 00 (Progress Schedules and Reports), for schedule and report requirements.
- B. Submit one electronic and three print copies of the schedule at each of the following times:
 - 1. Initial CPM Schedule at the Preconstruction Conference.
 - 2. Original CPM Schedule within 60 days of commencement of Contract Time.
 - 3. Adjustments to the CPM Schedule as required.
 - 4. CPM Schedule updates monthly, submitted with each Pay Application.
- C. Submit four copies of the reports listed in Section 01 32 00 Progress Schedules and Reports, with:
 - 1. Initial CPM Schedule
 - 2. Original CPM Schedule
 - 3. Each monthly Schedule update
- D. Progress Schedules and Reports shall be submitted electronically in addition to hard copies specified above.

1.06 Product Data

- A. Within 30 calendar days after commencement of Contract Time submit two copies of complete list of major products proposed for use, with name of the manufacturer, trade name, and model number of each product.
- B. For products specified only by reference standards, give manufacturer, trade name, model or catalog designation, and reference standards.
- C. Tabulate products by specification section number.
- D. Supplemental Data:
 - 1. Submit number of copies which Contractor requires, plus two copies which will be retained by Owner.
 - 2. Mark each copy to identify applicable products, models, options, and other data. Supplement manufacturers' standard data to provide information unique to the Project.
- E. Provide copies for Project Record Documents described in Section 01 77 00 Contract Closeout.

1.07 Shop Drawings

- A. Minimum Sheet Size: 8-1/2 inches by 11 inches. All others: Multiples of 8-1/2 inches by 11 inches, 34 inches by 44 inches maximum.
- B. For 8-1/2 inch by 11 inch and 11 inch by 17 inch sheets, submit the number of copies which Contractor requires, plus two copies which will be retained by Owner.
- C. For 17 inch by 22 inch through 34 inch by 44 inch sheets, submit one reproducible transparency and two prints. After review, reproduce and distribute.
- D. The original sheet or reproducible transparency will be marked with Owner's review comments and returned to Contractor.
- E. Mark each copy to identify applicable products, models, options, and other data; supplement manufacturers' standard data to provide information unique to the Work.
- F. Include manufacturers' installation instructions when required by Specification section.

1.08 Samples

- A. Submit full range of manufacturers' standard colors, textures, and patterns for Owner's selection.
- B. Submit samples to illustrate functional and aesthetic characteristics of each product, with integral parts and attachment devices. Coordinate Submittal of different categories for interfacing work.
- C. Include identification on each sample, giving full information.
- D. Submit two samples unless otherwise specified. One will be retained.
- E. Sizes: Unless otherwise specified, provide the following:

1. Paint Chips: Manufacturers' standard
2. Flat or Sheet Products: Minimum 6 inches square, maximum 12 inches square
3. Linear Products: Minimum 6 inches, maximum 12 inches long
4. Bulk Products: Minimum 1 pint, maximum 1 gallon

F. Full size samples may be used in the Work upon approval.

G. Mock-ups:

1. Erect field samples and mock-ups at the Project Site in accordance with the requirements of Specification sections.
2. Modify or make additional field samples and mock-ups as required to provide appearance and finishes approved by Owner.
3. Approved field samples and mock-ups may be used in the Work upon approval.

1.09 Quality Control Submittals

A. Test Reports: Three copies. One copy will be marked with Owner's review comments and returned to Contractor.

1. Indicate that the material or product conforms to or exceeds specified requirements.
2. Reports may be from recent or previous tests on material or product, but must be acceptable to Owner. Comply with requirements of each individual Specification.

B. Certificates: Three copies. One copy will be marked with Owner's review comments and returned to Contractor.

1. Indicate that the material or product conforms to or exceeds specified requirements.
2. Submit supporting reference data, affidavits, and certifications as appropriate.
3. Certificates may be recent or from previous test results on material or product, but must be acceptable to Owner.

C. Manufacturers' Instructions: Three copies. One copy will be marked with Owner's review comments and returned to Contractor.

1. Include manufacturers' printed instructions for delivery, storage, assembly, installation, startup, adjusting, and finishing.
2. Identify conflicts between manufacturers' instructions and Contract Documents.

1.10 Not Used

1.11 Operations And Maintenance Manuals

A. Submit two copies of manufacturers' operations and maintenance manuals. If necessary, both copies will be marked with Owner's review comments and returned to Contractor for correction until satisfactory information is provided. Owner will retain satisfactorily corrected manuals for Owner's own use.

B. Operations and maintenance manuals shall include the following as appropriate:

1. Operating instructions
2. Preventive maintenance instructions
3. Cleaning instructions
4. Safety precautions
5. Trouble shooting procedures
6. Theory of operation to discrete component level
7. Schematic diagrams, flow diagrams, wiring diagrams, logic diagrams, etc. to discrete component level
8. Parts lists showing all discrete components with part number, current prices and availability
9. List of replaceable supplies; paper, ink, ribbon, etc. with part numbers, current prices and availability
10. Recommended levels of spare parts and supplies to keep on hand

11. Manufacturers' service and maintenance technical manuals
 12. Names, addresses and telephone numbers of service and repair firms for the equipment
- C. Manuals shall be the same as are used by manufacturers' authorized technicians to completely service and repair the equipment.

1.12 Computer Programs

- A. When any equipment requires operation by computer programs, submit a copy of the program on appropriate diskette plus all user manuals and guides for operating the programs and making changes in the programs for upgrading and expanding the databases. Programs must be compatible with Owner software requirements, or in a form otherwise acceptable to Owner. Provide required licenses to Owner at no additional cost.

1.13 Project Record Documents

- A. Submit one copy of each of the Project Record Documents listed in Section 01 77 00 Contract Closeout.

1.14 Delay Of Submittals

- A. Delay of Submittals by Contractor is considered Contractor-caused delay. Liquidated damages incurred because of late Submittals will be assessed to Contractor.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION

DIVISION 1 GENERAL REQUIREMENTS

SECTION 01 41 00

REGULATORY REQUIREMENTS

PART 1 GENERAL

1.01 Summary

A. Section includes

1. Regulatory requirements applicable to Contract Documents.
2. Required provisions regarding resolution of construction claims.
3. Required references under federal law.

1.02 General

A. Compliance with Laws

1. Conform to all applicable codes, laws, ordinances, rules and regulations, which shall have full force and effect as though printed in full in these Specifications. Codes, laws, ordinances, rules, regulations and ordinances (**Regulatory Requirements**) are not furnished to Contractor, because Contractor is assumed to be familiar with these requirements.
2. Any listing of Regulatory Requirements for hazardous waste abatement Work in the Contract Documents is supplied to Contractor as a courtesy and shall not limit Contractor's responsibility for complying with all applicable Regulatory Requirements having application to the Work. Where conflict among the Regulatory Requirements or with these Specifications occurs, the most stringent requirements shall be used.
3. Specific reference in the Specifications to codes and regulations or requirements of regulatory agencies shall mean the latest printed edition of each adopted by the regulatory agency in effect at the time of the opening of Bids, except as may be otherwise specifically stated in the Contract Documents.

B. Precedence

1. Where specified requirements differ from Regulatory Requirements, the more stringent requirements shall take precedence. Where Drawings or Specifications require or describe products or execution of better quality, higher standard or greater size than required by Regulatory Requirements, then Drawings and Specifications shall take precedence so long as such increase is legal. Where no requirements are identified on Drawings or in Specifications, comply with all Regulatory Requirements of governing authorities having jurisdiction.
2. Should any conditions develop not covered by the Contract Documents wherein the finished Work will not comply with current codes, a Change Order detailing and specifying the required Work shall be submitted to and approved by Owner before proceeding with the Work.

1.03 Regulatory Requirements

A. Applicable Codes

1. Codes that apply to Contract Documents include all Codes applicable to construction, including, **WITHOUT LIMITATION**, the following:
 - (a) California Building Code (2019 Edition or latest applicable code) as amended by applicable local ordinances for all construction work.
 - (b) California Electrical Code (2019 Edition or latest applicable code) as amended by applicable local ordinances for all construction work.

- (c) California Plumbing Code (2019 Edition or latest applicable code) as amended by applicable local ordinances for plumbing, sewage disposal and health requirements.
- (d) California Mechanical Code (2019 Edition or latest applicable code) as amended by applicable local ordinances for all construction work.
- (e) California Fire Code (2019 Edition or latest applicable code) as amended by applicable local ordinances for all construction work.
- (f) California Administrative Code Titles 15, 19 and 24 (with California amendments), and Americans with Disabilities Act (ADA) accessibility guidelines, whichever is more stringent.
- (g) All State laws and City, City and County Ordinances, rules of the State or City, City or County Health Departments, rules of the National Board of Fire Underwriters and National Fire Protection Associations, and local power company regulations for mechanical and electrical work.

B. Applicable Laws, Statutes, Ordinances, Rules, And Regulations

- 1. During prosecution of Work to be done under Contract Documents, Contractor shall comply with applicable laws, ordinances, rules and regulations including, without limitation, the following:
 - (a) Federal:
 - (i) Americans With Disabilities Act of 1990
 - (ii) 29 CFR, Section 1910.1001, Asbestos
 - (iii) 40 CFR, Subpart M, National Emission Standards for Asbestos
 - (iv) Executive Order 11246
 - (v) Federal Endangered Species Act
 - (vi) Clean Water Act
 - (b) State of California:
 - (i) Code of Regulations, Titles 5, 8, 17, 19, 21, 22, 24 and 25
 - (ii) Public Contract Code
 - (iii) Health and Safety Code
 - (iv) Government Code
 - (v) Labor Code
 - (vi) Civil Code
 - (vii) Code of Civil Procedure
 - (viii) CPUC General Order 95, Rules for Overhead Electric Line Construction
 - (ix) CPUC General Order 128, Rules for Construction of Underground Electric Supply and Communications Systems
 - (x) Cal/OSHA
 - (xi) OSHA: Hazard Communications Standards
 - (xii) California Endangered Species Act
 - (xiii) Water Code
 - (xiv) Fish and Game Code
 - (c) State of California Agencies:
 - (i) State and Consumer Services Agency
 - (ii) Office of the State Fire Marshall
 - (iii) Office of Statewide Health Planning and Development (if applicable)
 - (iv) Department of Fish and Game
 - (v) All Air Quality Management Districts with jurisdiction
 - (vi) All Regional Water Quality Control Boards with jurisdiction
 - (d) All Local Agencies with jurisdiction (cities, counties, fire departments)

C. Change Orders and Claims

- 1. The Public Contract Code including, without limitation, Section 7105(d)(2), and the California Government Code Section 930.2, et seq., apply to all contract procedures for changes, time extensions, change orders (time or compensation) and claims. Federal law

(*U.S. v. Holpuch* 326 U.S. 234) shall supplement California law on the enforceability of these requirements.

2. Any change, waiver, or omission to implement contract change order and claim procedures shall have no legal effect unless expressly permitted in a fully executed change order approved by Contractor and Owner and approved as to form by their respective legal counsel.

D. Required Provisions On Contract Claim Resolution

1. Public Contract Code Section 9204 specifies provisions on resolving contract claims of any size, and Public Contract Code Section 201014, et seq., specifies required provisions on resolving contract claims less than \$375,000. Those statutes constitute a part of this Contract. In the event any other Contract provision violates such statutes, the applicable statute controls.
2. Public Contract Code Section 9204 provides:
 - a. For the purposes of this section, "Claim" means a separate demand by Contractor for (1) a time extension, (2) payment or money or damages arising from Work done by or on behalf of Contractor arising under the Contract Documents and payment of which is not otherwise expressly provided for or the Claimant is not otherwise entitled to, or (3) an amount the payment of which is disputed by Owner.
 - b. Procedure:
 - 1) Upon receipt of a Claim the Owner shall conduct a reasonable review of the Claim and within 45 days, or if Owner's governing body must approve Owner's response to the Claim and the governing body has not met within the 45 days then within three (3) days of the governing body's meeting, shall provide Contractor with a written statement identifying what portion of the claim is disputed and what portion is undisputed. Should Owner take no action on the Claim within 45 days of submission, it shall be deemed denied.
 - 2) If the Contractor disputes Owner's response to its Claim, including a failure to respond, it may submit via registered mail or certified mail, return receipt requested, a written demand for an informal conference to meet and confer for settlement of the issues in dispute. Owner shall schedule such a meet and confer conference within 30 days for settlement of the dispute. Within ten (10) days of the meet and confer conference Owner shall provide Contractor with a written statement identifying the portion of the Claim that remains in dispute and the portion that is undisputed. If the Contractor disputes Owner's statement it shall inform Owner and they shall mutually agree to a mediator within 10 business days of the written statement.
 - 3) Owner shall pay the undisputed portions of the Claim within 60 days of the issuance of a written statement identifying an undisputed portion.
 - 4) Any disputed portion of the Claim, as identified by the Contractor in writing, shall be submitted to nonbinding mediation, with the Owner and the claimant sharing the associated costs equally. The Owner and claimant shall mutually agree to a mediator within 10 business days after the disputed portion of the claim has been identified in writing. If the parties cannot agree upon a mediator, each party shall select a mediator and those mediators shall select a qualified neutral third party to mediate with regard to the disputed portion of the claim. Each party shall bear the fees and costs charged by its respective mediator in connection with the selection of the neutral mediator. If mediation is unsuccessful, the parts of the Claim remaining in dispute shall be subject to applicable procedures outside this section.
 - 5) For claims under \$375,000, unless the parties agree otherwise in writing, mediation pursuant to these provisions shall excuse the mediation obligation under Public Contracting Code section 20104.4(a).
 - 6) The parties may mutually agree, in writing, to waive the mediation requirements

- of this subsection and proceed to the commencement of a civil action.
- 7) Failure by the Owner to respond to a Claim from a Contractor within the time periods described in this subdivision or to otherwise meet the time requirements of this section shall result in the claim being deemed rejected in its entirety. A Claim that is denied by reason of the public entity's failure to have responded to a Claim, or its failure to otherwise meet the time requirements of this section, shall not constitute an adverse finding with regard to the merits of the Claim or the responsibility or qualifications of the claimant.
 - 8) Amounts not paid in a timely manner as required by this section shall bear interest at 7 percent per annum.
 - 9) If a Subcontractor or a lower tier subcontractor lacks legal standing to assert a claim against Owner because privity of contract does not exist, the Contractor may present to the Owner a claim on behalf of a Subcontractor or lower tier subcontractor. A Subcontractor may request in writing, either on his or her own behalf or on behalf of a lower tier subcontractor, that the Contractor present a claim for work which was performed by the Subcontractor or by a lower tier subcontractor on behalf of the Subcontractor. The Subcontractor requesting that the Claim be presented to the public entity shall furnish reasonable documentation to support the claim. Within 45 days of receipt of this written request, the Contractor shall notify the Subcontractor in writing as to whether the Contractor presented the claim to the Owner and, if the original Contractor did not present the claim, provide the Subcontractor with a statement of the reasons for not having done so.
 - 10) Nothing in this section shall impose liability upon a public entity that makes loans or grants available through a competitive application process, for the failure of an awardee to meet its contractual obligations.
 - 11) Pursuant to AB 456, this section shall remain in effect only until January 1, 2027, and as of that date is repealed, unless a later enacted statute, that is enacted before January 1, 2027, deletes or extends that date.
3. To the extent applicable, Public Contract Code Section 20104, et seq., provide:
- a. For the purposes of this section, "Claim" means a separate demand by Contractor of \$375,000 or less for (1) a time extension, (2) payment or money or damages arising from Work done by or on behalf of Contractor arising under the Contract Documents and payment of which is not otherwise expressly provided for or the Claimant is not otherwise entitled to, or (3) an amount the payment of which is disputed by Owner. Separate Contractor Claims that together total more than \$375,000 do not qualify as a "separate demand of \$375,000 or less," as referenced above, and are not subject to this section.
 - b. Caution. This section does not apply to tort claims, and nothing in this section is intended nor shall be construed to change the time periods for filing tort claims or actions specified by Chapter 1 and Chapter 2 of Part 3 of Division 3.6 of Title 1 of the Government Code.
 - c. Procedure:
 - 1) The Claim must be in writing, submitted in compliance with all requirements of Document 00 72 00 (General Conditions), Article 12 including, without limitation, the time prescribed by and including the documents necessary to substantiate the Claim, pursuant to Document 00 72 00 (General Conditions), Paragraph 12.02. Nothing in this section is intended to extend the time limit or supersede notice requirements for the filing of claims as set forth in Document 00 72 00 (General Conditions), Article 12 or elsewhere in the Contract Documents.
 - 2) For Claims of fifty thousand dollars (\$50,000) or less, Owner shall respond in writing within forty-five (45) days of receipt of the Claim, or Owner may request in writing within thirty (30) days of receipt of the Claim, any additional documentation supporting the Claim or relating to any defenses or claims Owner may have against Claimant. If additional information is thereafter

required, it shall be requested and provided in accordance with this section upon mutual agreement of Owner and Claimant. Owner's written response to the Claim, as further documented, shall be submitted to Claimant within fifteen (15) days after receipt of further documentation or within a period of time no greater than taken by Claimant in producing the additional information, whichever is greater.

- 3) For Claims over Fifty Thousand Dollars (\$50,000) and less than or equal to \$375,000: Owner shall respond in writing within sixty (60) days of receipt of the Claim, or Owner may request in writing within thirty (30) days of receipt of the Claim, any additional documentation supporting the Claim or relating to any defenses or claims Owner may have against Claimant. If additional information is thereafter required, it shall be requested and provided in accordance with this section, upon mutual agreement of Owner and Claimant; Owner's written response to the Claim, as further documented, shall be submitted to Claimant within thirty (30) days after receipt of further documentation or within a period of time no greater than taken by Claimant in producing the additional information, whichever is greater.
- 4) Meet and Confer: If Claimant disputes Owner's written response, or Owner fails to respond within the time prescribed above, Claimant shall notify Owner, in writing, either within fifteen (15) days of receipt of Owner's response or within fifteen (15) days of Owner's failure to timely respond, and demand an informal conference to meet and confer for settlement of the issues in dispute. Upon demand Owner will schedule a meet and confer conference within thirty (30) days for settlement of the dispute.

- (a) Following the meet and confer conference, if the Claim or any portion remains in dispute, Claimant may file a claim as provided in Chapter 1 (commencing with Section 900) and Chapter 2 (commencing with Section 910) of Part 3 of Division 3.6 of Title 1 of the Government Code. For purposes of those provisions, the running of the period of time within which a claim must be filed shall be tolled from the time Claimant submits its written claim as set forth herein, until the time that Claim is denied as a result of the meet and confer process, including any period of time utilized by the meet and confer process.

E. Compliance With Americans With Disabilities Act

1. Contractor acknowledges that, pursuant to the Americans with Disabilities Act (**ADA**), programs, services and other activities provided by a public entity to the public, whether directly or through a Contractor, must be accessible to the disabled public. Contractor shall provide the services specified in the Contract Documents in a manner that complies with the ADA and any and all other applicable federal, state and local disability rights legislation. Contractor agrees not to discriminate against disabled persons in the provision of services, benefits or activities provided under the Contract Documents and further agrees that any violation of this prohibition on the part of Contractor, its employees, agents or assigns shall constitute a material breach of the Contract Documents.

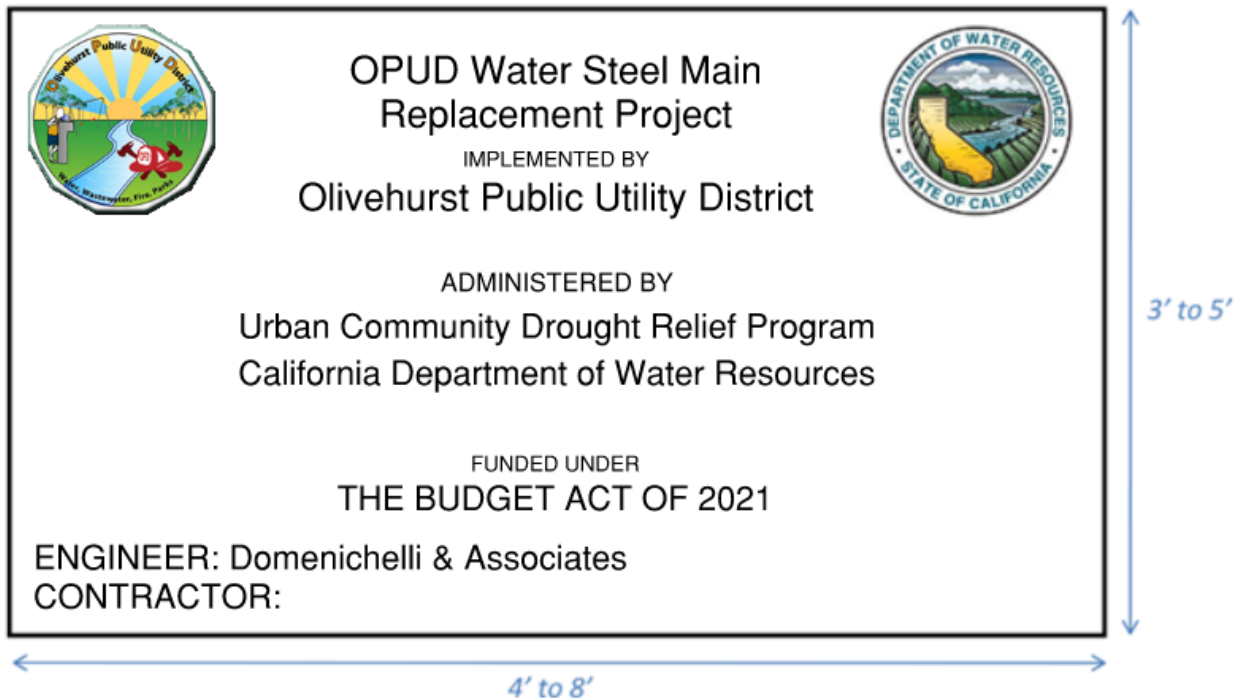
F. Compliance With IRCA

1. Contractor acknowledges that Contractor, and all subcontractors hired by Contractor to perform services under this Contract, are aware of and understand the Immigration Reform and Control Act (**IRCA**). Contractor is and shall remain in compliance with the IRCA and shall ensure that any subcontractors hired by Contractor to perform services under this Contract are in compliance with the IRCA. In addition, Contractor agrees to indemnify, defend and hold harmless Owner, its agents, officers and employees, from any liability, damages or causes of action arising out of or relating to any claims that Contractor's employees, or employees of any subcontractor hired by Contractor, are not authorized to work in the United States for Contractor or its subcontractor and/or any other claims based upon alleged IRCA violations committed by Contractor or Contractor's subcontractors.

G. Compliance with AB 1755 and DWR Signage Guidance

1. Contractor acknowledges that the project funding utilizes grant funds from the Department of Water Resources and is subject to the regulatory requirements of AB 1755. These requirements include rules concerning the sharing of data in a compatible format with the systems utilized by the agencies listed in AB 1755. Contractor may be required to provide project data as directed by the DWR.
2. Contractor acknowledges that signage must be visible at the job site per the direction of OPUD and the DWR. See below for example signage.

Urban Community Drought Relief Grant Projects Signage Guidance



- This is a conceptual design sketch that is NOT to scale.
- Provide adequate structural supports for sign as site conditions may require.
- Keep sign a proper distance above prevailing grade to permit public viewing.
- Paint letters blue (Blue No.15102 in federal color standard No.595).
- DWR Logos are available through your Grant Manager.

PART 2 PRODUCTS – NOT USED

PART 3 EXECUTION – NOT USED

END OF SECTION

DIVISION 1 GENERAL REQUIREMENTS

SECTION 01 42 00

REFERENCES AND DEFINITIONS

PART 1 GENERAL

1.01 Summary

- A. Section Includes:
1. Reference standards, abbreviations, symbols, and definitions used in Contract Documents.
 2. Full titles are given in this Section for standards cited in other Sections of Specifications.

1.02 Reference to Standards and Specifications of Technical Societies; Reporting and Resolving Discrepancies

- A. References
1. Reference to standards, specifications, manuals, or codes of any technical society, organization, or association, or to the laws or regulations of any governmental authority, whether such reference be specific or by implication, shall mean the latest standard, specification, manual, code, or laws or regulations in effect at the time of opening of Bids, except as may be otherwise specifically stated in the Contract Documents.
 2. If during the performance of the Work, Contractor discovers any conflict, error, ambiguity, or discrepancy within the Contract Documents or between the Contract Documents and any provision of any such law or regulation applicable to the performance of the Work or of any such standard, specification, manual, or code or of any instruction of any supplier, Contractor shall report it in writing at once to Owner's Representative and Architect/Engineer, and Contractor shall not proceed with the Work affected thereby until consent to do so is given by Owner.
- B. Precedence
1. Except as otherwise specifically stated in the Contract Documents or as may be provided by Change Order, CCD, or Supplemental Instruction, the provisions of the Contract Documents shall take precedence in resolving any conflict, error, ambiguity, or discrepancy between the provisions of the Contract Documents and:
 - (a) The provisions of any such standard, specification, manual, code, or instruction (whether or not specifically incorporated by reference in the Contract Documents);
or
 - (b) The provisions of any such laws or regulations applicable to the performance of the Work (unless such an interpretation of the provisions of the Contract Documents would result in violation of such law or regulation).
 2. No provision of any such standard, specification, manual, code, or instruction shall be effective to change the duties and responsibilities of Owner, Owner's Representative, Architect/Engineer or Contractor, or any of their subcontractors, consultants, agents, or employees, from those set forth in the Contract Documents, nor shall it be effective to assign to Owner, Architect/Engineer, or any of their consultants, agents, representatives or employees any duty or authority to supervise or direct the furnishing or performance of the Work or any duty or authority to undertake responsibility inconsistent with the provisions of the Contract Documents.
- C. Referenced Grades, Classes, and Types:
1. Where an alternative or optional grade, class, or type of product or execution is included in a reference but is not identified in Drawings or in Specifications, provide the highest, best, and greatest of the alternatives or options for the intended use and prevailing conditions.
- D. Edition Date of References:

1. When an edition or effective date of a reference is not given, it shall be understood to be the current edition or latest revision published as of the date of opening Bids.
 2. All amendments, changes, errata and supplements as of the effective date shall be included.
- E. ASTM and ANSI References: Specifications and Standards of the American Society for Testing and Materials (ASTM) and the American National Standards Institute (ANSI) are identified in the Drawings and Specifications by abbreviation and number only and may not be further identified by title, date, revision, or amendment. It is presumed that Contractor is familiar with and has access to these nationally- and industry-recognized specifications and standards.

1.03 Definitions

A. Meaning of Words and Phrases

Wherever any of the words or phrases defined below, or a pronoun used in place thereof, is used in any part of the Contract Documents, it shall have the meaning here set forth. Where abbreviations and symbols are used, such abbreviations and symbols shall be given their common meaning in the construction industry. In the Contract Documents, the neuter gender includes the feminine and masculine, and the singular number includes the plural.

While Owner has made an effort to identify all defined terms with initial caps, the following definitions shall apply regardless of case unless the context otherwise requires:

1. Addenda: Written or graphic instruments issued prior to the opening of Bids, which clarify, correct, or change the bidding requirements or the Contract Documents. Addenda shall not include the minutes of the Pre-Bid Conference and/or Site Visit.
2. Agreement (Document 00 52 00): Agreement is the basic Contract Document that binds the parties to construction Work. Agreement defines relationships and obligations between Owner and Contractor and by reference incorporates Conditions of Contract, Drawings, and Specifications and contains Addenda and all Modifications subsequent to execution of Contract Documents.
3. Alternate: Work added to or deducted from the base Bid, if accepted by Owner.
4. Application for Payment: Written application for monthly or periodic progress or final payment made by Contractor complying with the Contract Documents.
5. Approved Equal: Approved in writing by Owner as being of equivalent quality, utility and appearance.
6. Architect/Engineer: If used elsewhere in the Contract Documents, "Architect/Engineer" shall mean a person (or that person's firm) holding a valid California State Architect's or Engineer's license representing the Owner in the administration of the Contract Documents. Architect/Engineer may be an employee of or an independent consultant to Owner. When Architect/Engineer is referred to within the Contract Documents and not an employee of Owner, Architect/Engineer shall be construed to include employees of Architect/Engineer and/or employees that Architect/Engineer supervises. When the designated Architect/Engineer is an employee of Owner, his or her authorized representatives on the Project will be included under the term Architect/Engineer. If Architect/Engineer is an employee of Owner, Architect/Engineer is the beneficiary of all Contractor obligations to Owner, including without limitation, all releases and indemnities. Architect/Engineer may also be referred to as Architect or Engineer.
7. Asbestos: Any material that contains more than one percent asbestos and is friable or is releasing asbestos fibers into the air above current action levels established by OSHA or Cal/OSHA.
8. Bid: The offer or proposal of the Bidder submitted on the prescribed form(s) setting forth the prices (including, if applicable, maximum prices) for the Work to be performed.
9. Bidder: One who submits a Bid or Proposal.
10. Bidding Documents: All documents comprising the Project Manual (including all documents and Specification Sections listed in Document 00 01 10 [Table of Contents]), including documents supplied for bidding purposes only and Contract Documents.

11. Board: The governing body of the Owner.
12. Business Day: Any Day other than Saturday, Sunday, and the following days that have been designated as holidays by Owner. If a holiday falls on a Saturday, the preceding Friday will be the holiday. If a holiday falls on a Sunday, the following Monday will be the holiday.
 - (a) New Year's Day, January 1;
 - (b) Martin Luther King Jr.'s Birthday, third Monday in January;
 - (c) Presidents' Day, third Monday in February;
 - (d) Cesar Chavez Day, 31st day of March
 - (e) Memorial Day, last Monday in May;
 - (f) Juneteenth, June 19
 - (g) Independence Day, July 4;
 - (h) Labor Day, first Monday in September;
 - (i) Veterans' Day, November 11;
 - (j) Thanksgiving Day, as designated by the President;
 - (k) The Day following Thanksgiving Day;
 - (l) Christmas Eve, December 24
 - (m) Christmas Day, December 25; and
 - (n) Each day appointed by the Governor of California and formally recognized by the Governing Board as a day of mourning, thanksgiving, or special observance.
13. By Owner: Work that will be performed by Owner or its agents at the Owner's expense.
14. By Others: Work that is outside scope of Work to be performed by Contractor under this Contract, which will be performed by Owner, other contractors, or other means.
15. Change Order: A written instrument prepared by Owner and signed by Owner and Contractor, stating their agreement upon all of the following:
 - (a) a change in the Work;
 - (b) the amount of the adjustment in the Contract Sum, if any; and
 - (c) the amount of the adjustment in the Contract Time, if any.
16. City: The City of Olivehurst, unless otherwise specified.
17. Code Inspector: A local or state agency responsible for the enforcement of applicable codes and regulations.
18. Commencement Date: The date on which Contract Time commences, as provided in the Agreement or General Conditions.
19. Concealed: Work not exposed to view in the finished Work, including within or behind various construction elements.
20. Construction Change Directive (CD): A written order prepared and signed by Owner, directing a change in the Work and stating a proposed basis for adjustment, if any, in the Contract Sum or Contract Time, or both.
21. Contract Amount: a change order price, line item price, Contract Sum, or other price assigned to a scope of work.
22. Contract Conditions or Conditions of the Contract: Consists of two parts: General Conditions and Supplemental Conditions.
 - (a) General Conditions are general clauses that are common to the Owner Contracts, including Document 00 72 00 (General Conditions).
 - (b) Supplemental Conditions modify or supplement General Conditions to meet specific requirements for Contract Documents, including without limitation Documents 00 73 01, 00 73 16, 00 73 80 and other Series 00 73 00 Documents.
23. Contract Documents and Contract: Contract Documents and Contract shall consist of the documents identified as the Contract Documents in Document 00 52 00 (Agreement), plus all changes, Addenda, and modifications thereto.
24. Contract Modification: Either:
 - (a) a written amendment to Contract signed by Contractor and Owner; or
 - (b) a Change Order; or
 - (c) a Construction Change Directive; or

- (d) a written directive for a minor change in the Work issued by Owner.
25. Contract Sum: The sum stated in the Agreement and, including authorized adjustments, the total amount payable by Owner to Contractor for performance of the Work and the Contract Documents. The Contract Sum is also sometimes referred to as the Contract Price or the Contract Amount.
26. Contract Time: The number or numbers of Days or the dates stated in the Agreement to achieve Substantial Completion of the Work or designated Milestones; and/or to achieve Final Completion of the Work so that it is ready for final payment and is accepted.
27. Contractor: The person or entity identified as such in the Agreement and referred to throughout the Contract Documents as if singular in number and neutral in gender. The term "Contractor" means the Contractor or its authorized representative.
28. Contractor's Employees: Persons engaged in execution of Work under Contract as direct employees of Contractor, as Subcontractors, or as employees of Subcontractors.
29. County: The County in which the Project is located.
30. Day: One calendar day of 24 hours measured from midnight to the next midnight, unless the word "day" is specifically modified to the contrary.
31. Defective: An adjective which, when modifying the word "Work," refers to Work that is unsatisfactory or unsuited for the use intended, faulty, or deficient, that does not conform to the Contract Documents, or does not meet the requirements of any inspection, reference standard, test or approval referred to in the Contract Documents (including, without limitation, approval of Samples and "or equal" items), or has been damaged prior to final payment (unless responsibility for the protection thereof has been assumed by Owner). Unapproved substitutions are defective. Owner is the judge of whether Work is Defective.
32. Drawings: The graphic and pictorial portions of Contract Documents, wherever located and whenever issued, showing the design, location and dimensions of the Work, generally including plans, elevations, sections, details, schedules, and diagrams.
33. DSA: Division of State Architect, or successor agency.
34. Equal: Equal in opinion of Owner. Burden of proof of equality is responsibility of Contractor.
35. Final Acceptance or Final Completion: Owner's acceptance of the Work as satisfactorily completed in accordance with Contract Documents. Requirements for Final Acceptance/Final Completion include, but are not limited to:
- (a) Final cleaning is completed.
 - (b) All systems having been tested and accepted as having met requirements of Contract Documents.
 - (c) All required instructions and training sessions having been given by Contractor.
 - (d) All Project Record Documents having been submitted by Contractor, reviewed by Owner, and accepted by Owner.
 - (e) All punch list Work, as directed by Owner, having been completed by Contractor.
 - (f) Generally all Work, except Contractor maintenance after Final Acceptance/Final Completion, having been completed to satisfaction of Owner.
36. Force Account: Work directed to be performed without prior agreement as to lump sum or unit price cost thereof, and which is to be billed at cost for labor, materials, equipment, taxes, and other costs, plus a specified percentage for overhead and profit.
37. Exposed: Work exposed to view in the finished Work, including behind louvers, grilles, registers and various other construction elements.
38. Furnish: Supply only, do not install.
39. GMP: Guaranteed Maximum Price.
40. Indicated: Shown or noted on the Drawings.
41. Install: Install or apply only, do not furnish.
42. Latent: Not apparent by reasonable inspection including, without limitation, the inspections and research required as a condition to bidding under Document 00 72 00 (General Conditions).
43. Law: Unless otherwise limited, all applicable laws including without limitation all federal, state, and local laws, statutes, standards, rules, regulations, ordinances, and judicial and administrative decisions.

44. Material: This word shall be construed to embrace machinery, manufactured articles, materials of construction (fabricated or otherwise), and any other classes of material to be furnished in connection with Contract, except where a more limited meaning is indicated by context.
45. Milestone: A principal event specified in Contract Documents relating to an intermediate completion date or time prior to Substantial Completion of all Work.
46. Modification: Same as Contract Modification.
47. Not in Contract or NIC: Work that is outside the scope of Work to be performed by Contractor under Contract Documents.
48. Notice of Completion: Shall have the meaning provided in California Civil Code Section 9202, and any successor statute.
49. Off Site: Outside geographical location of the Project.
50. Owner: Owner is defined in Document 00 52 00 (Agreement).
51. Owner-Furnished, Contractor Installed: Items furnished by Owner at its cost for installation by Contractor at its cost under Contract Documents.
52. Owner's Representative(s): See Document 00 52 00 (Agreement).
53. Partial Utilization: Use by Owner of a substantially completed part of the Work for the purpose for which it is intended (or a related purpose) prior to Substantial Completion of all of the Work.
54. PCBs: Polychlorinated biphenyls.
55. Phase: A specified portion of the Work (if any) specifically identified as a Phase in Document 00 52 00 (Agreement) or Section 01 11 00 (Summary).
56. Product Data: That information (brochures, catalog sheets, manufacturer's cut sheets, etc.) supplied by vendors having technical and commercial characteristics of the supplied equipment or materials and accompanying commercial terms such as warranties, instructions, and manuals.
57. Progress Report: A periodic report submitted by Contractor to Owner with progress payment invoices accompanying progress schedule. See Document 00 72 00 (General Conditions).
58. Progress Schedule: See Section 01 32 00 Progress Schedules and Reports).
59. Project: Total construction of which Work performed under Contract Documents may be whole or part.
60. Project Inspector: The individual who has been duly approved by DSA and hired by Owner to provide continuous inspection of all Project Work.
61. Project Manual: Project Manual consists of Bidding Requirements, Agreement, Bonds, Certificates, Contract Conditions, Drawings, and Specifications.
62. Project Record Documents: All Project deliverables required under the Contract Documents, including without limitation, as built drawings; Installation, Operation, and Maintenance Manuals; and Machine Inventory Sheets.
63. Proposal: A Bid.
64. Provide: Furnish and install.
65. Request for Information (RFI): A document prepared by Contractor requesting information regarding the Project or Contract Documents. The RFI system is also a means for Owner to submit Contract Document clarifications or supplements to Contractor.
66. Request for Proposals (RFP): A document issued by Owner to Contractor whereby Owner may initiate changes in the Work or Contract Time as provided in Contract Documents.
67. Request for Substitution (RFS): A document prepared by Contractor requesting substitution of materials as permitted and to the extent permitted in Contract Documents.
68. RFI-Reply: A document consisting of supplementary details, instructions, or information issued by Owner that clarifies or supplements Contract Documents, and with which Contractor shall comply. RFI-Replies do not constitute changes in Contract Sum or Contract Time except as otherwise agreed in writing by Owner. RFI-Replies will be issued through the RFI administrative system.
69. Samples: Physical examples of materials, equipment, or workmanship that are representative of some portion of the Work and which establish the standards by which such portion of the Work will be judged.

70. Shop Drawings: All drawings, diagrams, illustrations, schedules, and other data or information which are specifically prepared or assembled by or for Contractor and submitted by Contractor to illustrate some portion of the Work.
71. Shown: As indicated on Drawings.
72. Site: The particular geographical location of Work performed pursuant to the Contract Documents.
73. Specifications: The written portion of the Contract Documents consisting of requirements for materials, equipment, construction systems, standards, and workmanship for the Work; performance of related services.
74. Specified: As written in Specifications.
75. Subcontractor: A person or entity that has a direct contract with Contractor to perform a portion of the Work at the Site. The term Subcontractor is referred to throughout the Contract Documents as if singular in number and neutral in gender and means a Subcontractor or an authorized representative of the Subcontractor. The term Subcontractor does not include a separate contractor or subcontractors of a separate contractor.
76. Substantial Completion: The Work (or a specified part thereof) has progressed to the point where, in the opinion of Owner as evidenced by a notice or certificate of Substantial Completion, the Work is sufficiently complete, in accordance with Contract Documents, so that the Work (or specified part) can be utilized for the purposes for which it is intended, and unperformed or incomplete work elements are minor in nature; or if no such certificate is issued, when the Work (or specified part) is complete and ready for final payment as evidenced by written recommendation of Owner for final payment. The terms **“Substantially Complete”** and **“Substantially Completed”** as applied to all or part of the Work refer to Substantial Completion thereof.
77. Supplemental Instruction: A written directive from Owner to Contractor ordering alterations or Modifications that do not result in change in Contract Sum or Contract Time, and do not substantially change Drawings or Specifications.
78. Technical Specifications: Specification Sections included within Division 02 and above.
79. Testing and Special Inspection Agency: An independent entity engaged to inspect and/or test the workmanship, materials, or manner of construction of buildings or portions of buildings, to determine if such construction complies with the Contract Documents and applicable codes.
80. TIE: Time Impact Evaluation; see Section 01 26 00 (Modification Procedures). May also be referred to as Time Impact Analysis (**TIA**).
81. Title 24: California Code of Regulations, Title 24, Part 1 California Building Standards Administrative Code.
82. Note Used
83. Underground Facilities: All pipelines, conduits, ducts, cables, wires, manholes, vaults, tanks, tunnels or other such facilities or attachments, and any encasements containing such facilities that have been installed underground to furnish any of the following services or materials: electricity, gases, chemicals, steam, liquid petroleum products, telephone or other communications, cable television, sewage and drainage removal, traffic or other control systems, or water.
84. Unit Price Work: Shall be the portions of the Work for which a unit price is provided in Document 00 52 00 (Agreement) or Section 01 11 00 (Summary of Work).
85. Weather Station. See Document 00 72 00 (General Conditions) .
86. Work: The entire completed construction, or the various separately identifiable parts thereof, required to be furnished under the Contract Documents within the Contract Time. Work includes and is the result of performing or furnishing labor and furnishing and incorporating materials and equipment into the construction, and performing or furnishing services and furnishing documents, all as required by the Contract Documents including everything shown in the Drawings and set forth in the Specifications. Wherever the word “work” is used, rather than the word “Work,” it shall be understood to have its ordinary and customary meaning.

B. Other Defined Terms

The following terms are not necessarily identified with initial caps; however they shall have the meaning set forth below:

1. Wherever words “as directed,” “as required,” “as permitted,” or words of like effect are used, it shall be understood that direction, requirements, or permission of Owner is intended. Words “sufficient,” “necessary,” “proper,” and the like shall mean sufficient, necessary, or proper in judgment of Owner. Words “approved,” “acceptable,” “satisfactory,” “favorably reviewed,” or words of like import, shall mean approved by, or acceptable to, or satisfactory to, or favorably reviewed by Owner.
2. Wherever the word “may” or “ought” is used, the action to which it refers is discretionary. Wherever the word “shall” or “will” is used, the action to which it refers is mandatory.

PART 2 PRODUCTS – NOT USED

PART 3 EXECUTION – NOT USED

END OF SECTION

DIVISION 1 GENERAL REQUIREMENTS
SECTION 01 45 23
TESTING AND INSPECTION

PART 1 GENERAL

1.01 Section Includes

- A. Contractor's Quality Control.
- B. Quality of the Work.
- C. NOT USED
- D. Inspections and Tests by Serving Utilities.
- E. Inspections and Tests by Manufacturer's Representatives.
- F. Inspections by Independent Testing and Inspection Agency.
- G. Additional Testing and Inspection.

1.02 Contractor's Quality Control

- A. Contractor's Quality Control. Contractor shall develop a Quality Control (**QC**) program to qualify all Work through personal review of the Work, assuring complete and accurate installation of all materials, products and equipment in accordance with the approved Contract Documents. Contractor's QC program shall be staffed with individuals sufficiently learned in specific trade specialties as to recognize any and all deficiencies in the Work. The QC staff shall assure all Work is in accordance with the approved Contract Documents prior to submitting an Inspection Request (**IR**) to Owner, third party, any IOR and/or City Building Official. All aspects of the Work, including product verification, appropriate product installation and application, shall be reviewed by such QC personnel and qualified as meeting the requirements of applicable codes and the approved Contract Documents.
- B. Quality Requirements. Work shall be accomplished in accordance with quality requirements of Drawings and Specifications, including, by reference, all codes, laws, rules, regulations, and standards. When no quality basis is prescribed, the quality and testing procedures shall be in accordance with the best-accepted practices of the construction industry for the locale of the Project, for projects of this type, or standards set by engineering or technical societies (e.g., ASTM or ASHRAE), whichever is more stringent.
- C. Quality Control Personnel. Employ and assign knowledgeable and skilled personnel as necessary to perform quality control functions to ensure that the Work is provided as required.

1.03 Quality of the Work

- A. Quality of Products. Unless otherwise indicated or specified, all products shall be new, free of defects, and fit for the intended use.
- B. Quality of Installation. All Work shall be produced plumb, level, square and true, or true to indicated angle, and with proper alignment and relationship between the various elements, as shown on or required by Contract Documents.
- C. Protection of Completed Work. Take all measures necessary to preserve completed Work free from damage, deterioration, soiling, and staining, until acceptance by Owner.
- D. Standards and Code Compliance and Manufacturer's Instructions and Recommendations. Unless more stringent requirements are indicated or specified, comply with manufacturer's instructions and recommendations, reference standards and building code requirements in preparing, fabricating, erecting, installing, applying, connecting, and finishing Work.

- E. Deviations from Standards and Code Compliance and Manufacturer's Instructions and Recommendations. Secure Owner's advanced written consent. Document and explain all deviations from reference standards and building code research report requirements and manufacturer's product installation instructions and recommendations, including acknowledgement by the manufacturer that such deviations are acceptable and appropriate for the Project.
- F. Verification of Quality. Work shall be subject to verification of quality by Owner in accordance with provisions of the Contract Documents.
1. Cooperate by making Work available for inspection by independent testing and inspection agencies.
 2. Such verification may include mill, plant, shop, or field inspection as required.
 3. Provide access to all parts of the Work, including plants where materials or equipment are manufactured or fabricated.
 4. Provide all information and assistance as required, including that by and from subcontractors, fabricators, materials suppliers and manufacturers, for verification of quality by Owner.
 5. Applicable provisions of the Contract Documents shall govern Contract Modifications, if any, resulting from such verification activities.
- G. Observations by Owner's Consultants. Periodic and occasional observations of Work in progress will be made by Owner and Owner's consultants as deemed necessary to review progress of Work and general conformance with design intent.
- H. Limitations on Inspection, Testing and Observation. Neither employment of independent testing and inspection agency nor observations or tests by Owner and Owner's consultants shall in any manner relieve Contractor of obligation to perform Work in full conformance to all requirements of Contract Documents.
- I. Owner's Acceptance and Rejection of Work. Owner reserves the right to reject all Work not in conformance to the requirements of the Drawings and Specifications, or otherwise defective.
- J. Correction of Defective Work. Defective Work shall be modified, replaced, repaired or redone by the Contractor at no change in Contract Sum or Contract Time.
- K. Acceptance of Defective Work. Acceptance of defective Work, without specific written acknowledgement and approval of Owner, shall not relieve the Contractor of the obligation to correct such Work.
- L. Contract Adjustment for Defective Work. Should Owner determine that it is not feasible or in Owner's interest to require defective Work to be repaired or replaced, an equitable reduction in Contract Sum shall be made by agreement between Owner and Contractor. If equitable amount cannot be agreed upon, a Construction Change Directive will be issued and the amount in dispute resolved in accordance with Document 00 72 00 (General Conditions) Article 12.
- M. Non-Responsibility for Defective Work. Owner and Owner's consultants disclaim any and all responsibility for Work produced not in conformance with the Drawings and Specifications.
- N. Responsibility for Defective Work. Contractor shall have full responsibility for all consequences resulting from defective work, including without limitation all delays, disruptions, extra inspection and correction costs by Contractor and Owner and re-Work, and extra time and costs of all types. Contractor waives excuses for defective work relating to Owner's prior review of Submittals and/or prior failure to notice defective work in place on inspection.
- 1.04 Inspections and Tests by Governing Authorities**
- A. Contractor shall cause all tests and inspections required by governing authorities having jurisdiction to be made for Work under this Contract.

1. Such authorities may include, but are not limited to, the Division of State Architect, Office of Statewide Health Planning Department (**OSHPD**), Public Works Department, Fire Department, and similar agencies.
2. Except as specifically noted, scheduling, conducting and paying for such inspections shall be solely the Contractor's responsibility.

1.05 Inspections and Tests by Serving Utilities

- A. Contractor shall cause all tests and inspections required by serving utilities to be made for Work under this Contract. Scheduling conducting and paying for such inspections shall be solely the Contractor's responsibility.

1.06 Inspections and Tests By Manufacturer's Representatives

- A. Contractor shall cause all tests and inspections specified to be conducted by materials or systems manufacturers to be made. Additionally, all tests and inspections required by materials or systems manufacturers as conditions of warranty or certification of Work shall be made, the cost of which shall be included in the Contract Sum.

1.07 Inspections By Independent Testing and Inspection Agency

- A. Owner will select an independent testing and inspection agency or agencies approved to conduct tests and inspections in accordance with Part 1, Title 24, Section 4-335, California Code of Regulations and as indicated on Drawings, in Specifications and as required by governing authorities having jurisdiction.
- B. Responsibility for time and costs shall be as indicated in schedule below. All time and costs for Contractor's service related to such tests and inspections shall be included in Contract Time and Contract Sum.
- C. Contractor shall notify Owner and Inspector in writing (and, if provided, on inspection request form provided by Owner) and, if directed by Owner, testing and inspection agency, when Work is ready for specified tests and inspections. Contractor shall deliver this written notification at least 48 hours before the requested inspection date.
- D. Contractor will pay or reimburse Owner for all additional charges by testing and inspection agencies and governing authorities having jurisdiction due to the following:
 1. Contractor's failure to properly schedule or notify testing and inspection agency or authorities having jurisdiction.
 2. Changes in sources, lots, or suppliers of products after original tests or inspections.
 3. Changes in means, methods, techniques, sequences, and procedures of construction that necessitate additional testing, inspection, and related services.
 4. Changes in mix designs for concrete and mortar after review and acceptance of submitted mix design.
 5. Contractor submitted requests to change materials or products, which are accepted, but require testing and/or reinspection beyond original design.
- E. NOT USED
- F. Test and Inspection Reports. After each inspection and test, one copy of report shall be promptly submitted to Owner's Representative, Contractor and/or any other consultant Owner designates and any agency having jurisdiction (if required by Code).
 1. Reports shall clearly identify the following:
 - (a) Date issued.
 - (b) Project name and number.
 - (c) Identification of product and Specifications Section in which Work is specified.
 - (d) Name of inspector.
 - (e) Date and time of sampling or inspection.
 - (f) Location in Project where sampling or inspection was conducted.
 - (g) Type of inspection or test.

- (h) Date of test.
 - (i) Results of tests.
 - (j) Comments concerning conformance with Contract Documents and other requirements.
2. Test reports shall indicate specified or required values and shall include a statement addressing whether test results indicate satisfactory performance of products.
 3. Samples taken but not tested shall be reported.
 4. Test reports shall confirm that methods used for sampling and testing conform to specified test procedures.
 5. When requested, testing and inspection agency shall provide interpretations of test results.

G. Contractor Responsibilities in Inspections and Tests.

1. Unless specified otherwise, Contractor shall notify Inspector, Owner's Representative, or any other consultant Owner designates and independent testing and inspection agencies 48 hours in advance of expected time of each test and inspection, and for all other operations requiring inspection and testing services, by submitting Contractor's inspection request in writing (or, if Owner provides a specific form, on that form).
 - (a) When tests or inspections cannot be performed after such notice, reimburse Owner for testing and inspection agency personnel and travel expenses incurred due to Contractor's negligence.
2. Contractor shall deliver to laboratory or designated location, adequate samples of materials proposed to be used that require advance testing, together with proposed mix designs.
3. Contractor shall cooperate with Inspector, Owner's Representative, or any other consultant Owner designates, and Owner's consultants. Provide access to Work areas and off-Site fabrication and assembly locations, including during weekends and after normal Work hours.
4. Contractor shall provide incidental labor and facilities to provide safe access to Work to be tested and inspected, to obtain and handle samples at the Site or at source of products to be tested, and to store and cure test samples.
5. Contractor shall provide, at least 15 Days in advance of first test or inspection of each type, a schedule of tests or inspections indicating types of tests or inspections and their projected scheduled dates.
6. For additional testing requirements reference OPUD Standards and details.

1.08 Additional Testing and Inspection

- A. If initial tests or inspections made by the Inspector or Owner's Representative, or any other consultant Owner designates reveal that materials do not comply with Title 22, Division 4, Chapter 16 – California Water Works Standards or with the Contract Documents, or if Owner has reasonable doubt that materials do not comply with Title 22, Division 4, Chapter 16 – California Water Works Standards or with Contract Documents, additional tests and inspections shall be made as directed.
1. If additional tests and inspections establish that materials comply with Contract Documents, Owner shall pay all costs for such tests and inspections.
 2. If additional tests and inspections establish that materials do not comply with Contract Documents, all costs of such tests and inspections shall be deducted from Contract Sum.
 3. If Work requiring inspection is covered by follow-on or follow-up Work before it is inspected, uncover Work so proper inspections can be performed. All costs of such tests and inspections shall be deducted from Contract Sum.

PART 2 PRODUCTS – NOT USED

PART 3 EXECUTION – NOT USED

DIVISION 1 GENERAL REQUIREMENTS

SECTION 01 50 00

TEMPORARY FACILITIES AND CONTROLS

PART 1 GENERAL

1.01 Summary

- A. Section Includes:
1. Temporary Electricity.
 2. Temporary Communications.
 3. Temporary Water.
 4. Fences.
 5. Protection of Public and Private Property.
 6. Temporary Sanitary Facilities.
 7. Temporary Barriers and Enclosures.
 8. Water Control.
 9. Pollution Control.
 10. Construction Aids.
 11. Erosion Control.
 12. Noise Control.
 13. Traffic Control.
 14. Removal of Temporary Facilities and Controls.

1.02 Temporary Electricity

- A. Contractor shall provide, maintain and pay for electrical power at the Site for construction purposes and for Contractor's and Construction Manager's trailers and any other site offices or trailers required by the Owner in the Contract Documents to be provided by Contractor. Power may be obtained from Owner, but Contractor must provide all necessary wiring and appurtenances for connection to Owner's system and Contractor must coordinate with PG&E or other power utility to install electricity meters to monitor and pay for Contractor's power usage.

1.03 Temporary Communications

- A. Contractor shall provide, maintain and pay for all applicable communications and data services (including without limitation telephone, facsimile, e-mail and internet) to field office commencing at time of Project mobilization, including all installation and connection charges. In addition, the Contractor shall provide, maintain and pay for a high speed internet service (such as cable or DSL) at the Site for both Contractor and Construction Manager's trailers.

1.04 Temporary Water

- A. Contractor shall provide, maintain and pay for all suitable quality water service required for construction operations.
- B. All water required for and in connection with the Work, including without limitation for dust control, shall be furnished by and at the expense of Contractor. Contractor shall be allowed to utilize water from the Owner for domestic uses. Water shall not be provided for dust control or street cleaning. However, Owner does not guarantee availability of this water. There will be no charge to Contractor for water used. Contractor shall furnish all necessary pipes, hoses, nozzles, meters, and tools and perform all necessary labor to use Owner's water. Waste of water will not be permitted. Special hydrant wrenches shall be used for opening and closing fire hydrants; in no case shall pipe wrenches be used for this purpose.

1.05 Additional Temporary Facilities – NOT USED

1.06 Fences

- A. All existing fences affected by the Work shall be maintained by Contractor until Final Completion. Fences which interfere with construction operations shall not be relocated or dismantled until Owner gives written permission to do so, and the period the fence may be left relocated or dismantled has been agreed upon. Where fences must be maintained across the construction easement, adequate gates shall be installed. Gates shall be kept closed and locked at all times when not in use.
- B. On completion of the Work across any tract of land, Contractor shall restore all fences to their original or to a better condition and to their original locations.

1.07 Protection of Public and Private Property

- A. Contractor shall protect, shore, brace, support, and maintain all underground pipes, conduits, drains, and other underground construction uncovered or otherwise affected by its construction operations. All pavement, surfacing, driveways, curbs, walks, buildings, utility poles, guy wires, fences, and other surface structures affected by construction operations, together with all sod and shrubs in yards, parkways, and medians, shall be restored to their original condition, whether within or outside the easement. All replacements shall be made with new materials.
- B. Contractor shall be responsible for all damage to streets, roads, highways, shoulders, ditches, embankments, culverts, bridges, and other public or private property, regardless of location or character, which may be caused by transporting equipment, materials, or workers to or from the Work, Site or any part thereof, whether by Contractor or Subcontractors. Contractor shall make satisfactory and acceptable arrangements with the Owner, or the agency or authority having jurisdiction over the damaged property, concerning its repair or replacement or payment of costs incurred in connection with the damage.
- C. All fire hydrants and water control valves shall be kept free from obstruction and available for use at all times.

1.08 Temporary Sanitary Facilities

- A. Contractor shall provide and maintain required temporary buildings with sanitary toilets for use of all workers. At a minimum, sanitary facilities shall be located at trailer site, staging area, and adjacent to work area.
- B. Sanitary facilities shall be of reasonable capacity, properly maintained throughout the construction period, and obscured from public view to the greatest practical extent. If toilets of the chemically treated type are used, at least one toilet will be furnished for each 20 persons. Contractor shall enforce the use of such sanitary facilities by all personnel at the Site.
- C. Contractor shall comply with all minimum requirements of the Health Department or other public agency having jurisdiction; maintain sanitary facilities in a sanitary condition at all times.
- D. Contractor shall provide temporary sanitary facilities for Campus and Staff during utility interruptions.
- E. Contractor shall keep sanitary facilities free from graffiti.

1.09 Temporary Barriers and Enclosures

- A. Provide barriers to prevent unauthorized entry to construction areas to allow for Owner's use of Site, and to protect existing facilities and adjacent properties from damage from construction operations.
- B. Provide barricades required by governing authorities for public access to existing buildings.
- C. Protect vehicular traffic, stored materials, Site, and structures from damage.

1.10 Water Controls

- A. Grade Site to drain.
- B. Maintain excavations free of water.
- C. Protect Site from puddling or running water.
- D. Provide water barriers as required to protect Site from soil erosion.
- E. Provide for drainage of storm water and such water as may be applied or discharged on the Site in performance of the Work. Drainage facilities shall be adequate to prevent damage to the Work, the Site, and adjacent property.
- F. Clean, enlarge and/or supplement existing drainage channels and conduit as necessary to carry all increased runoff attributable to Contractor's operations. Provide sediment tanks and other features to avoid increased runoff, to protect Owner's facilities and the Work, and to direct water to drainage channels or conduits. Provide ponding as necessary to prevent downstream flooding.

1.11 Pollution Control

- A. Contractor shall prevent the pollution of drains and watercourses by sanitary wastes, sediment, debris, and other substances resulting from construction activities. No sanitary wastes shall be permitted to enter any drain or watercourse other than sanitary sewers. No sediment, debris, or other substance shall be permitted to enter sanitary sewers without authorization of the receiving sanitary sewer service, and all possible Best Management Practices (**BMPs**) shall be taken to prevent such materials from entering any drain to watercourse. Rate of discharge for storm water may not be increased by the Project during or following construction.
- B. Contractor shall comply with required storm water pollution control requirements. The Contractor shall implement BMPs during construction activities as specified in the applicable governing requirements for California Storm Water Best Management Practices Handbook (California Association of Stormwater Quality Agencies (CASQA), 2019). Erosion and sedimentation control practices shall include installation of silt fences, straw wattle, soil stabilization, revegetation, and runoff control to limit increases in sediment in stormwater runoff, including but not limited to, detention basins, straw bales, silt fences, check dams, geofabrics, drainage swales, and sand bag dikes.
- C. In the event that dewatering of excavations is required, Contractor shall obtain the necessary approval and permits for discharge of the dewatering effluent from the local jurisdiction. Contractor shall be responsible for assuring that water quality of such discharge meets the appropriate permit requirements prior to any discharge.

1.12 Construction Aids

- A. Contractor shall furnish, install, maintain, and operate all construction aids required by it and its Subcontractors in the performance of the Work, except as otherwise provided herein. Such construction aids shall include elevators and hoists, cranes, temporary enclosures, swing staging, scaffolding and temporary stairs. Construction aids shall be furnished without charge to the Subcontractors, and all necessary erection, maintenance, and operating personnel shall be included. In the event of conflict, the contractor furnishing the equipment shall determine priorities in the best interest of the Project.

1.13 Erosion Control

- A. Contractor shall prevent soil erosion on the Site and adjacent property resulting from its construction activities to the maximum extent practical, including implementation of Best Management practices. Effective measures shall be initiated prior to the commencement of clearing, grading, excavation, or other operations that will disturb the natural protection.
- B. Work shall be scheduled to expose areas subject to erosion for the shortest possible time, and natural vegetation shall be preserved to the greatest extent practicable. Temporary storage and construction buildings shall be located, and construction traffic routed, to minimize erosion.

Temporary fast-growing vegetation or other suitable ground cover shall be provided as necessary to control runoff.

1.14 Noise Control

- A. When required by OSHA Standards, construction workers shall be provided with ear protection to operate equipment.
- B. Contractor shall take reasonable measures to avoid unnecessary noise. Such measures shall be appropriate for the normal ambient sound levels in the area during working hours. All construction machinery and vehicles shall be equipped with practical sound-muffling devices, and operated in a manner to cause the least noise consistent with efficient performance of the Work. During construction activities on or adjacent to occupied buildings, and when appropriate, Contractor shall erect screens or barriers effective in reducing noise in the building and shall conduct its operations to avoid unnecessary noise which might interfere with the activities of building occupants.
- C. Ensure and provide certification to Owner that all construction equipment and vehicles used for the Work are:
 - 1. Maintained in good mechanical condition
 - 2. Equipped with properly installed engine mufflers

1.15 Traffic Control

- A. All traffic associated with the construction, including without limitation delivery and mail trucks, shall enter the Contractor's access gate and shall use the route indicated in Section 01 11 00 (Summary of Work). Sign types and locations shall be reviewed by the Owner's Representative. Contractor shall provide signs directing construction and delivery traffic to this gate. Construction truck traffic shall be limited to off-peak traffic hours, between the hours of 10:00 a.m. and 4:00 p.m., Monday through Friday, unless other arrangements are made at least 24 hours in advance with Owner's Representative.

1.16 Removal of Temporary Facilities and Controls

- A. Remove temporary utilities, equipment, facilities, and materials prior to final inspection.
- B. Remove underground installations.
- C. Clean and repair damage caused by installation or use of temporary work.
- D. Restore existing facilities used during construction to original condition. Restore permanent facilities used during construction to specified condition.

PART 2 PRODUCTS – NOT USED

PART 3 EXECUTION – NOT USED

END OF SECTION

DIVISION 1 GENERAL REQUIREMENTS

SECTION 01 56 00

SITE SECURITY AND SAFETY

PART 1 GENERAL

1.01 Submittals

- A. See Section 01 33 00 (Submittals).
- B. Site Security.
- C. Safety Program.

1.02 Overview.

- A. Failure to comply with the requirements of this Section will be considered grounds for Owner or its designated representatives to issue an order suspending Work or terminate the Contract for cause.
- B. Owner or its designated representatives may also perform safety inspections, and may issue a written notice ordering Contractor to correct an unsafe act or condition. If Contractor fails to correct the unsafe act or condition within the requested time frame, Owner or its representative may have the condition corrected and bill Contractor for the costs associated with the correction.

1.03 Protection

- A. Contractor shall continuously maintain protection as necessary to protect the Work, as a whole and in part, and adjacent property and improvements from accidents, injuries or damage.
- B. Properly protect the Work:
 - 1. With lights, guard rails, temporary covers and barricades.
 - 2. Enclose excavations with proper barricades.
 - 3. Brace and secure all parts of the Work against storm and accident.
 - 4. Provide such additional forms of protection that may be necessary under existing circumstances.
- C. Contractor shall provide and maintain in good condition all protective measures required to adequately protect the public from hazards resulting from the Work and to exclude unauthorized persons from the Work. When regulated by Building Code, Cal OSHA, or other authority, such legal requirements for protection shall be considered as minimum requirements. Be responsible for the protection in excess of such minimum requirements as required.

1.04 Control of Site

- A. Contractor shall ensure that no alcohol, firearms, weapons, or controlled substance enters or is used at the Site. Contractor shall immediately remove from the Site and terminate the employment of any employee found in violation of this provision.

1.05 Site Security

- A. As part of the Work included within the Contract Price, Contractor shall take and be fully responsible for all reasonably required measures to protect and maintain the security of persons, existing facilities and property at the Site, including without limitation preventing theft, loss, vandalism and improper concealment of personal property of the Owner and all persons lawfully present on the Site, and including times where workers are not present on the Site. Contractor's measures shall include, at a minimum, maintaining a log of all persons entering and leaving the Site and who they represent, what they are delivering and to whom.
- B. No claim shall be made against Owner by reason of any act of an employee or trespasser, and Contractor shall repair all damage to Owner's property resulting from Contractor's failure to provide adequate security measures.

- C. Contractor shall maintain a lock on the construction access gate at all times. Contractor shall appoint one person to let people through the gate and maintain the sign-in/out list, with person's name, company, reason for entering, what they are delivering, time and date. Alternatively, Contractor shall provide a full-time guard at the gate at all times to control access and maintain the sign-in/out list. The sign in/out list shall be available to Owner at any time upon request. If Owner determines that the gate has been left unlocked, Contractor shall if requested by Owner provide a full time guard at no additional expense to the Owner.
- D. Contractor shall supply additional security fencing, barricades, lighting, and other security measures as required to protect and control the Site.

1.06 Safety Program

- A. Within 15 days after Notice to Proceed, Contractor shall submit a Safety Program that has been reviewed and approved by an Industrial Hygienist certified by the American Board of Industrial Hygiene or a Certified Safety Professional. The Safety Program shall include the name, certification number, and certification seal of the Industrial Hygienist or Certified Safety Professional. Comply with the Safety Program and all applicable federal, state, and local regulation codes, rules, law and ordinances.
- B. Receipt and/or review of the Safety Program by Owner, Engineer or Owner's representative shall not relieve Contractor of any responsibility for complying with all applicable safety regulations.
- C. It is essential that Contractor and each Subcontractor implement an effective and vigorous Safety and Health Program to cover their respective portions of the Work. Subject to Contractor's overall responsibility for Project safety, it shall be understood that the full responsibility for providing a safe place to work with respect to their respective portions of the Work rests with Contractor and each individual Subcontractor.
- D. Safety Program components:
 - 1. Injury and Illness Prevention Program (**IIPP**): Conforming to the General Industrial Safety Orders (CCR Title 8, Division 1, Chapter 4, Subchapter 7, Section 3203), and the California Labor Code (Section 6401.7).
 - 2. Site-Specific Safety and Health Plan (**SSHP**): Describing health and safety procedures that shall be implemented during the Work in order to ensure safety of the public and those performing the Work. Follow the guidelines for a SSHP listed in CCR Title 8, Division 1, Chapter 4, Subchapter 7, Section 5192, Item (b)(4) f.
 - 3. Confined Space Program: The Site contains permit- and non-permit-confined spaces. Owner will provide Contractor with any available information regarding permit space hazards, entry operations, and safety information relating to work in the permit spaces as set forth in the General Industrial Safety Orders (CCR Title 8, Division 1, Chapter 4, Subchapter 7, Section 5157). Permit space entry is allowed only through compliance with a permit space program meeting the requirements of Section 5157 of the General Industrial Safety Orders. During entry operations, or at the conclusion of entry operations, verbally notify Engineer of the permit space program followed and of any hazards confronted or created in permit spaces during entry operations.
- E. The wearing of hard hats shall be mandatory at all times for personnel on Site. Supply sufficient hard hats to equip properly all employees and visitors.
- F. Whenever an exposure exists, appropriate personal protective equipment (**PPE**) shall be used by all affected personnel. Supply PPE to all personnel under Contractor's direction.

1.07 Safety Requirements

- A. Standards. Contractor shall maintain the Project in accordance with state and local safety and insurance standards.
- B. Hazards Control. Contractor shall:
 - 1. Store volatile wastes in covered metal containers and remove from premises daily.
 - 2. Prevent accumulation of wastes that create hazardous conditions.

3. Provide adequate ventilation during use of volatile or noxious substances.
- C. Contractor shall conduct cleaning and disposal operations to comply with local ordinances and anti-pollution laws. Contractor shall not:
 1. Burn or bury rubbish or waste material on the Site.
 2. Dispose of volatile wastes such as mineral spirits, oil, or paint thinner in storm or sanitary drains.
 3. Dispose of wastes into streams or waterways.
- D. Contractor shall provide accident information on the forms provided by Contractor. This information shall be provided on the same day as the occurrence of the applicable incident.

1.08 Site Safety Officer

- A. Contractor shall designate one of Contractor's staff as "Site Safety Officer" whose duties shall include the responsibility for enforcing the environmental protection provisions of the Contract Documents including safety and health, the requirements of the Occupational Safety and Health Act, and other applicable federal, state and local standards. Submit for review by Owner Contractor's intended traffic flow plan, security plan, program for temporary structures, housecleaning plan, demolition program, and environmental safety and health plan. After review by Owner, the implementation and enforcement of these plans shall become the responsibility of the Site Safety Officer. Any changes in the plans shall be requested by Contractor through the Site Safety Officer for written concurrence by Owner.
- B. Owner's risk management representative(s) shall be allowed access to accident/injury and illness reports, inspection reports, scheduling and construction meetings, and safety meetings.

1.09 Accidents

- A. The Contractor shall provide and maintain, in accordance with California Labor Code section 6708 and Cal/OSHA requirements, adequate emergency first-aid treatment for its employees and anyone else that may be injured in connection with the work.
- B. The Contractor shall promptly report in writing to Owner all accidents of any nature arising out of, or in connection with, the performance of the work, on or adjacent to the site, which caused death, personal injury, or property damage, giving full details and statements of witnesses. In addition, if death or serious injury or serious damage are caused, the accident shall be reported immediately by telephone or messenger to Owner.
- C. If any claim is made by anyone against the Contractor or any subcontractor on account of any accident, the Contractor shall promptly report the facts in writing to Owner, giving full details of the claim.
- D. Owner's risk management representative(s) shall be allowed access to accident/injury and illness reports, inspection reports, scheduling and construction meetings, and safety meetings.

1.10 Additional Safety Controls

- A. According to industry practices, it is the responsibility of Contractor and Subcontractors of every tier to exercise reasonable care to prevent work-related injuries, property and equipment damage at the Project site, as well as minimize risk to the public and third-party property. Contractor and all Subcontractors shall undertake loss control prevention practices according to those requirements set by federal, state and local laws, statutes and specific project procedures developed for this Project.
- B. Should Owner elect to proceed with an Owner Controlled Insurance Program (**OCIP**), in the event of an accident it will be the responsibility of Contractor and Subcontractors of every tier to see that injured workers or members of the public are given immediate medical treatment and that all appropriate medical and claim forms are filed with the appropriate State Authorities and in accordance with the claim procedures developed for this project by OCIP Administrator.

- C. Should Owner elect to proceed with an OCIP, failure of a Contractor or Subcontractor to submit Safety documents to the OCIP Administrator will result in the Assessment of liquidated damages against the Contractor in the amount specified in the OCIP.
- D. Regardless of the insurance program chosen by the Owner, Contractor and Subcontractors of every tier will be expected to comply with the following safety and loss control requirements:
 - 1. All Subcontractors of any tier shall identify their contact person(s) to Contractor.
 - 2. Contractor and all Subcontractors of any tier Owner procedures regarding dealing with the media.
 - 3. Hard hats will be mandatory as per CAL OSHA Construction Safety orders.
 - 4. All construction employees will be required to be attired in workpants, shirt and appropriate boots or closed toe shoes.
 - 5. No Alcohol will be allowed construction sites at any time.
 - 6. Smoking Policy: Owner's policy is to provide a safe learning and working environment for both students and employees. It is recognized that smoke from cigarettes, pipes and/or cigars is hazardous to health; therefore, it is Owner's intent to provide a smoke-free environment to the greatest extent possible. To achieve this goal, Owner limits smoking on its property to outdoor areas only, at a minimum of 20 feet away from any doorway, entrance to an indoor facility, or fresh air intake vent. Smoking is prohibited in all of Owner's indoor facilities. The sale or distribution of cigarettes or other smoking material is also prohibited.
 - (a) Contractor shall develop and enforce a smoking policy within work site area(s) that is in alignment with Owner's smoking policy. Contractor shall prohibit smoking in existing buildings that are under renovation. Contractor shall prohibit smoking in new buildings under construction no later than when the roof and exterior walls have been installed.
- E. Controlling access to the construction site is a very high priority, and Contractor and Subcontractors of every tier must take whatever preventative measure, such as barriers, fencing, etc., as are outlined in Contract Specifications.
- F. Contractor and Subcontractors of every tier must respond to any Owner complaints about objectionable levels of dust or noise and must provide appropriate abatement as quickly as possible.
- G. Construction personnel may not enter Owner's grounds other than the construction site unless accompanied by Owner personnel, and they are allowed only 'incidental' contact with students. Violations of these requirements by any construction employee will result in a mandatory background check of that employee – including fingerprinting – as required by California law.
- H. Fall protection is mandatory on all projects in accordance with CAL OSHA, OSHA and any other appropriate code.
- I. A site specific Injury and Illness Prevention Program shall be available on site with Contractor. Contractor and Subcontractors of every tier shall abide by this program.
- J. Construction employees may not listen to music, the radio, or podcasts through headphones while working at the job site.
- K. Contractor and Subcontractors of every tier must attend the pre-construction safety meeting.
- L. No sexual reference or preference shall be permitted on any piece of clothing or the hardhat. Any construction employee observed disregarding this policy shall be removed from the job site until further notice.
- M. All construction employees shall park in their designated parking area. Any sticker attached to the employees' vehicle that displays any form of sexual preference or reference shall be removed prior to parking at the site. Each employee will provide their license plate number to Contractor. Any employee disregarding this policy shall be removed from the site until further notice.

- N. Contractor and Subcontractors of every tier shall control employee break time activities to assure cleanup of all soda cans, food wrappers, plastic bottles, and food containers, from break areas. All break areas shall be cleaned immediately after the break and all waste placed in trash receptacles. No glass containers are permitted on the site.
- O. Theft or willful damage to any property of the Owner, faculty, student, or other contractors will be prosecuted fully.
- P. No guns, switchblades, or knives with blades greater than two inches shall be allowed on the job site. Any employee disregarding this policy shall be removed from the site until further notice.
- Q. The Prime Contractor shall assume overall responsibility for project safety compliance.
- R. Contractor and all Subcontractors shall advise those non-English speaking employees in their native language either in a written format or via an interpreter of these policies.
- S. Owner may suspend work at the Project site due to COVID-19 health concerns, even though Contractor may be allowed to proceed with Work based on applicable laws and regulations. Owner may suspend the work for its convenience. Contractor is entitled to a time extension for an Owner Directed Suspension, and the contract amount will be equitably adjusted if and to the extent Contractor incurs increased costs that are Unknown COVID-19 Costs. An **Unknown COVID-19 Cost** is a cost that: (i) is solely attributable to an Unknown COVID-19 Condition; (ii) is reasonable under the circumstances; (iii) is not the result of Contractor's failure to comply with the contract documents or applicable laws and regulations; and (iv) is not the result of a subcontractors' or suppliers' failure to comply with applicable laws and regulations while on the Project Site or in connection with performance of the Work.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION

DIVISION 1 GENERAL REQUIREMENTS

SECTION 01 57 13

TEMPORARY EROSION AND SEDIMENTATION CONTROL

PART 1 - GENERAL

1.01 SUMMARY

- A. Section Includes:
 - 1. Temporary erosion and sedimentation control.
 - 2. Accessories required for a complete installation.
- B. Related Sections:
 - 1. Section 01 50 00, Temporary Facilities and Controls.

1.02 NOT USED

1.03 NOT USED

1.04 SUBMITTALS

- A. Submit in accordance with Section 01 33 00, Submittals and this Paragraph.
- B. Prepare Water Pollution Control Plan
- C. Working drawings and data on proposed silt fences and other geotextiles, including physical properties of geotextile fabric.

1.05 DELIVERY, STORAGE, AND HANDLING

- A. Deliver, handle, and store materials in accordance with recommendations of manufacturer.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. Jute Matting: Provide jute matting consisting of a uniform, open, plain weave of single jute yarn.
 - 1. Yarn: Loosely twisted construction; no variation in thickness by more than 1/2 of its normal diameter.
 - 2. Weave: Provide openings of approximately one square inch.
 - 3. Matting width: 45 inches or more, continuous lengths of minimum 150 feet, minimum weight of 0.9 pounds per square yard.
 - 4. Staples: Minimum 0.1055 inch (aka 12 gauge) or heavier steel wire bent to U shape 2 inches wide.

- a. Length: Minimum 10 inches long unless Owner allows shorter length for hardpan soil conditions.
5. Install jute matting in accordance with manufacturer's recommendations.
- B. Miscellaneous Materials:
 1. Plastic sheeting: Clear polyethylene plastic sheeting at least 10 mils thick, secured with anchor restrainers (gravel filled bags) per detail shown on drawings.
 2. Temporary drainage curbs.
 3. Machine extruded asphalt concrete or concrete temporary drainage curbs.
 4. Silt fences: Construct silt fences of geotextile drainage fabric supported on wood or metal posts.
 5. Temporary Fiber Rolls: Provide fiber rolls with staking per detail shown on drawings.
 6. Temporary concrete washout facility.
 7. Aggregate: Refer to Section 02221, Aggregate Base Courses, for grading requirements for 1-1/2 inch Class 2 aggregate base.

PART 3 - EXECUTION

3.01 GENERAL

- A. Accomplish erosion and sediment control through use of berms, dikes, swales, dams, fiber mats, plastic sheeting, netting, gravel, storm drain inlet protection, slope drains, sediment fences, and other sediment barriers; gravel construction entrances; and other erosion control devices or methods.
- B. Coordinate temporary pollution control provisions with permanent erosion control features specified elsewhere in the contract documents to the extent practicable to assure economical, effective, and continuous erosion control throughout the construction and post-construction period.
- C. Architect may limit surface area of erodible earth material exposed by clearing, grubbing, excavation, borrow, embankment, and fill operations.
 1. Provide immediate, permanent or temporary pollution control measures to prevent contamination of adjacent streams or other watercourses, lakes, ponds, or other areas of water impoundment.
 2. Work may involve construction of temporary berms, dikes, dams, sediment basins, and slope drains; use of temporary mats; or other control devices or methods as necessary to control erosion.
- D. Construct facilities required for clearing, grading, and land alteration activities, to ensure that sediment-laden water does not enter drainage systems or violate applicable water standards.
- E. Permanent Features:

1. Incorporate permanent erosion control features at earliest practicable time. Use temporary pollution control measures to correct unforeseen conditions that develop during construction, to provide measures that are needed prior to installation of permanent pollution control features, or to temporarily control erosion that develops during normal construction.
2. Where erosion interferes with clearing and grubbing operations, schedule and perform work so that grading operations and permanent erosion control features can follow immediately; otherwise, provide temporary erosion control measures between successive construction stages.

F. Areas of Work:

1. Limit the area of clearing, grubbing, excavation, borrow, and embankment operations in progress commensurate with progress. Should seasonal limitations result in unrealistic coordination of operations, take temporary erosion control measures immediately.
2. Flag boundaries of clearing limits prior to construction.
 - a. Do not disturb or permit disturbance of ground beyond flagged boundary.
 - b. Maintain flagging for duration of work.
3. Temporary soil erosion and sediment control may include construction work outside right of way where work is necessary as a result of project construction such as borrow pit operations, haul roads, and equipment storage sites.

G. Maintenance:

1. Maintain erosion control features installed, including replacement and upgrading of facilities when needed, until work is completed and notice of Final Acceptance issued.
2. Maintain catch basins (inlets with sumps or inverted siphons) so that not more than one foot sediment is allowed to accumulate within a trap (or sump).
 - a. Clean catch basins and storm drains prior to paving and prior to Substantial Completion.
 - b. Remove sediment. Do not flush sediment-laden water into downstream system.
3. Keep paved areas clean for the duration of the project.
4. Measures in addition to those indicated may be required.
5. Do not permit more than a one-foot depth of sediment to accumulate behind a silt fence.
 - a. Remove sediment or regrade it into slopes, and repair and reestablish silt fences as needed.
6. Remove silt fences in entirety when no longer required. Fences are required until uphill area has been permanently stabilized.

7. Remove pipes, end sections, drainage curbs, silt fences, and other materials from temporary erosion control devices; those not incorporated into permanent work become property of Contractor.
- H. Water Pollution Control Plan:
 1. Perform Work in such a manner so as to execute and comply with Water Pollution Control Plan.

3.02 MATTING

- A. Place matting flat in single thickness strips paralleling direction of probable water flow.
- B. Lap multiple strips of jute, or coconut matting, in shingle fashion in accordance with manufacturers' recommendations.
- C. Overlapping of adjacent strips of excelsior matting is not required.
- D. Place matting in contact with soil at each point and secure with staples.

3.03 STORM DRAIN INLET PROTECTION

- A. Storm drain inlet protection must prevent sediment from entering storm drain systems prior to permanent stabilization of disturbed areas.
- B. Use storm drain inlet protection:
 1. Where storm drain inlets are operational before permanent stabilization of disturbed drainage area.
 2. Adjacent to and immediately downhill of utility type construction in existing paved areas with catch basin drainage.
 3. When cleaning streets.
- C. Use berms when required to direct drainage to flow through filters and prevent bypassing of inlets.
- D. Do not permit more than one-foot depth of sediment to accumulate against storm drain inlet protection.
 1. Remove sediment and restore inlet protection as needed to maintain sediment trapping and filtering capability.

3.04 TEMPORARY EROSION BLANKETS

- A. Use temporary erosion blankets to provide immediate protection and physical stabilization of disturbed soils and when vegetative cover cannot be achieved.
- B. Use temporary erosion blankets on areas of steep slopes (greater than 50 percent) and areas of moderate slope that are prone to erosion, particularly during wet weather.
- C. Use erosion blankets on level areas and on slopes up to 2:1 slope.
 1. Where soil is highly erodible, use netting only in conjunction with organic mulch.

2. Apply blanket to be in complete contact with soil to prevent erosion beneath it.
3. Securely anchor erosion blankets to slope in accordance with manufacturer's recommendations.

3.05 TEMPORARY SILT FENCES

- A. Use temporary silt fence to reduce the transport of sediment from construction site by providing temporary physical barrier to sediment and reducing runoff velocities.
 1. Do not install silt fences across streams.
- B. Construct temporary silt fences:
 1. Downslope below disturbed areas where runoff may occur as sheet runoff.
 2. At toe of soil stockpiles.
 3. At downstream side of grade breaks exceeding 20 percent.
 4. Following discharge from sediment trap or pond.
- C. Provide maximum sheet or overland flow path length to silt fence.
- D. Select silt fence system to functions as indicated.
- E. Construct silt fences along contours where feasible.
- F. Install manufactured sediment control fences in accordance with manufacturer's recommendations.

3.06 TEMPORARY SLOPE DRAINS

- A. Provide temporary slope drains consisting of a waterproof drainage structure to carry surface water down embankment slopes with a minimum of erosion.
 1. Install plastic or metal drains with end section pipe stub and elbow sections at top of each slope drain with minimum 12 inch diameter metal.
 2. Extend temporary slope drains along the embankment as height of embankment increases.
 3. Direct water into drains by means of temporary earth berms at top of embankment slopes as indicated on drawings.
 4. Install temporary drainage curbs on staged construction surface to direct water to temporary drains until construction of permanent drainage structures is completed, at which time the temporary drainage curb and the temporary slope drains are removed.

3.07 GRAVEL CONSTRUCTION ENTRANCES

- A. Use gravel construction entrances to reduce transport of mud, dirt, rocks, and other matter onto roads by motor vehicles or storm water runoff by constructing a stabilized pad of gravel at entrances and exits to construction sites.

- B. Construct gravel construction entrances at construction sites at point where traffic is leaving site and moving directly onto public roads, other paved areas, or other approved access points.
 - 1. Provide construction conforming to details shown on drawings.
 - 2. Place geotextile under gravel.
- C. Provide clean pit run gravel or aggregate specified in Section 02221, Aggregate Base Courses.
- D. Provide gravel pad at least 8 inches thick and 50 feet in length.
 - 1. Width: Full width of vehicle ingress and egress area.
 - 2. Add gravel periodically as needed to maintain proper function of the pad.
- E. If gravel pad does not adequately remove dirt and mud from vehicle wheels to prevent mud and dirt tracking off site, take additional measures.
 - 1. Additional measures will include hosing off wheels before vehicles leave site or other construction techniques or work operation modifications.
 - 2. Perform wheel washing on gravel pad and drain wash water through silt trapping structure prior to leaving construction site.

PART 4 - MEASUREMENT AND PAYMENT

4.01 MEASUREMENT

- A. No separate measurement will be made for the Work of this Section.

4.02 PAYMENT

- A. Payment for the work of this Section will be included in lump sum payment(s) for the applicable building or facility in accordance with Schedule of Values.

END OF SECTION

DIVISION 1 GENERAL REQUIREMENTS

SECTION 01 60 00

PRODUCT REQUIREMENTS

PART 1 GENERAL

1.01 Section includes

- A. Products.
- B. Product Options and Substitutions.
- C. Product Delivery Requirements.
- D. Shipping Requirements.
- E. Product Storage and Handling Requirements.

1.02 Products

- A. Products: Term includes new material, machinery, components, equipment, fixtures, and systems forming the Work. Term does not include machinery and equipment used for preparation, fabrication, conveying and erection of the Work. Products may also include existing materials or components required for reuse.
- B. Contractor shall not use materials and equipment removed from existing premises, except as specifically permitted by the Contract Documents.
- C. For similar components, Contractor shall provide interchangeable components of the same manufacturer.
- D. Tabulate products by Specification Section number and title.
- E. For products specified only by reference standards, list each such product:
 - 1. Name and address of manufacturer.
 - 2. Trade name.
 - 3. Model or catalog designation.
 - 4. Manufacturer's data:
 - (a) Reference standards.
 - (b) Performance test data.

1.03 Product Options and Substitutions

- A. Summary. This Paragraph 1.03 describes procedures for selecting products and requesting substitutions of unlisted materials in lieu of materials named in the Specifications or approved for use in Addenda that were not already the subject of a Document 00 63 25 (Substitution Request Form) submittal as provided in Document 00 21 13 (Instructions to Bidders). Time periods provided in Document 00 21 13 are mandatory.
- B. All substitution requests must be made by using Document 00 63 25 (Substitution Request Form), regardless of when requested.
- C. Contractor's Options.
 - 1. For products specified only by reference standard: Select any product meeting that standard.
 - 2. For products specified by naming one or more products or manufacturers:
 - (a) Select products of any named manufacturer meeting specifications.
 - (b) If product becomes unavailable due to no fault of Contractor, submit Request for Substitution (**RFS**), including all information contained in this Section 01 60 00 (Product Requirements) and a fully executed Document 00 63 25 (Substitution Request Form), but using the term "Contractor" each place the term "Bidder" or "Proposer" appears in that form.

D. Substitutions.

1. Except as provided in Document 00 21 13 (Instructions to Bidders) with respect to “or equal” items, Owner will consider Contractor’s substitution requests only when product becomes unavailable due to no fault of Contractor, or if the product specified no longer complies with local regulations or laws.
2. Catalog numbers and specific brands or trade names followed by the designation “or approved equal” are used in conjunction with material and equipment required by the Specifications to establish the standard of quality, utility, and appearance required. Substitutions which are equal in quality, utility, and appearance to those specified may be accepted subject to the following provisions.
 - (a) Failure of Contractor to submit proposed substitutions for approval in the manner described above and within the time prescribed shall be sufficient cause for disapproval by Owner or the Architect of any substitutions otherwise proposed.
 - (b) Such acceptance shall not relieve Contractor from complying with the requirements of the Drawings and Specifications.
 - (c) Wherever more than one manufacturer’s product is specified, the first-named product is the basis for the project design and the use of alternative named manufacturer’s products or substitutes may require modifications in the project design and construction. If such alternatives are proposed by Contractor and are favorably reviewed by Architect, Contractor shall be responsible for all costs of any changes resulting from Contractor’s proposed substitutions which affect other parts of the Work, including the cost of Architect’s additional services, testing, permits, etc. thereby made necessary.
 - (d) If a request for substitution occurs after the period specified in Document 00 21 13, the substitution may be reviewed at the sole discretion of Owner and Architect, and the costs of such review, as approved by Owner, shall be borne by Contractor and will be deducted from the Contract Sum.
 - (e) Requests for review of proposed substitute items will not be accepted from anyone other than Contractor. The RFS shall state the extent, if any, to which the evaluation and acceptance of the proposed substitute will prejudice Contractor’s achievement of Substantial Completion on time, and whether or not acceptance of the substitute for use in the Work will require a change in any of the Contract Documents (or in the provisions of any other direct contract with Owner for work on the Project).
3. Contractor shall submit separate RFS and Document 00 63 25 (five copies each) for each product and support each request with:
 - (a) Product identification.
 - (b) Manufacturer’s literature.
 - (c) Samples, as applicable.
 - (d) Name and address of similar projects on which product has been used, and dates of installation.
 - (e) Name, address, and telephone number of manufacturer’s representative or sales engineer.
 - (f) For construction methods: Detailed description of proposed method; drawings illustrating methods.
4. Where required, Contractor shall itemize a comparison of the proposed substitution with product specified and list significant variations including, but not limited to dimensions, weights, service requirements, and functional differences. If variation from product specified is not pointed out in submittal, variation will be rejected even though submittal was favorably reviewed. Identify all variations of the proposed substitute from that specified in the RFS and indicate available maintenance, repair, and replacement service.
5. Contractor shall state whether the substitute will require a change in any of the Contract Documents (or provisions of any other direct contract with Owner for work on the Project) to adapt the design of the proposed substitute, and whether or not incorporation or use of

the substitute in connection with Work is subject to payment of any license fee or royalty. Submit data relating to changes in construction schedule.

6. Contractor shall include accurate cost data comparing proposed substitution with product and amount of net change in Contract Sum including, but not limited to, an itemized estimate of all costs or credits that will result directly or indirectly from acceptance of such substitute, including costs of redesign and claims of other contractors affected by the resulting change, all of which will be considered by Owner in evaluating the proposed substitute. Owner may require Contractor to furnish additional data about the proposed substitute.
7. Owner will not consider substitutions for acceptance (or, in Owner's sole discretion, Owner may make Contractor solely responsible for all resulting costs, expenses and other consequences) when a substitution:
 - (a) Results in delay meeting construction Milestones or completion dates.
 - (b) Is indicated or implied on submittals without formal request from Contractor.
 - (c) Is requested directly by Subcontractor or supplier.
 - (d) Acceptance will require substantial revision of Contract Documents.
 - (e) Disrupts Contractor's job rhythm or ability to perform efficiently.
8. Substitute products shall not be ordered without written acceptance of Owner.
9. Owner will determine acceptability of proposed substitutions and reserve right to reject proposals due to insufficient information.
10. Accepted substitutions will be evidenced by a Change Order. All Contract Documents requirements apply to Work involving substitutions.

E. Contractor's Representation and Warranty.

1. Contractor's RFS constitute a representation and warranty that Contractor.
 - (a) Has investigated proposed product and determined that it meets or exceeds, in all respects, specified product.
 - (b) Will provide the same warranty for substitution as for specified product.
 - (c) Will coordinate installation and make other changes that may be required for Work to be complete in all respects.
 - (d) Waives claims for additional costs which may subsequently become apparent.
 - (e) Will compensate Owner for additional redesign costs associated with substitution.
 - (f) Will be responsible for Construction Schedule slippage due to substitution.
 - (g) Will be responsible for Construction Schedule delay due to late ordering of available specified products caused by requests for substitution that are subsequently rejected by Owner.
 - (h) Will compensate Owner for all costs; including extra costs of performing Work under Contract Documents, extra cost to other contractors, and any claims brought against Owner, caused by late requests for substitutions or late ordering of products.

F. Owner's Duties. Owner will:

1. Review Contractor's RFS with reasonable promptness.
2. Notify Contractor in writing of decision to accept or reject requested substitution.

G. Administrative Requirements.

1. Specified products, materials, or systems for Project may include architectural or engineering or on-file standards required by the regulatory agency. Contractor's substitution of products, materials or systems may require additional architectural or engineering, testing, reviews, approvals, assurances, or other information for compliance with regulatory agency requirements or both. Contractor shall provide all agency approvals or other additional information required and pay additional costs for required Owner services made necessary by the substitution at no increase in Contract Sum or Contract Time, and as a part of substitution proposal.

1.04 Product Delivery Requirements

- A. Contractor shall:
1. Deliver products in accordance with manufacturer's instructions.
 2. Promptly inspect shipments to assure that products comply with requirements, quantities are correct, and products are undamaged.
- B. Preparation for Shipment. All equipment shall be suitably packaged to facilitate handling and to protect against damage during transit and storage. All equipment shall be boxed, crated, or otherwise completely enclosed and protected during shipment, handling, and storage. All equipment shall be protected from exposure to the elements and shall be kept dry at all times.
1. Painted and coated surfaces shall be protected against impact, abrasion, discoloration, and other damage. Painted and coated surfaces which are damaged prior to acceptance of equipment shall be repainted to the satisfaction of Owner.
 2. Grease and lubricating oil shall be applied to all bearings and similar items.
- C. Shipping. Before shipping each item of equipment shall be tagged or marked as identified in the delivery schedule or on the Shop Drawings. Complete packing lists and bills of material shall be included with each shipment.

1.05 Product Storage and Handling Requirements

- A. Contractor shall:
1. Store products only in staging area per provisions of Section 01 11 00 (Summary of Work).
 2. Handle, store, and protect products in accordance with manufacturer's instructions, with seals and labels intact and legible.
 3. Store sensitive products in weather-tight, climate-controlled enclosures.
 4. For exterior storage of fabricated products, place on appropriate supports, above ground.
- B. Contractor shall also:
1. Cover products subject to deterioration with impervious sheet covering. Provide ventilation to avoid condensation.
 2. Store loose granular materials on solid flat surfaces in a well-drained area.
 3. Provide equipment and personnel to store products by methods to prevent soiling, disfigurement, or damage.
 4. Arrange storage of products to permit access for inspection.
 5. Periodically inspect to assure products are undamaged and are maintained under specified conditions.
- C. Without limiting the foregoing:
1. Contractor shall bear the responsibility for delivery of equipment, spare parts, special tools, and materials to the Site and shall comply with the requirements specified herein and provide required information concerning the shipment and delivery of the materials specified in Contract Documents. These requirements also apply to any sub-suppliers making direct shipments to the Site. Acceptance of the equipment shall be made only after it is installed, tested, placed in operation and found to comply with all the specified requirements.
 2. All items shall be checked against packing lists immediately on delivery to the Site for damage and for shortages. Damage and shortages shall be remedied with the minimum of delay.
 3. No metalwork (miscellaneous steel shapes and reinforcing steel) shall be stored directly on the ground. Masonry products shall be handled and stored in a manner to hold breakage, chipping, cracking, and spalling to a minimum. Cement, lime, and similar products shall be stored off the ground on pallets and shall be covered and kept completely dry at all times. Pipe fittings and valves may be stored out of doors, but must

- be placed on wooden blocking. PVC pipe, geomembranes, plastic liner, and other plastic materials shall be stored off the ground on pallets and protected from direct sunlight.
4. Electrical equipment, and all equipment with antifriction or sleeve bearings shall be stored in weathertight structures maintained at a temperature above 60°F. Electrical equipment, controls, and insulation shall be protected against moisture and water damage. All space heaters furnished in equipment shall be connected and operated continuously.
 5. Equipment having moving parts such as gears, bearings, and seals, shall be stored fully lubricated with oil, grease, etc., unless otherwise instructed by the manufacturer. Manufacturer's storage instructions shall be carefully followed by Contractor.
 6. When required by the equipment manufacturer, moving parts shall be rotated a minimum of twice a month to ensure proper lubrication and to avoid metal to metal "welding". Upon installation of the equipment, Contractor shall, at the discretion of Owner, start the equipment at one-half load for an adequate period of time to ensure that the equipment does not deteriorate from lack of use.
 7. When required by the equipment manufacturer, lubricant shall be changed upon completion of installation and as frequently as required thereafter during the period between installation and acceptance. New lubricants shall be put into the equipment by Contractor at the time of acceptance.
 8. Equipment and materials shall not show any pitting, rust, decay, or other deleterious effects of storage when installed in the Work.
 9. In addition to the protection specified for prolonged storage, the packaging of spare units and spare parts shall be for export packing and shall be suitable for long-term storage in a damp location. Each spare item shall be packed separately and shall be completely identified on the outside of the container.
- D. Handling. Stored items shall be laid out to facilitate their retrieval for use in the Work. Care shall be taken when removing the equipment for use to ensure the precise piece of equipment is removed and that it is handled in a manner than does not damage the equipment.

PART 2 PRODUCTS - NOT USED.

PART 3 EXECUTION - NOT USED.

END OF SECTION

DIVISION 1 GENERAL REQUIREMENTS

SECTION 01 74 00

CLEANING AND WASTE MANAGEMENT

PART 1 GENERAL

1.01 Section Includes:

- A. Progress Cleaning.
- B. Final Cleaning.

1.02 Progress Cleaning

- A. Contractor shall perform **daily** cleaning to ensure that any streets and other Owner and public properties are maintained free from accumulation of waste materials, dust, mud, and debris.
- B. Where required, Contractor shall wet down surfaces to lay dust and prevent the blowing of dust to nearby residences or public properties.
- C. Contractor shall keep all streets clean and free of dust, mud, and debris resulting from Contractor's operations. Daily cleanup throughout the job will be necessary as Contractor progresses with Work, but extra attention to cleanup shall be made prior to weekends and holidays. Without limiting the foregoing, Contractor shall remove trench spoil along traveled ways daily; grade and vacuum broom surfaces initially where applicable and later water flush with high-pressure sprays, being careful to avoid downstream contamination.
- D. All dust, mud, spoils, and construction debris shall be removed daily from all roadways, ditches, shoulders, and private property (fills or spoils placed on private property at private property owner's written request excepted).
- E. Disposal of Materials:
 - 1. As part of the scope of Work included within the Contract Sum, Contractor shall be fully responsible for disposing of all construction debris, dirt and spoils resulting from the Work.
 - 2. All waste materials, debris, dirt and rubbish shall be disposed of at sites to be chosen by Contractor in accordance with applicable local, state, and federal regulations.
 - 3. Contractor is cautioned that County and cities within the County have regulations governing the disposal of rubble, broken pavement, and similar materials.
 - 4. Contractor shall become familiarized with the requirements of the agency having jurisdiction over any contemplated disposal site and shall comply with all such requirements.
- F. Contractor will estimate and report to the Owner, an estimate of quantities (e.g. tonnage) of waste materials disposed of for compliance with AB75. Reporting requirements include: the nature of materials, destination, volume and tonnage.
- G. All excess soil from performance of Work shall be disposed at sites to be chosen by Contractor in accordance with applicable local, state, and federal regulations. If Contractor elects to dispose of soil on any private property, prior to any dumping, a letter allowing such dumping shall be obtained from the property owner and presented to Owner. Contractor is advised that the property owner is required to obtain a fill permit from the applicable government agency(ies). In addition, placement of fill in wetland areas is subject to permit procedures of the US Army Corps of Engineers. At the completion of Work, a letter from each affected property owner will be required releasing Contractor, County, Owner and any Owner consultant from future liability.
- H. If Contractor does not properly clean the Site, in Owner's opinion, then Owner shall have the option of using outside equipment to perform the cleanup and such cost will be withheld from the Contract Sum.

1.03 Final Cleaning

- A. Contractor shall execute final cleaning prior to final inspection, using only properly skilled workers.
- B. Remove grease, dust, dirt, stains, labels, fingerprints, and other foreign materials from exposed interior and exterior finished surfaces.
- C. Repair, patch, and touch up marred surfaces to match adjacent finishes.
- D. Clean interior and exterior surfaces exposed to view; remove temporary labels, stains and foreign substances, polish transparent and glossy surfaces, vacuum carpeted and soft surfaces.
- E. Clean equipment and fixtures to a sanitary condition, clean or replace filters of mechanical equipment operated during construction, clean ducts, blowers and coils of units operated without filters during construction.
- F. Clean Site; mechanically sweep paved areas.
- G. Remove waste and surplus materials, rubbish, and construction facilities from Site.

PART 2 PRODUCTS – NOT USED

PART 3 EXECUTION – NOT USED

END OF SECTION

DIVISION 1 GENERAL REQUIREMENTS

SECTION 01 77 00

CONTRACT CLOSEOUT

PART 1 GENERAL

1.01 Summary

- A. Section describes requirements and procedures for:
 - 1. Removal of Temporary Construction Facilities
 - 2. Substantial Completion
 - 3. Equipment and Systems
 - 4. Final Completion
 - 5. Final Cleaning
 - 6. Close Out
 - 7. Warranties
 - 8. Release of Claims
 - 9. Fire Inspection Coordination
 - 10. Building Inspection Coordination

1.02 Substantial Completion

- A. Removal of Temporary Construction Facilities and Project Cleaning.
 - 1. Prior to Substantial Completion inspection: remove temporary materials, equipment, services, and construction; clean all areas affected by the Work; clean and repair damage caused by installation or use of temporary facilities; restore permanent facilities used during construction to specified condition.
- B. Equipment and Systems.
 - 1. Prior to Substantial Completion, Contractor shall start up, run for periods prescribed by Owner, operate, adjust and balance all manufactured equipment and Project systems, including but not limited to, mechanical, electrical, safety, fire, and controls.
 - 2. Demonstrate that such equipment and systems conform to contract standards and manufacturer's guarantees. Where applicable, use testing protocols specified, and if the contract is silent, then consistent with manufacturer's recommendations and industry standards.
- C. Procedure for Substantial Completion.
 - 1. When Contractor considers Work or designated portion of the Work as Substantially Complete, submit written notice to Owner, with list of items remaining to be completed or corrected and explanation of why such items do not prevent Owner's beneficial use and occupancy of the Work for its intended purposes. Within reasonable time, Owner will inspect to determine status of completion.
 - 2. Should Owner determine that Work is not Substantially Complete, Owner will promptly notify Contractor in writing, listing all defects and omissions. Contractor shall remedy deficiencies and send a second written notice of Substantial Completion. Owner will reinspect the Work. If deficiencies previously noted are not corrected on reinspection, then pay the cost of the reinspection.
 - 3. When Owner concurs that Work is Substantially Complete, Owner will issue a written notice or certificate of Substantial Completion, accompanied by Contractor's list of items to be completed or corrected as verified by Owner.
 - 4. Manufactured units, equipment and systems that require startup must have been started up and run for periods prescribed by Owner before a Certificate before a notice or certificate of Substantial Completion will be issued.

5. A punch list examination will be performed upon Substantial Completion. One follow-up review of punch list items for each discipline will be provided. If further Site visits are required to review punch list items due to incompleteness of the Work by Contractor, Contractor will reimburse Owner for costs associated with these visits.

1.03 Final Completion

A. Requirements.

1. Final Completion occurs when Work meets requirements for Owner's Final Acceptance.

B. Procedure.

1. When Contractor considers Work is Finally Complete, submit written certification that:
 - (a) Contractor has inspected Work for compliance with Contract Documents, and all requirements for Final Acceptance have been met.
 - (b) Except for Contractor maintenance after Final Acceptance, Work has been completed in accordance with Contract Documents and deficiencies listed with Certificate of Substantial Completion have been corrected. Equipment and systems have been tested in the presence of Owner, and are operative.
 - (c) Project Record Documents are completed and turned over to Owner as required by Section 01 78 39, and Work is complete and ready for final inspection.
2. In addition to submittals required by Contract Documents, provide submittals required by governing authorities and submit final statement of accounting giving total adjusted Contract Sum, previous payments, and sum remaining due.
3. Should Owner determine that Work is incomplete or Defective, Owner promptly will so notify Contractor, in writing, listing the incomplete or Defective items. Contractor shall promptly remedy the deficiencies and notify the Owner when it is ready for reinspection.

C. Final Adjustments of Accounts.

1. Contractor shall submit a final statement of accounting to Owner, showing all adjustments to the Contract Sum and complete and execute Document 00 65 30 (Agreement and Release of Any and All Claims).
2. If so required, Owner shall prepare a final Change Order for submittal to Contractor, showing adjustments to the Contract Sum that were not previously made into a Contract Modification.

D. Warranties.

1. Execute Contractor's Submittals and assemble warranty documents, and Installation, Operation, and Maintenance Manuals, executed or supplied by Subcontractors, suppliers, and manufacturers. Provide table of contents and assemble in 8½ inches by 11 inches three-ring binder with durable plastic cover, appropriately separated and organized. Assemble in Specification Section order.
2. Submit material prior to final Application for Payment. For equipment put into use with Owner's permission during construction, submit within 14 Days after first operation. For items of Work delayed materially beyond Date of Substantial Completion, provide updated Submittal within 14 Days after acceptance, listing date of acceptance as start of warranty period.
 - (a) Warranties are intended to protect Owner against failure of Work and against deficient, defective and faulty materials and workmanship, regardless of sources.
 - (b) Limitations: Warranties are not intended to cover failures that result from the following:
 - (i) Unusual or abnormal phenomena of the elements
 - (ii) Vandalism after Substantial Completion
 - (iii) Insurrection or acts of aggression including war
 - (c) Related Damages and Losses: Remove and replace Work which is damaged as result of defective Work, or which must be removed and replaced to provide access for correction of warranted Work.

- (d) Warranty Reinstatement: After correction of warranted Work, reinstate warranty for corrected Work to date of original warranty expiration or to a date not less than one year after corrected Work was done, whichever is later.
 - (e) Replacement Cost: Replace or restore failing warranted items without regard to anticipated useful service lives.
- 3. Warranty Forms: Submit drafts to Owner for approval prior to execution. Forms shall not detract from or confuse requirements or interpretations of Contract Documents. Warranty shall be countersigned by manufacturers. Where specified, warranty shall be countersigned by Subcontractors and installers.
 - 4. Rejection of Warranties: Owner reserves right to reject unsolicited and coincidental product warranties that detract from or confuse requirements or interpretations of Contract Documents.
 - 5. Term of Warranties: For materials, equipment, systems, and workmanship, warranty period shall be one year minimum from date of Final Completion of entire Work except where:
 - (a) Detailed Specifications for certain materials, equipment or systems require longer warranty periods.
 - (b) Materials, equipment or systems are put into beneficial use of Owner prior to Final Completion as agreed to in writing by Owner.
- E. Warranty of Title.
- 1. No material, supplies, or equipment for Work under Contract shall be purchased subject to any chattel mortgage, security agreement, or under a conditional sale or other agreement by which an interest therein or any part thereof is retained by seller or supplier. Contractor warrants good title to all material, supplies, and equipment installed or incorporated in Work and agrees upon completion of all Work to deliver premises, together with improvements and appurtenances constructed or placed thereon by Contractor, to Owner free from any claim, liens, security interest, or charges, and further agrees that neither Contractor nor any person, firm, or corporation furnishing any materials or labor for any Work covered by Contract shall have right to lien upon premises or improvement or appurtenances thereon. Nothing contained in this paragraph, however, shall defeat or impair right of persons furnishing materials or labor under bond given by Contractor for their protection or any rights under law permitting persons to look to funds due Contractor in hands of Owner.

1.04 Final Cleaning

- A. Contractor shall comply with all applicable requirements in Section 01 74 00 (Cleaning and Waste Water Management).

1.05 Project Record Documents

- A. Maintain at Project site, available to Owner and Construction Manager, one (1) copy of the Contract Documents, shop drawings and other submittals, in good order.
 - 1. Mark and record field changes and detailed information contained in submittals and change orders.
 - 2. Record actual depths, horizontal and vertical location of underground pipes, duct banks and other buried utilities. Reference dimensions to permanent surface features.
 - 3. Identify specific details of pipe connections, location of existing buried features located during excavation, and the final locations of piping, equipment, electrical conduits, manholes, and pull boxes.
 - 4. Identify location of spare conduits including beginning, ending and routing through pull boxes, and manholes. Record spare conductors, including number and size, within spare conduits, and filled conduits.
 - 5. Provide schedules, lists, layout drawings, and wiring diagrams.

6. Make annotations with erasable colored pencil conforming to the following color code:

Additions:	Red
Deletions:	Green
Comments	Blue
Dimensions:	Graphite

- B. Maintain documents separate from those used for construction.
1. Label documents "RECORD DOCUMENTS."
- C. Keep documents current.
1. Record required information at the time the material and equipment is installed and before permanently concealing.
- D. Deliver record documents with transmittal letter containing date, Project title, Contractor's name and address, list of documents, and signature of Contractor.
- E. Record documents shall be available for the Construction Manager to review to ascertain that changes have been recorded.
- F. Failure of the Contractor to keep current with the updating of the Record Documents shall be grounds for withholding monies from partial payment estimates associated with schedules specified in Section 00 72 00-5.01B for the associated work completed to an amount determined at the sole discretion of the Owner.

1.06 Project Guarantee

- A. Requirements for Contractor's guarantee of completed Work are included in Article 9 of Document 00 72 00 (General Conditions). Guarantee Work done under Contract against failures, leaks, or breaks or other unsatisfactory conditions due to defective equipment, materials, or workmanship, and perform repair work or replacement required, at Contractor's sole expense, for period of one year from date of Final Acceptance.
- B. Neither recordation of Final Acceptance nor final certificate for neither payment nor provision of the Contract or partial or entire use or occupancy of premises by Owner shall constitute acceptance of Work not done in accordance with Contract Documents nor relieve Contractor of liability in respect to express warranties or responsibility for faulty materials or workmanship.
- C. Owner may make repairs to defective Work as set forth in Document 00 72 00 (General Conditions).
- D. If, after installation, operation, or use of materials or equipment to be provided under Contract proves to be unsatisfactory to Owner, Owner shall have right to operate and use materials or equipment until said materials and equipment can, without damage to Owner, be taken out of service for correction or replacement. Period of use of defective materials or equipment pending correction or replacement shall in no way decrease guarantee period required for acceptable corrected or replaced items of materials or equipment.
- E. Nothing in this Section shall be construed to limit, relieve, or release Contractor's, Subcontractors', and equipment suppliers' liability to Owner for damages sustained as result of latent defects in equipment caused by negligence of suppliers' agents, employees, or Subcontractors. Stated in another manner, warranty contained in the Contract Documents shall not amount to, nor shall it be deemed to be, waiver by Owner of any rights or remedies (or time limits in which to enforce such rights or remedies) it may have for defective workmanship or defective materials under laws of this State pertaining to acts of negligence.

1.07 Turn-In.

- A. Contract Documents will not be closed out and final payment will not be made until all keys issued to Contractor during prosecution of Work and letters from property owners, pursuant to Contract Documents, are turned in to Owner.

1.08 Release of Claims.

- A. Contract Documents will not be closed out and final payment will not be due or made until Document 00 65 30 (Agreement and Release of Any and All Claims) is completed and executed by Contractor and Owner.

1.09 Fire Inspection Coordination.

- A. Coordinate fire inspection and secure sufficient notice to Owner to permit convenient scheduling (if applicable).

1.10 Building Inspection Coordination.

- A. Coordinate with Owner a final inspection for the purpose of obtaining an occupancy certificate (if applicable).

PART 2 PRODUCTS – NOT USED

PART 3 EXECUTION – NOT USED

END OF SECTION

DIVISION 1 GENERAL REQUIREMENTS

SECTION 01 79 00

TRAINING

PART 2 – PROJECTS

2.01 General

Where specified, the Contractor shall conduct training sessions for Owner's personnel to instruct Owner's staff on the proper operation, care, and maintenance of the equipment and systems installed under this contract. Training shall take place at the site of the work and under the conditions specified in the following paragraphs. Approved operation and maintenance manuals shall be available at least 30 days prior to the date scheduled for the individual training session.

2.02 Location

Training sessions shall take place at the project site with times designated by Owner.

2.03 Format and Content

As a minimum, training session shall cover the following subjects for each item of equipment or system:

- A. Familiarization:
 - 1. Review catalog, parts lists, drawings, and etc., which have been previously provided for the Owner's files and operation and maintenance manuals
 - 2. Check out the installation of the specific equipment items
 - 3. Demonstrate the unit and indicate how all parts of the specifications are met
 - 4. Answer questions
- B. Safety:
 - 1. Review safety references
 - 2. Discuss proper precautions around equipment
- C. Operation:
 - 1. Review reference literature
 - 2. Explain all modes of operation (including emergency)
 - 3. Observe Owner's personnel on proper use of the equipment
- D. Preventive Maintenance:
 - 1. Review preventive maintenance (PM) lists including:
 - a. Reference material
 - b. Daily, weekly, monthly, quarterly, semiannual, and annual jobs
 - 2. Show how to perform PM jobs

3. Show Owner's Staff what to look for as indicators of equipment problems
- E. Corrective Maintenance:
1. List possible problems
 2. Discuss repairs – point out special problems
 3. Open up equipment and demonstrate procedures, where practical
- F. Parts:
1. Show how to use previously provided parts list and order parts
 2. Check over spare parts on hand. Make recommendations regarding additional parts that should be available
- G. Local Representatives:
1. Where to order parts: name, address, telephone
 2. Service problems:
 - a. Who to call
 - b. How to get emergency help
- H. Operation and Maintenance Manuals:
1. Review any other material submitted
 2. Update material, as required

PART 3 – EXECUTION

Training shall be conducted in conjunction with the operational testing and commissioning periods. The Contractor shall arrange to have the training conducted on consecutive days, with no more than 6 hours of classes scheduled for any single day. Concurrent classes shall not be allowed.

Acceptable operation and maintenance manuals for the specific equipment shall be provided to Owner prior to the start of any training.

The following services shall be provided for each item of equipment or system as required in individual specification sections. Additional services shall be provided, where specifically required in individual specification sections.

Hands-on equipment training for maintenance and repair personnel shall include:

- A. Locate and identify equipment components
- B. Review the equipment function and theory of operation
- C. Review normal repair procedures
- D. Perform start-up and shutdown procedures

- E. Review and perform the safety procedures
- F. Perform Owner approved practice maintenance and repair job(s), including mechanical and electrical adjustments and calibration and troubleshooting equipment problems

END OF SECTION

**SECTION 02000
SITE CONDITIONS**

PART 1 - GENERAL

1.01 SUMMARY

- A. Section includes:
 - 1. Locations of Work Sites
 - 2. Weather Conditions
 - 3. Elevation
 - 4. Naturally Occurring Asbestos (NOA)

1.02 STATION LOCATIONS

- A. Approximate Coordinates:

1. 8 th Avenue	STA: 1+00	N 38.0935°	W 121.5562°
2. 9 th Avenue	STA: 1+00	N 39.0918°	W 121.5566°
3. 10 th Avenue	STA: 1+00	N 39.0900°	W 121.5563°
4. Western Avenue	STA: 1+00	N 39.0882°	W 121.5564°

1.03 WEATHER CONDITIONS

- A. Near freezing conditions may exist during the winter months.
- B. 100 degree plus temperatures exist during the summer months.

1.04 ELEVATION

- A. Elevation at the station sites vary from approximately 60 to 70 feet above mean sea level.

1.05 NATURALLY OCCURRING ASBESTOS (NOA)

- A. If while excavating the Contractor sees any materials which appear to contain asbestos fibers, the Contractor shall stop excavation and report the findings to the Owner immediately.

PART 2 - GENERAL (NOT USED)

PART 3 - PRODUCTS (NOT USED)

END OF SECTION

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SECTION 02055
DEMOLITION AND SITE PREPARATION

PART 1 - GENERAL

1.01 SUMMARY

- A. Demolition and site preparation includes all clearing, grubbing and demolition Work.

1.02 JOB CONDITIONS

- A. Contractor shall determine the actual condition of the Site as it affects the Work.
- B. In General, the demolition will include:
1. Clearing and Grubbing.
 2. The removal and disposal of any material, debris and appurtenances as required to complete the work. This will include saw-cutting and disposal of asphalt and concrete.
 3. Other demolition as required to complete the work.

1.03 QUALITY ASSURANCE

- A. General: All work shall be performed in accordance with the local building codes, State Industrial Safety Orders and requirements of the Occupational Safety and Health Act requirements.
- B. Contractor will be tying into existing Asbestos Cement pipe. Contractor shall take all required precautions to protect workers and the environment while modifying, handling or transporting these materials.
1. Dispose of all AC pipe in a safe and legal manor. Provide disposal records to the City inspector.
 2. Remove and/or modify AC pipe per US EPA regulations, NESHAP, 40 CFR Part 61, Subpart M and applicable OSHA regulations.
 3. Contractor shall submit an ac pipe handling and disposal plan for approval prior to start of work.
 4. Contractor shall be certified by the State of California to handle AC pipe and its associated debris.
- C. Schedule: Demolition must be scheduled to allow all existing services and utilities to remain in continuous operation as long as possible. No interruption in operation will be permitted without authorization from the Owner's Representative. Contractor shall provide any temporary means and facilities required to keep the required services in operation when the normal means requires interruption.
- D. Protection:
1. Demolition shall be performed in such a manner as to not harm adjacent structures, equipment, existing landscaping or natural vegetation.
 - a. The Contractor shall assume full responsibility for such disturbance.
 - b. All costs of any such repair, rehabilitation, or modifications shall be borne by the Contractor.
 - c. Existing facilities not scheduled for demolition, which are damaged by construction activities, shall be repaired or replaced at the District's discretion and at the Contractor's expense.

2. The Contractor shall provide such protection and means as may be required to transfer material to the ground.
 - a. Throwing, dropping or permitting the free fall of material and debris from heights which would cause damage to other work, existing structures, or equipment; undue noise or nuisance; or excessive dust is expressly prohibited.
- E. Protect existing trees and other vegetation to remain against damage.
 1. Do not smother trees by stockpiling construction materials or excavated materials within drip line.
 2. Do not permit foot or vehicular traffic or parking of vehicles within drip line.
 3. Provide temporary protection as required.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.01 GENERAL

- A. Contractor shall notify the Owner's Representative when demolition is complete.

3.02 PERFORMANCE

- A. Clearing and Grubbing

1. The Site of all open-cut excavations and areas to be cleared, shall be cleared and grubbed prior to excavation.
 - a. Unless otherwise specified, the Contractor shall remove obstructions such as brush, trees, logs, roots, root balls, heavy sod, vegetation, rock, stones larger than 6 inches in any dimension, broken or old concrete and pavement, debris, and structures.
 - b. Clearing and grubbing in areas of structural improvement such as concrete structures shall be cleared and grubbed as above except that obstructions larger than 2 inches in any dimension shall be removed.

3.03 SALVAGE

- A. None.

3.04 REMOVED MATERIAL AND DEBRIS

- A. Where Contractor is directed on Drawings to "Demolish" or "Remove" material or facilities it is understood that the material will be removed and disposed of offsite unless specifically stated otherwise or directed by the Owner's Representative.
- B. All removed material and debris shall become the property of the Contractor and shall be removed from the Site.
- C. Materials and debris generated by demolition activities shall not be allowed to accumulate. Debris shall be removed daily and disposed of in a lawful manner.

3.05 RESTORATION

- A. Restore adjacent structures and facilities damaged during demolition or other construction to original or better condition.

END OF SECTION

SECTION 02060
TEMPORARY TRAFFIC CONTROL

PART 1 - GENERAL

1.01 WORK INCLUDED

- A. This work consists of furnishing, placing, implementing, maintaining and removing the various temporary traffic control setups in accordance with the Yuba County Department of Public Works Standards. See Appendix for Yuba County Traffic Control Devices.
- B. The Contractor shall prepare and submit a traffic control plan to the Yuba County Department of Public Works and receive approval prior to starting any work within the County right-of-way. Copies of approved traffic control plans shall be submitted to the Owner.
- C. 72-Hour advanced notification to residents required by Yuba County Department of Public Works.

PART 2 - PRODUCTS

2.01 GENERAL

- A. All barricades, warning signs, lights, temporary signals, and other protective devices shall conform to the provisions for Construction Signing as indicated in the "Manual on Uniform Traffic Control Devices for Streets and Highways", current edition, published by the Federal Highway Administration. Materials used for the fabrication or erection of such devices shall be approved by Yuba County Department of Public Works and the Engineer before use on the project. Traffic control devices not approved by the County and/or the Engineer will not be allowed to be used on the project and their use may justify suspension of Work.
- B. All controls shall comply with the California Supplement to the Manual on Uniform Traffic Control Devices (MUTCD-CA), Part 6, most current version at time of Notice to Proceed.
- C. Sign Panels: Sign panels will be constructed of 3/4-inch plywood or 6061-T6 or 5052-H38 aluminum alloy sheeting conforming to ASTM 209.
 - 1. Aluminum sign panels shall be 0.125 inches thick and backed with metal backing angles; except that those sign panels 48 inches by 60 inches or smaller may be:
 - a. 0.080 inches thick and backed with metal backing angles or 2-inch x 4-inch dimensional lumber or,
 - b. Unbacked 0.125 inches thick.
 - 2. Wood sign panels shall be backed with metal backing angles; except that backing is not required during the construction season for those sign panels 48 inches by 60 inches or smaller.

3. All sign panels installed without backing during construction will be backed as described above at the Contractor's expense prior to any suspension of work.
- D. Barrels: Barrels will be plastic conforming to the Manual on Uniform Traffic Control Devices California Supplement (MUTCD-CA), with six-inch-wide stripes.

2.02 CHANGEABLE MESSAGE SIGNS

- A. The use of changeable message signs (CMS) must comply with the MUTCD-CA. CMS boards must be portable and repositioned over the course of the project duration. Messaging must be effective, and abbreviations used must comply with the MUTCD-CA criteria.

2.03 FLAGGING

- A. The Flagging Code as adopted by the California Department of Transportation and made a part of the MUTCD-CA shall be adhered to at all times.

2.04 TRAFFIC CONTROL MAINTAINER

- A. The Contractor shall designate an individual(s) who will be responsible at all times to see that all necessary maintenance of traffic control devices is performed. The name of this individual(s) and the telephone number where this person(s) can be contacted at any time will be submitted to the Owner prior to implementing any temporary traffic control on the project.
- B. This individual(s) hereinafter entitled "TRAFFIC CONTROL MAINTAINER", will be responsible at all times to see that all necessary maintenance of traffic control devices is performed.
- C. Maintenance will include, but will not be limited to, the following:
 1. Clean all devices.
 2. Repair, reset or replace any damaged devices.
 3. Reset undamaged devices knocked or blown down.
 4. Replace batteries, light bulbs, control panels, and other components of electrical devices.
 5. Add fuel and motor oil to engines of power generating units for electrical devices and maintain them in good operating condition.
 6. Ensure that all devices remain in their proper locations and are properly positioned in accordance with the traffic control plan in use.
 7. Implement and enforce a system of relief flagging in which every flagger shall be relieved for at least fifteen (15) minutes every four hours for the duration of their shift.
 8. Failure of the Contractor to implement a TRAFFIC CONTROL MAINTAINER or failure of Maintainer to comply with the above stipulations will be considered just cause to suspend Work.
 9. The cost for a TRAFFIC CONTROL MAINTAINER is subsidiary to other bid items.

PART 3 - EXECUTION

3.01 REQUIREMENTS

- A. Construction shall not commence on the portions of the project requiring traffic control until necessary construction warning signs are approved by the Engineer and in place with adequate advance notification.
- B. No traffic control will be paid for outside of the project limits which results from the haul of Contractor secured material sources. Such traffic control shall be approved by the District and adhere to the provisions for Construction Signing as indicated in the "Manual on Uniform Traffic Control Devices for Streets and Highways", current edition. This additional control will be considered subsidiary to other bid items.
- C. Contractor shall notify appropriate authorities in advance of any street closure and as required by the County approved traffic control plan. This includes notifying the County, local media, all emergency services; all non-emergency services, such as waste collection, postal delivery, and schools; project engineer and all affected residents and businesses at least one week prior to closing any streets.
- D. Cal-trans shall be notified if the project includes or is adjacent to a road under their jurisdiction. Highways and/or streets closed to through traffic shall be protected by barricades, and obstructions shall be reflectorized and illuminated during hours of darkness. All flagging stations shall be fully illuminated, if they are providing traffic control during hours of darkness.
- E. Contractor shall provide an appropriate alternate route if street closures are proposed. No closure shall be allowed if an alternate route is not available. Only closures between two intersections will be allowed at any one time. All closures must be approved in advance by the County and shall be limited to the hours specified in the encroachment permit unless otherwise approved in writing by the County.
 - 1. Lane restrictions and controls with use of flaggers is only allowed from 7:00 AM to 5:00 PM Monday through Friday. No lane restrictions or closures shall remain in place outside of the Contractor's working hours.
 - 2. The Contractor shall allow residents within lane restriction and/or localized closures area ingress and egress access to their residents.
- F. Reasonable access shall be maintained to local residents at all times. Collector and arterial streets shall provide local access and emergency traffic flow.
- G. Portable signs may be mounted on stands, skids, or on barricades at the option of the Contractor. When not in use, however, signs and all mounting hardware shall be removed from edge of traveled way.
- H. The Contractor shall post "No street parking" notification as approved by the County a minimum of 2-days prior to the planned work within a specific area. Notification shall be maintained by the Contractor and their information kept up to date should construction schedules change.

END OF SECTION

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SECTION 02070
CONSTRUCTION PHOTOGRAPHY

PART 1 - GENERAL

1.01 DESCRIPTION

- A. Construction photography is required to document:
 - 1. Pre-construction conditions
 - 2. Construction activities
 - 3. Post-construction conditions.
- B. Photographs will be particularly useful in documenting the pre-construction conditions of private properties, landscaping, streets, existing facilities, etc.

1.02 RELATED REQUIREMENTS

- A. General Conditions
- B. Special Provisions

1.03 USE OF PHOTOGRAPHY

- A. Pre-Construction photography will be used in part to establish pre-construction conditions. Disputes with property owners will be settled through the use of construction photos that will document pre-construction conditions. In the event that the Contractor fails to adequately document pre-construction conditions, the Contractor will be obligated to restore disputed landscaping, yards improvements, etc. to the satisfaction of the property owner.
- B. Contractor shall provide a high-definition video of the work area prior to construction to document the condition of the roadways, driveways and other facilities along the construction corridor.

PART 2 - PRODUCTS

2.01 FORMAT

- A. Format of the photography shall be as follows:
 - 1. All photographs shall have the GPS location of the photograph embedded into the EXIF data written by the camera.
 - 2. All photographs shall be in digital format (.jpg) with date stamp, delivered to the District on a USB storage device.
 - 3. Photographs shall be in color and be taken with a high-quality camera rated at a minimum of 16 megapixels.
 - 4. Video shall be in digital format (1080p minimum) with date stamp and stored on a USB storage device.

2.02 DATABASE

- A. The photos shall be described in a table, (MS-Excel) that will be used for indexing digital photographs. The table shall have the following fields:
 - 1. Pre-construction photographs (will be multiple records)
 - 2. Construction photographs (will be multiple records)

3. Post-construction photographs (will be multiple records).
- B. The Contractor shall populate the table fields indicated with links to the digital photos that correspond to each area affected by the project, as well as public rights-of-way as necessary.

PART 3 - EXECUTION

3.01 PRE-CONSTRUCTION DOCUMENTATION

- A. Prior to construction, the Contractor will document the conditions of all surface features of the affected areas. This documentation shall be in the format as noted above.
- B. The Contractor is obligated to document the Pre-Construction conditions sufficiently to avoid disputes with property owners and the County regarding the quality of post-construction repairs.
- C. Pre-Construction video coverage shall include (at a minimum):
 1. The ground surface above all pipes to be placed.
 2. All driveways in the project vicinity which construction equipment may access.
 3. All access roads, parking areas and staging areas.
 4. All curb, gutter and road shoulders, and other surface features in the project vicinity that construction equipment might damage.
- D. Submit one pre-construction video to the District prior to beginning construction. Video shall be labeled with the title, "Pre-Construction Video", the name of the project, name of the Contractor, and date(s) of recording. The person recording shall include enough narrative to let a viewer know the time, date, and location of each separate area shown.
- E. Pre-Construction photographs shall include a minimum of two photos from all areas that will be excavated. Photos should focus on areas that will be disturbed by the work.
- F. Prior to the beginning of construction, the Contractor shall submit a USB storage device to the Engineer containing the following information:
 1. Photography table with links to color photographs for each address. Only links to pre-construction photographs are required to be completed at this time.

3.02 CONSTRUCTION PHOTOGRAPHS

- A. The Contractor shall use construction photographs to document the progress of construction activities, unusual situations, repairs made to buried improvements, accidents, construction disputes, and any other conditions that may be useful in the future. The use of construction photographs should be for the Contractor's benefit to document work completed.
- B. The Contractor shall take and supply photographs each time a utility is exposed with location and details of the condition noted.

3.03 POST CONSTRUCTION DOCUMENTATION

- A. Provide Post-Construction photographs. Post-Construction photographs will include photos of the completed and repaired work areas. Photos will include enough detail to demonstrate that the Contractor has performed repair and clean-up work. At a minimum, each site that was photographed for a pre-construction photo shall be re-photographed for the post-construction documentation.

- B. Following completion of construction, the Contractor shall submit to the District a USB storage device with the following information:
 - 1. Photography table with links to color photographs for each location. Links to pre-construction photographs, construction photographs, and post-construction photographs are all required to be completed at this time. This final submittal shall contain all photographs taken and is to replace all USB storage devices previously submitted to the District.
- C. A Post-Construction video shall be made that documents the post-construction condition of the project site. Again, the video should include footage of all areas shown in the pre-construction video. Also, the video should include any sensitive areas as indicated by property owner's feedback and concerns.
- D. Submit one copy of each post-construction video to the Engineer immediately following completion of the work and prior to the final payment. Video shall be labeled with title, "Post-Construction Video", the name of the project, name of the Contractor, and date(s) of videotaping. The person recording shall include enough narrative to let a viewer know the time, date and location of each separate area shown.

END OF SECTION

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**SECTION 02072
TIE-IN SEQUENCING**

PART 1 - GENERAL

1.01 SCOPE OF WORK

- A. This section describes the requirements for tie-ins to the existing water system.
- B. This section also defines the system outage limitations.

PART 2 - SYSTEM OUTAGE

2.01 ALLOWABLE SYSTEM OUTAGE LIMITATIONS

- A. Distribution Mains
 - 1. The existing distribution for this project is a looped system with most services being served from two directions. Long runs of distribution mains (over 1,000 feet) exist throughout the project area. Outages affecting all properties served from these distribution mains shall be scheduled to minimize their service disruption as noted below.
 - 2. The Contractor is made aware that other properties beyond these Project limits are served off the distribution mains to be tied into. Interruptions to these properties shall be minimized if not avoided altogether.

2.02 SUBMITTAL

- A. In order to prevent unnecessary interruption of the water mains, a controlled scheduling and sequenced approach to the Contractor's work is necessary. The Contractor shall work in cooperation with the Owner's Operations and Maintenance personnel to maintain continuous operation of the system.
- B. The Contractor is required to submit a tie-in plan and outage request form for approval at least fifteen (15) working days prior to starting any of the tie-in work. The plan shall include adequate narrative to describe at least the following:
 - 1. How the Contractor will ensure water can be adequately supplied to and from the existing mains prior to tie-ins,
 - 2. How to minimize service interruption to all properties,
 - 3. How work will be sequenced to make all tie-ins,
 - 4. A list of emergency response measures.

PART 3 - EXECUTION

3.01 TIE-IN REQUIREMENTS

- A. The Contractor shall not operate any valve or other appurtenances without the permission of the Owner.
- B. Connections to Existing Facilities:
 - 1. The new main lines shall be extended as close as possible to the tie-in points. The new main lines must be completely tested before tying into the existing main lines. The existing water main **must remain in service** until the service cross-over is complete and tested.

2. The cost of temporary facilities and other items necessary for successful completion of the project shall be included in the bid.
 3. The Contractor shall be fully prepared to complete the connection in the time allotted and shall not stop work until the facilities are restored to service or until otherwise directed by the Owner.
 4. All possible preparatory work shall be completed to the satisfaction of the Owner prior to connection to the existing system. The Owner reserves the right to cancel or delay the tie-ins due to weather, equipment, or man-power concerns.
- C. Exposing Existing Facilities: When connections are to be made to any existing pipe or other appurtenances, a minimum of two days before the tie-in the Contractor shall excavate and expose the existing facility before the connection is made to determine the actual size, elevation, and position of the facility, and that all required materials necessary to complete the tie-in are on site.
- D. Tie-in Sequencing
1. After successful testing of the new water main line, the new water main line shall be connected to the existing water main.
 2. Once the new water main line is connected to the existing system, new services are to be connected to existing services laterals or meters in a systematic way to minimize the number and duration of outages for any individual customer.
 3. Existing service lines will need to be capped and remain watertight until the existing system is abandoned.
 4. The Contractor is required to employ adequate resources to ensure that no customer shall be out of service for more than an eight (8) hour duration on no more than two (2) consecutive days.
 5. The Contractor shall notify property owners a minimum of 48-hours prior to any shut-downs. The Contractor is responsible for disposal of water remaining in the service.
 6. Only after all services in a phase are connected to the new system will final abandonment of the existing system be performed. Contractor shall provide an abandonment plan in advance of final abandonment.

END OF SECTION

SECTION 02075

PROTECTION, TESTING, AND RESTORATION OF EXISTING FACILITIES

PART 1 - GENERAL

1.01 REQUIREMENTS

- A. This section is intended to include requirements associated with protection, testing, and restoration of existing facilities such as underground and above ground utilities, sewer utilities, sprinkler systems, surface improvements, and survey markers.
- B. Existing Facilities
 - 1. The Contractor shall take all necessary measures to avoid injury to existing surface and underground utility facilities in and near the site of the work.
 - 2. No error or omission on the drawings shall be construed to relieve the Contractor from his responsibility to protect all underground pipes, conduits, cables, or other structures.
 - 3. The Contractor shall indemnify the Owner and hold it harmless from any and all claims, demands, or liability made or asserted by any person or entity on account of, or in connection with any damage to such surface or underground facilities caused by the Contractor or any of his agents or subcontractors.

1.02 NOTIFICATION OF UTILITIES

- A. Utility Owners are to be contacted by the Contractor prior to any excavation activities. Should any apparent interferences exist, the Engineer shall be immediately notified.
- B. Contractor shall utilize the services of Underground Service Alert (USA) and shall obtain a USA ticket that shall be kept current during excavating. USA may be contacted at 811.
- C. In the event that a conflicting utility is damaged, the utility owner shall be notified immediately and given the opportunity to specify repair materials and methods.

1.03 INTERRUPTION TO UTILITIES

- A. Any underground facilities located by utility owners, the Owner, or indicated in Contract Documents shall be treated as directed in Section 00 72 00 – Section 13.02 General Conditions to the Construction Contract.
- B. Any underground facilities not located by utility owners and not indicated in Contract Documents shall be treated according to Section 00 72 00 – Section 13.03 of the General Conditions to the Construction Contract.
- C. Unidentified Existing Utilities: If, in the performance of the work, an existing facility is encountered which is not shown on the drawings and is not apparent or inferable from visual inspection of the site, the Owner shall be notified immediately. The Owner will determine whether the drawings or specifications shall be modified, or whether existing utility shall be relocated or whether the Contractor shall work around the existing utility. If appropriate, the determination of the Owner shall be incorporated in a Change Order for extra work pursuant to the General Conditions.
- D. Exact locations and depths of all underground utilities shall be verified, by uncovering, prior to commencing any WORK activities. When such exploratory excavations show

the underground utility locations as indicated in Contract Documents to be in error, the Contractor shall immediately notify the Engineer in writing.

1. The Project drawings show the underground utilities on the site insofar as they are known to the Owner and the Design Engineer. The drawings may not show facilities apparent from visual inspection of the site or service laterals or appurtenances, the existence of which can be inferred from the presence of other visible facilities such as buildings, meters, junction boxes, etc., on or adjacent to the construction site.
- E. Where utilities are to be relocated, Contractor shall make proper application to the owners of the conflicting utilities and notify the Engineer of the specified time and conditions of necessitated WORK.
1. The Contractor shall make all arrangements for, and pay all costs connected with, any necessary relocation of existing surface and underground utility facilities (including without limitation, services, conduits, pipes, and mains) affecting the project or the work to be performed under these specifications.
- F. All restorations made to utilities shall be inspected and approved by an authorized representative of the utility before being concealed by backfill or other WORK.
- G. No additional compensation for any breaks or other delays associated with working around existing utility lines (gas, water, sewer, irrigation, etc.) will be made. The Contractor assumes the responsibility to retain and protect existing utility lines within or without the specified pay limits.
- H. Contractor is responsible and assumes all liability to retain and protect all utility poles and utility boxes within or beyond the specified pay limit.
- I. Contractor accepts responsibility for repair of utilities damaged during construction whether shown on the plans or not.

1.04 PROTECTION OF SURVEY AND STREET MARKERS

- A. Survey markers or other existing street markers shall not be destroyed, removed, or otherwise disturbed without proper authorization. No pavement breaking or excavation shall be started until all surveyor or other permanent marker points that will be disturbed by the construction operations have been properly referenced for easy and accurate restoration by the Contractor.
- B. All survey markers or points disturbed, will be accurately restored by the Contractor after all WORK is complete. The Contractor is responsible to replace survey markers per County Standards and obtain approval from the County prior to final Project closeout.

1.05 PROTECTION OF TREES AND SHRUBS

- A. Any construction work within the drip line of any tree shall conform to the County Standard Specifications and the following:
1. No tree shall be removed without the expressed written permission of the property owner.
 2. Roots over 2 inches in diameter shall be protected and if accidentally damaged, shall be treated with sealer material or as approved by the Owner.
 3. Hand excavation may be required to avoid damage to roots 2 inches in diameter and larger.

4. Cutting or breaking roots 2 inches in diameter or larger may require trimming of the tree to the satisfaction of the property owner, or County requirements.

PART 2 - PRODUCTS

2.01 REPLACEMENT IN KIND

- A. Unless indicated otherwise, or specifically authorized by a utility owner, reconstruct utilities and private property with new material of the same size, type, and quality as was removed.

PART 3 - EXECUTION

3.01 GENERAL

- A. Replace per the District or County Standards, as applicable, all improvements such as curbs and gutters, barricades, drain inlets, traffic islands, signalization, fences, signs, etc. that are cut, removed, damaged, or otherwise disturbed by construction.
- B. Replace per the applicable Agency standards all sanitary sewer or storm drain facilities that are cut, removed, damaged, or otherwise disturbed by construction.
- C. Where utilities are parallel to or cross the construction, but do not conflict with the permanent work to be constructed, follow the procedures given below and as indicated in the drawings.
 1. Notify the utility owner a minimum of 48 hours in advance of the crossing construction and coordinate the construction schedule with the utility owner's requirements.
 2. Determine the true location and depth of utilities and service connections that may affect or be affected by the work.
 3. Determine the type, material, and condition of these utilities.
 4. Provide sufficient lead time to resolve unforeseen conflicts, order materials and take appropriate measures to ensure that there is no delay in work.

3.02 PROCEDURES

- A. Protect in place:
 1. Protect utilities in place and maintain the utility in service, unless abandoned or otherwise specified.
- B. Cut and Plug Ends:
 1. Cut abandoned utility lines and plug the ends. Install a 2-foot concrete plug per contract details. Legally dispose of cut pipe and other removed items.
- C. Tees or outlets cut and capped on existing waterlines remaining in service will be subjected to the same leak standards as new pipe. Contractor shall account for thrust and pressure in the existing line when cutting and capping outlets.
- D. Remove and Reconstruct:
 1. Where so indicated in the drawings, or as required by the Owner's representative, remove the utility and, after passage of the Work, reconstruct it with new materials. Provide temporary services for the disconnected utility.

3.03 COMPACTION

- A. Utilities Protected in Place:
 - 1. Contractor shall backfill and compact under and around the utility.
- B. Sewer Crossing Procedures
 - 1. When crossing a sewer service, lateral or main the contractor shall protect the existing facility in place.
 - 2. When crossing below a sewer main, backfill material between the sewer main and the waterline shall be CLSM per these specifications.
 - 3. Any damaged sewer service, lateral or main shall be replaced per District Standards at the Contractor's expense.
- C. Alternative Construction
 - 1. Sand Slurry: Sand slurry consisting of one sack (94pounds) of Portland cement per cubic yard of sand and sufficient moisture for workability may be substituted for other backfill materials to aid in reducing compaction difficulties.
 - 2. Submit specific methods and procedures for the review by the Engineer prior to construction.

3.04 LAWN REPLACEMENT

- A. Any lawns damaged by construction shall be replaced with nursery grown sod and repaired at no cost to the Owner per Section 02491 Landscaping Repairs. Every attempt shall be made to satisfy the property owner that the repair has been made to restore private property to pre-construction condition.
- B. Seeding may be allowed on a case by case basis to achieve better match with existing grass, if adequate soil preparation is performed and watering arrangements are made with the owner.

3.05 LANDSCAPING REPLACEMENT

- A. All landscaping, including plants, flowers, and/or other vegetation damaged by construction shall be replaced or repaired at no cost to the Owner per Section 02491 Landscaping Repairs. Every attempt shall be made to satisfy the property owner that the repair has been made to restore private property to pre-construction condition.

3.06 YARD STRUCTURES

- A. Any structures including fences, sheds, decks, walkways, concrete, asphalt, etc. damaged by construction shall be replaced or repaired at no cost to the Owner. Every attempt shall be made to satisfy the property owner that the repair has been made to restore private property to pre-construction condition.

3.07 PAVEMENT AND STRIPING

- A. All pavement and striping disturbed as a result of the Work, shall be replaced in kind. Pavement and striping within commercial areas shall be approved by the property owner. Approvals shall be provided to the Owner in the form of a letter signed by the property owner.
- B. All pavement and striping disturbed as a result of the Work within County Right-of-Way shall be restored to County Standards and the Encroachment Permit.

3.08 PRIVATE UTILITIES

- A. All private utilities such as irrigation systems, swimming pool piping, yard lighting systems, etc., shall be replaced or repaired at no cost to the Owner. Every attempt shall be made to satisfy the property owner that the repair has been made to restore private property to pre-construction condition.

3.09 DRIVEWAYS

- A. Driveways shall be replaced in kind (but no less than 4-Inch of concrete over 4-Inch of gravel) by removing and replacing the entire damaged portion between joints or scores, except as follows:
 - 1. If there are no joints or scores in the damaged driveway, the Contractor may saw cut scores into the driveway in a symmetrically pleasing manner that is approved by the Owner and the property owner, to create concrete panels that are no larger than 10' x 10' and replace the newly created damaged portion.
 - 2. In the event that existing driveway panels are greater than 10' x 10', the Contractor may saw cut the driveway in a symmetrically pleasing manner that is approved by the Owner and the property owner, to create panels smaller than 10' x 10' and remove and replace only the damaged portion.
- B. It is the intent of this specification that the Contractor will not be required to replace more than 10' x 10' of any single driveway unless multiple areas are damaged.
- C. If the Contractor is required to saw cut new panels into a driveway, the new panels will be required to be as close to 10' x 10' as possible.
- D. Compaction of sub-grade shall be per County Standards.
- E. Driveways may be temporarily repaired with gravel; such that property owner can still use the driveway for up to ten working days. All final driveway repairs shall be made within ten working days of damage occurring.

3.10 SIDEWALKS AND CURB AND GUTTERS

- A. Unless otherwise approved or as directed by the County, temporarily restored sidewalks and curb and gutters shall, at a minimum, consist of:
 - 1. Cut and replace sidewalks and curb and gutters at the nearest joint on either side of the impacted area.
 - 2. Place gravel backfill or aggregate base and compact to 95% compaction.
 - 3. Place temporary cold mix asphalt and maintain until final restoration is made.
- B. Final restoration of sidewalks and curb and gutter damaged by the construction work shall be in accordance with the County Standards and to the satisfaction of the County.

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SECTION 02081
CONTROLLED LOW STRENGTH MATERIAL

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. Requirements for controlled low strength material (CLSM) as backfill material in specific locations.

1.02 DEFINITION

- A. Controlled Low Strength Material (CLSM):
 1. A highly flowable, lean concrete mix consisting of a mixture of cement, fly ash, densely graded mineral aggregates, water and admixtures.
 2. Characteristics include:
 - a. Capable of freely flowing to fill excavations and voids without compaction or other additional effort.
 - b. Used in trenches and backfill adjacent to structures where clearance is limited, and in other areas specifically identified on the Drawings or specified.
 - c. Low permeability to prevent migration of adjacent fines into the set mix.
 - d. Easily excavated after curing with minimum risk of damage to buried utility.

1.03 SUBMITTALS

- A. Mix Design: Identify name and/or number of the mix design. Provide proportions and gradations of materials proposed for CLSM.
- B. Certified test results for compressive strength.

PART 2 - PRODUCTS

2.01 GENERAL

- A. CLSM Mix: A mixture of Portland cement, fly ash, aggregate, water, and admixtures that produce a material of controlled density and of low compressive strength capable of filling all spaces between the pipe, the bedding, and the trench walls.

2.02 MATERIALS

- A. Cement: Conforming to ASTM C150, Type II or III with total alkali content not more than 0.8 percent.
- B. Water: Clean, potable water.
- C. Fly Ash
 1. Mix Designs used for Pipe Bedding and Trench Backfill: Class C in conformance with ASTM C 618.
 2. Mix Designs used for Backfill of Excavations: Class F in conformance with ASTM C 618

D. Aggregate Materials

1. Densely graded rock conforming to the following gradation:

Sieve Size	Percentage Passing
1"	100
No. 8	50-100
No. 200	0-5

E. Air Entrainment

1. 15% to 30%

2.03 DESIGN REQUIREMENTS

- A. Minimum Cement Content: 50 pounds per cubic yard.

B. Class C fly ash

1. Use to improve flow-ability of the fresh CLSM and to regulate the strength. Do not use more than 300 pounds per cubic yard.

C. Class F fly ash

1. Do not use more than 200 pounds per cubic yard.

D. Unit Weight Requirements

1. Density of CLSM when used as backfill of excavations: Between 100 pounds per cubic foot and 130 pounds per cubic foot in the as-placed condition as determined by ASTM D 6023.

E. Compressive Strength Requirements

1. Mix Designs used for Pipe Bedding and Trench Backfill
 - a. Mixes shall be hand diggable.
 - b. Compressive strength at 28 days between 50 psi and 100 psi as determined in accordance with ASTM D 4832.

2.04 CONSISTENCY AND MIXING

- A. Consistency: Similar to that of a thick liquid so that it flows readily and fills spaces and voids around pipes and structures.

B. Flowability – per ASTM D6103

C. Uniform consistency and appearance.

- D. Mixing Method and Time: As required to produce a uniform mixture of cement, fly ash, aggregate, admixtures, and water.

2.05 MEASUREMENT OF MATERIALS

- A. Use weighing equipment to determine the amount of cement, fly ash, and aggregate entering into each patch. Where batches are proportioned to contain an integral number of conventional sacks of cement, the cement is delivered at the mixer in the original unbroken sacks, the weight of the cement contained in each sack may be taken without weighing as 94 lbs.

- B. Use a suitable water meter or other acceptable method of measuring the quantity of water entering the mixer.

PART 3 - EXECUTION

3.01 PLACEMENT

- A. Thoroughly settle and consolidate CLSM as the material is placed in excavations. Fill the entire depth of the layer that is being consolidated, into a dense, homogeneous mass, filling all spaces and voids and bringing only a slight excess of water to the exposed surface. Place and consolidate CLSM by means that will not cause segregation of the mix.
- B. Do not place CLSM under the following conditions:
 - 1. When the air temperature is below 40 degrees Fahrenheit or is predicted to be below 40 degrees Fahrenheit in the next 24 hours.
 - 2. When the excavation contains water or when the bottom or walls of the excavation are frozen or contain frozen material.
- C. Prevent flotation of pipes by placing CLSM in two or more lifts, with each lift reaching an initial set before the succeeding lift is placed. Correct any flotation or displacement of pipelines prior to initial set of CLSM.

3.02 PROTECTION OF CLSM

- A. Protect CLSM from equipment, traffic, and backfilling operations until the surface has achieved an initial set and has hardened enough to develop a minimum penetration number of 650 when tested in accordance with ASTM C 403.
- B. If the trench backfill is not to be placed over the CLSM within eight hours after CLSM placement, place a 6-inch layer of moist backfill over the CLSM.

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SECTION 02221
TRENCHING, BACKFILLING, AND COMPACTING

PART 1 - GENERAL

1.01 SUMMARY

- A. Description of Work: All excavation, trenching, shoring, dewatering, backfilling, compaction and grading necessary for the construction of the work in accordance with the Contract Documents. Trench excavation shall include the removal of all materials or obstructions of any nature, the installation and removal of all sheeting and bracing, and the control of water, necessary to construct the work as shown.
- B. Unless otherwise indicated on the drawings or permitted by the Engineer, excavation shall be by open cut. Trenching machines may be used, except where their use will result in damage to existing facilities. Trenches shall be excavated to provide for the bedding, backfill, and compaction hereafter specified.
- C. This work includes, but is not limited to:
 - 1. All excavating, filling and grading to the elevations shown on the Drawings.
 - 2. Trench excavation, backfilling and compaction for utilities.
- D. All work on private properties shall be in accordance with Right of Entry agreements and within the limits provided.

1.02 SUBMITTALS

- A. General: Submit the following items.
 - 1. Samples: Furnish such quantities of earthwork materials as may be required by the Owner for test purposes. The Contractor shall cooperate with the Owner and furnish necessary facilities for sampling and testing of all materials and workmanship. All material furnished and all work performed shall be subject to rigid inspection, and no material shall be delivered to the site until it has been favorably reviewed by the Owner, or used in the construction work until it has been inspected in the field by the Owner.
- B. Test Results: Submit test results of tests conducted under the "Quality Assurance" paragraph.

1.03 QUALITY ASSURANCE

- A. Requirements of Regulatory Agencies:
 - 1. Safety Regulations:
 - a. Work shall comply with all Federal, State and municipal regulations regarding safety, including the requirements of the following:
 - b. Williams - Steiger Occupational Safety & Health Act of 1970
 - 2. Local Requirements: All work falling under the jurisdiction of Yuba County Department of Public Works shall conform to their applicable requirements.

3. All trenching work shall conform to Trench Construction Safety Orders of California State Industrial Accident Commission (CSIAC)
- B. Observation and Testing: Refer to Section 01400.
1. Source Quality Control: Contractor shall test import materials proposed for use to demonstrate that the materials conform to the specified requirements. Tests shall be performed by an independent testing laboratory.
 2. Testing Methods:
 - a. All testing methods shall be per Owner's Standards.

1.04 DELIVERY, STORAGE AND HANDLING

- A. Storage of Materials
1. Neatly place imported and excavated materials suitable for backfill far enough from the excavation to prevent stability problems.
 2. Keep the materials shaped so as to cause the least possible interference with the owner 's operations and drainage.
 3. Storage of materials within public right-of-way or private property during non-working hours is prohibited, unless approved by the County, Agency with jurisdiction, or property owner.
- B. No storage of material or equipment is allowed on the street except with a County approved road closure.

1.05 PROJECT SITE CONDITIONS

- A. Existing Conditions
1. Subsurface Conditions: Other than limited potholing at existing utilities, no subsurface investigation was performed in preparation of this Project. The pothole data will be made available to the Contractor upon written request to the Owner. The content of the pothole data in no way attempts to describe geotechnical conditions existing within this Project location. Any reference to it is at the sole risk of the Contractor.
 2. Groundwater may be encountered; the Contractor is responsible for all dewatering necessary to execute the work.
 3. Contractor shall become acquainted with all site conditions. Contractor shall promptly notify the Owner of any utilities not shown on the drawings found during excavating. Contractor shall cease operations in this area until the Owner provides instructions to the Contractor to resolve any conflict issues at no additional cost to the Owner. Failure to do so will make the Contractor liable for any and all damage thereto arising from his operations subsequent to discovery of such utilities not shown on Drawings.
 4. Maintain access to existing facilities to permit continued operation.
 5. Maintain access for firefighting and emergency equipment and to fire hydrants.
- B. Seasonal Limits:
1. No fill shall be placed during weather conditions which will alter the moisture content of the fill materials sufficiently to make adequate compaction impossible.
 2. After placing operations have been stopped because of adverse conditions, no additional fill material shall be placed until the last layer compacted has been checked and found by the Engineer to be compacted to the specified densities.

1.06 POTHOLING

- A. Contractor shall, prior to any potholing or pipeline installation, mark with white paint the limits of excavation to be performed. Contractor shall request 811 USA ticket for all local utility providers to mark existing utilities. Contractor not to perform work until all utility providers have responded (marked or confirmed no conflicts). If any markers become illegible it is the responsibility of the contractor to resubmit the 811 USA ticket.
- B. The Contractor shall pothole all known utility of potential concern, including service laterals, within the proposed water main alignment and water services prior to the installation of any water lines and water services. An extensive effort will be required to pothole all utility crossings concurrently; this may require a full-time potholing crew working.
- C. The pothole data will be used to make any necessary alignment adjustments based on the actual utility location (horizontal and vertical) as compared with that shown on the plans. All utilities, including service laterals, crossing the proposed alignment shall be potholed, and the Sequence of Work Plan must be approved prior to the start of any potholing and construction work. Potholing must be completed and all data for a scheduled sequence must be provided to the District and Engineer a minimum of four (4) weeks (twenty (20) working days) prior to starting construction. A minimum of eight (8) weeks (forty (40) working days) total shall be required to complete all revisions to the alignment regardless of scheduled sequence.
- D. Pothole locations shall be located via GPS providing northing and easting coordinates based on the datum as noted in the plans. The Contractor shall also develop a Microsoft Excel spreadsheet that records each pothole location correlated to the GPS coordinates. The spreadsheet shall record, at a minimum:
 - 1. A unique pothole ID,
 - 2. Utility type, material, diameter, depth, northing, easting
 - 3. Indication if the pothole is or is not over the new main alignment,
 - 4. If the pothole is associated with a new water service installation (Y/N).
- E. Contractor shall provide a marked up drawing (digital drawing) illustrating where the potholes were performed, any relevant field notes, and any utility differences from that shown on the plans. Costs associated with any utility conflicts resulting from inadequate potholing effort shall be the Contractor's responsibility.

1.07 CLEAN-UP AND DISPOSAL

- A. Clean-up:
 - 1. The Contractor shall maintain cleanliness on roadways and other public areas used by the equipment and will be held responsible for immediate removal of all spillage on the public pavements.
 - 2. The Contractor shall remove from the site daily all rubbish and debris found thereon, and all materials and debris resulting from demolition, leaving the site in a safe and clean condition.
- B. Disposal:

1. All items and materials not indicated or specified to be reused or to become the Owner 's property shall become the Contractor's property and shall be removed from the premises.
2. The Contractor shall make all arrangements for the legal disposal of materials and pay all costs involved.
3. See Section 02055 Demolition and Site Preparation, for demolition of AC pipe.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. Pipe Bedding Materials:
 1. Provide pipe bedding material per the OPUD Standard Specifications for backfill within the Pipe Zone.
- B. Intermediate Backfill Materials:
 1. Provide and compact to 95% min. dry density imported select material. Intermediate backfill materials shall be Class 2 Aggregate Base per Caltrans specifications. All spoils must be hauled off-site.
- C. Water:
 1. The water used shall be free of silt, oil, organic matter, alkali, salts, and other impurities. Water quality shall be acceptable to the Owner.
- D. Tracing Wire:
 1. Wire shall be direct-bury No. 10 gauge solid, THHN, insulated, soft-drawn copper wire taped to the pipe to facilitate future location of the pipe. Stub the wire up inside each valve box. The locating wire shall include 3/64-inch type TW insulation.
- E. Warning Tape:
 1. Christy – Blue, 12-Inch wide labeled “Buried Water Line Below”

PART 3 - EXECUTION

3.01 GENERAL

- A. Contractor shall contact Underground Services Alert at 811 and have underground utilities located at least 48-hours (2 business days) prior to the start of excavation.
- B. All parcels affected by the current work shall be given 72-hours notice prior to the start of construction affecting their parcel.
- C. Barriers shall be placed at each end of all excavations and at such places along excavations as may be necessary to warn all pedestrian and vehicular traffic of such excavations. Trenches within public right-of-way shall be backfilled and finished with temporary pavement or plated to the encroachment requirements, whichever is more stringent.
- D. Where excavation occurs in paved areas, the pavement shall be sawn, ground, and broken ahead of the excavation operation. The extent of paving removed shall be

limited to the minimum necessary for the excavation. Final pavement removal shall be in accordance with County Standards.

E. Support of Excavations:

1. Adequately support excavation for trenches and structures to meet all requirements in the current rules, orders, and regulations prescribed in the Construction Safety Orders of the Department of Industrial Relations, Division of Industrial Safety, State of California. Excavation shall be adequately shored, braced, and sheeted as necessary so that the earth will not slide or settle and so that all existing structures and all new pipe and structures will be fully protected from damage.
2. Take all necessary measures to protect excavations and adjacent improvements from running, caving, boiling, settling, or sliding soil resulting from the high groundwater table and the nature of the soil excavated. Attention is directed to Section 832 of the Civil Code of the State of California relating to lateral and subjacent supports, and wherever structures or improvements adjacent to the excavation may be damaged by such excavation, the Contractor shall comply with this law.
3. The support for excavation shall remain in place until the pipeline or structure has been completed. During the backfilling of the pipeline or structure, the shoring, sheeting, and bracing shall be carefully removed so that there shall be no voids created and no caving, lateral movement or flowing of the sub-soils.

3.02 CLEARING, GRUBBING AND SITE PREPARATION

- A. Materials removed which are suitable for fill or backfill as specified herein may be temporarily stockpiled at the Contractor's staging area or at another site negotiated in writing by the Contractor and agreed to by the Owner. No stockpiling of materials shall be allowed with City Right-of-Way or on customer properties.
- B. All vegetation, rubble, rubbish, rock fragments exceeding six inches (6") in final size; loose existing fill or other loose and/or saturated materials; roots and organic matter within (2') of final grade; and underground utilities removed within two feet (2') of final grade shall be removed and disposed of so as to leave the areas that have been disturbed with a neat and finished appearance, and free of unsightly debris. Excavations and depressions as well as loose solid deposits that extend below planned finished sub-grade level shall be cleaned out to firm, undisturbed soil and backfilled with suitable materials in accordance with these specifications.

3.03 TRENCH EXCAVATION

- A. Trench Width: See Plan Details.
- B. Cutting of Pavement: When the trench is in an existing paved area, the pavement shall be sawn ahead of the trenching operations. All pavement cuts shall be in a neat line. The proper tools and equipment shall be used in marking and breaking so that the pavement will be cut accurately on neat and parallel lines. The width of pavement cut shall be sufficient to avoid further pavement breakage during trenching operations. Refer to details on the approved plans.

- C. Paving: New and replacement paving including subgrades shall be in accordance with Section 02575 – Pavement Restoration and the approved Encroachment Permit.
- D. Maximum Length of Trench Open: In all public areas, the maximum length of trench excavation in advance of the pipe laying operation shall be one hundred (100) feet, and the maximum amount of trench remaining open without backfill shall be one hundred (100) feet. At the end of each working day, all trenching shall be backfilled, compacted, and resurfaced per 02575 – Pavement Restoration.
- E. Special Foundation Treatments:
 - 1. Whenever the bottom of the trench is soft, yielding, or in the opinion of the Engineer otherwise unsuitable as a foundation for the pipe, the unsuitable material shall be removed to a depth such that when replaced with crushed rock will provide a stable and satisfactory foundation.
 - 2. If material more than 12-inches below the flow line of the pipe is ordered removed by the Engineer, the excavation below that point and the imported material required to backfill the trench to that elevation shall be paid for as extra work. Special compaction of the imported material may be required.
- F. Disposal of Excess Material, Pipe and Fittings:
 - 1. Excess excavated material, unsuitable or not required for backfill shall be the property of the Contractor and disposed of in a location selected by the Contractor in compliance with County and State requirements.
 - 2. All cleared material, excavated pipe, including Asbestos Cement pipe, and fittings shall be disposed of by the Contractor in compliance with County and State requirements at the Contractor's expense.

3.04 ROCK EXCAVATION

- A. Hard Rock Excavation: Excavation of unrippable rock requiring hydraulic hammering will be paid for as an additional cost above and beyond the cost for excavation and trenching for ordinary excavation. The Construction Manager will determine when rock excavation for unrippable rock is required per the definition below:

Equipment Used ⁽¹⁾	Excavation rate ⁽²⁾	
	Ordinary Excavation, including rippable rock	Unrippable Rock
Trench Excavation – Caterpillar 336F or equivalent (Flywheel power ≥ 250 HP, Vehicle mass ≥ 92,000 lbs) with a short to medium stick and a rock ripping bucket	≥ 5 CY per hour	< 5 CY per hour
(1) Equipment shall be in good operating condition and operated by experienced personnel		
(2) As witnessed by Construction Manager		

- B. Contract time will be extended for rock excavation at a rate of one (1) working day per forty (40) cubic yards of rock excavated.

- C. Rock encountered within mainline trench and service line trench will be measured by the Contractor and the Owner. Payment will be made by the volume calculated, cubic-yard, and agreed to by both parties per incident.
- D. Blasting is not a part of these specifications and is prohibited.

3.05 DISPOSAL OF EXCAVATED MATERIAL

- A. Dispose of offsite any unsuitable backfill material or excavated materials in excess of that needed to complete the work.

END OF SECTION

SECTION 02400

TRENCHLESS PIPE INSTALLATION

PART 1. GENERAL

1.01 WORK INCLUDED

- A. This specification covers the work necessary to furnish and install a complete and in place water service pipe using conventional boring tools or horizontal directional drilling equipment as shown on the drawings and specified herein. The Contractor shall provide all materials, labor, equipment, and services necessary for installation of new service lines, and connection of the new service line pipe to the new main lines.
- B. Main line pipe shall not be installed by trenchless means unless approved by the Agency.
- C. This specification is intended to be a "performance" type document. The Contractor shall consider this specification a guide to planning his work and should plan to submit all details of his proposed method, tools, and equipment for the Agency's approval.

1.02 RELATED WORK AND REFERENCES

- A. Pipe Fittings and Accessories – Section 15080.
- B. Protection and Restoration of Existing Facilities – Section 02075.

1.03 CONTRACTOR SUBMITTALS

- A. Contractor shall submit details on methods of proposed installation. Details shall include drawings detailing launch and receiving pits, layout space required for pipe prior to installation, manufacturers recommendations regarding maximum allowable bend on the pipe (through the launch pit), plans for making bends or installing fittings and re-launching pipe, etc.
- B. Contractor shall submit on the type and size of equipment to be utilized for trenchless installation.
- C. Contractor shall submit a profile of each bore including bore pits, crossing utilities, existing grade, final bore profile, and clearances from existing utilities.
- D. Contractor shall submit information on the equipment and tools that will be used in the boring/drilling operation. Details shall include: pulling forces generated by the equipment, methods of protecting the pipe against excessive pulling forces, footprint of the machine (for traffic control considerations), etc.
- E. Resumes for all personnel that will be operating the directional drilling or boring equipment must show experience in installing water services. Resumes shall document the required experience operating the specific equipment proposed for use on the project.

- F. All submittals will be subject to the approval of the Agency. Regardless of approvals given, the Contractor maintains responsibility for performing according to the specifications.
- G. As-builts shall be submitted for all trenchless pipe installation completed with each progress payment request.

1.04 QUALITY ASSURANCE

- A. Pipe insertion (boring or drilling) equipment shall be operated only by technicians who have a minimum of two years of experience in the installation of pipe as specified herein. The technician's experience shall be documented in the submittal.

1.05 WARRANTY

- A. By undertaking the Work, the Contractor stipulated that he provides to the Agency a warranty to be in force and effect for a period of one (1) year from the date of field acceptance by the Agency. The warranty shall require the Contractor to repair or replace the pipe should leakage, separation, collapse or other failure result from faulty materials or installation as determined by the Agency and the repair of any landscaping or vegetation due to the replacement.
- B. The warranty also indemnifies the Agency from any and all claims made by third parties against the Contractor or the Agency for damages incurred as a result of the use of trenchless installation of service line pipes.

PART 2. PRODUCT

2.01 GENERAL

- A. The Contractor shall provide pipe and fittings as specified and install same by directional drilling or boring to provide new water service pipe to each building identified to receive such.

2.02 PIPE

- A. The Contractor shall provide service line pipe as specified in these contract documents.
- B. Pipe shall be minimum PE 4710 Pressure Class 250PSI.

2.03 WATER CONNECTIONS

- A. Customer service lines shall include all fittings and appurtenances specified in Olivehurst Public Utility District Improvement Standards and Technical Provisions.

PART 3. EXECUTION

3.01 GENERAL

- A. The Contractor shall protect facilities from damage by forces generated by directional drilling or boring equipment.

3.02 PREPARATION

- A. All WORK shall be performed as specified herein and supervised by personnel experienced in the installation of the pipe by directional drilling or boring. Preparation shall be per the details submitted prior to construction by the Contractor.
- B. The Contractor shall expose known utilities that cross the path of the line to be installed by boring or directional drilling. Utilities shall be exposed by excavating (potholing) according to the guidelines provided by the California State Industrial Accident Commission.
- C. The Contractor shall be required to locate the sewer and gas service laterals for each house on properties on which trenchless installations are to be performed. Sewer and gas service laterals may be located using a sonde device or any other means of the Contractor's choosing provided that the horizontal and vertical location is clearly identified to the satisfaction of the Agency prior to beginning trenchless operations.
- D. The Contractor shall observe visually the operation of existing sprinkler lines of each property prior to any boring. The Contractor shall note any deficiencies in the sprinkler system and submit them to the Agency and the property owner. Contractor shall also record the static and residual water pressure at a hose bibb opposite from the point of connection of the new service to be installed. After new water service line is in full operation Contractor shall verify the sprinkler system is operational. Failure to adhere to this requirement will require the Contractor to fix any deficiencies reported by the homeowner after reconnecting the in-tract.

3.03 EQUIPMENT

- A. Contractor shall ensure that the equipment proposed is sized appropriately for the work to minimize disturbance on private property. Contractor shall utilize the smallest equipment available to perform the work.

3.04 HANDLING AND STORAGE

- A. The Contractor shall exercise care during the unloading, handling, and storage of all pipe to ensure that the pipe is not cut, gouged, scored or otherwise damaged. The pipe shall be stored so that it is not deformed axially or circumferentially. Any pipe segment with cuts in the pipe wall exceeding 10 percent of the wall thickness shall be cut out and removed from the site at the Contractor's cost.
- B. All pipe shall be inspected upon arrival to the staging area by the Inspector.

3.05 INSERTION PITS/EXCAVATIONS

- A. Launch and receiving pits and all excavations shall be prepared and backfilled in accordance with the equipment and the pipe manufacturers recommendations and in accordance with ASTM D-2774 and D-2321, the Yuba County Standard Specifications and the Olivehurst Public Utility District's Improvement Standards

and Technical Provisions and the guidelines provided by the California State Industrial Accident Commission. All pits shall be adequately shored and braced to ensure safe work areas. Launch and receiving pits shall be constructed according to the details submitted by the Contractor and approved by the Agency. All landscaping at or near pits shall be restored to pre-construction or better condition.

- B. Locations for the launch and receiving pits are to be determined by the Contractor and approved by the Agency. In considering locations for launch and receiving pits, the Contractor shall consider the size of the pipe to be installed, locations of obstructions and services, pulling distances, traffic conditions, and locations of conflicting utilities. Launch pits shall be constructed to avoid subjecting new pipe to forces (bending, or axial) larger than allowed by the pipe manufacturer.

3.06 PIPE INSTALLATION

- A. Contractor shall install all in-tract piping to the latest plumbing and building code standards.
- B. Contractor shall prepare the site for use of a directional drill or boring tool with pavement cuts or other surface preparations prior to beginning the construction. Contractor shall provide and install all pullers, rollers and other alignment control devices required to protect the pipe from damage during installation. Under no circumstances shall the pipe be stressed beyond pipe manufacturer's recommendations.
- C. Contractor shall supply all materials and equipment required for lubricating fluid during installation. Unit prices for pipe installation shall include supply and handling of lubricating fluid.
- D. Any slurry generated by the installation procedure shall be collected and or cleaned from the site. Costs for removing and disposing of the slurry shall be included in the cost of pipe installation and shall not be considered additional cost to the Agency.

3.07 STRESS AND STRAIN RELIEF AFTER PULLING OPERATIONS

- A. The Contractor shall allow the directional drilled or bored pipe to return to its original length and shape in the unstressed state prior to making end connections at the meter box or at the point of connection to the existing service line. Pipe manufacturer's recommendations shall be followed regarding the relief and normalization of stress and strain due to temporary stretching or elongation after pulling operations are completed. Contractor shall consider temperature and pulling time required when calculating required time for stress and strain relief. Time allowed for stress and strain relief shall be not less than 4 hours without a specific recommendation otherwise from the pipe manufacturer.

3.08 CONNECTION TO EXISTING SERVICE LINES

- A. Connections to existing service lines may be installed by trenchless means when beneficial and as close to the service connection as possible. Where absolutely necessary, or to preserve the health of vegetation (i.e., protect tree roots) excavations may need to be made.
- B. The Contractor shall excavate and expose the service line at the point that the new connection is to be made prior to installing the new service line.
- C. New services are not to be connected until pipe stresses and strain have been relieved through adequate time as specified above.
- D. Services shall be connected as detailed in the Olivehurst Public Utility District Standard Specifications, Improvement Standards and Technical Provisions and as shown on the drawings.

3.09 DISINFECTION AND TESTING

- A. Following all installation and connections, the new service lines shall be disinfected and tested according to the Olivehurst Public Utility District Standard Specifications, Improvement Standards and Technical Provisions. All service lines shall be flushed a minimum of 5-minutes each, and meter dial shall be confirmed to be registering volume of water. If flushing water is not clear after five minutes, Contractor to continue flushing until visibly clear.

****END OF SECTION****

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**SECTION 02491
LANDSCAPING REPAIRS**

PART 1 - GENERAL

1.01 DESCRIPTION

- A. The Contractor shall furnish all labor, equipment, and materials necessary to perform the following work as indicated on the drawings and specified herein:
1. Finish Grading
 2. Lawn and Grass Restoration
 3. Sidewalk, Patio, Driveway, Fencing and Gutter Restoration (Hardscape)
 4. Soil Preparation
 5. Clean Up
 6. Guarantee

1.02 EXISTING CONDITIONS

- A. Before submitting bid, the Contractor shall visit the site and become familiar with all conditions relative to landscaping, hardscape, elevations, soils, area of work, clearances, etc.; no extra payment will be allowed for work occasioned by improper appraisal of existing conditions. Contractor shall document existing conditions with photographs and video per the District Standards and the specifications.
- B. Existing landscaping and hardscape shall be preserved wherever possible.

1.03 PROPERTY OWNER AGREEMENTS

- A. The Contractor is made aware that Right of Entry (ROE) agreements have NOT been made between property owners and the District. The Contractor is required to obtain ROE agreements prior to performing any work beyond County ROW or property owner's barrier to entry (fences, gates, etc.) and is responsible for including all costs associated with those individual agreements.

1.04 LIKE LANDSCAPING

- A. Contractor shall replace all damaged landscaping with plants and grass similar in variety, size, and shape to the existing landscape vegetation. In the event that like landscaping is not commercially available, the Contractor shall coordinate with the property owner for a replacement. In no case will the Contractor be required to replace landscaping to a higher value than the existing without additional considerations from the District.
- B. Contractor shall have a licensed Landscape Contractor C-27 perform this replacement work. Landscape Contractor shall have a minimum of ten (10) years experience in performing related hardscape work and shall demonstrate a high level of competence.

1.05 HARDSCAPING

- A. Concrete, asphalt, and other hardscaping shall be sawcut as appropriate and replaced to the limits agreed upon in the approved ROE agreement. Alternative methods of repair shall be approved by the property owner and the District.
- B. Replacement of hardscaped surfaces shall match existing as much as possible and may include exposed aggregate, stamped concrete, colored concrete, brick, stone, fencing etc.
- C. Contractor shall have a licensed Landscape Contractor C-27 perform this replacement work. Landscape Contractor shall have a minimum of ten (10) years experience in performing related hardscape work and shall demonstrate a high level of competence.

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Deliver Sod to the site on palettes within 24 hours of stripping.
- B. Deliver fertilizer in waterproof bags showing weight, chemical analysis, and name of manufacturer.

PART 2 - MATERIALS

2.01 SOIL CONDITIONER

- A. Shall be treated bark, ¼" size, Vita-Bark Nursery Mix, Scotts Turf Builder Lawn Soil, or equal.

2.02 GROWING MEDIA

- A. Topsoil: Natural, fertile, agricultural soil capable of sustaining vigorous plant growth, not in frozen or muddy condition, containing not less than six (6) percent organic matter, and corrected to pH value of 5.9 to 7.0. Free from subsoil, slag, clay, stones, lumps, live plants, roots, sticks, crabgrass, coughgrass, noxious weeds, and foreign matter. Not exceeding twelve (12) inches in depth.
- B. Fertilizer: Use commercial fertilizer formulation required by soil analysis. Deliver fertilizer mixed as specified in standard size bags showing weight, analysis, name of manufacturer. Store in a weatherproof storage location in such a manner that it will be kept dry, and its effectiveness will not be impaired.

2.03 HYDRO MULCH AND SEEDING

- A. Provide hydro-mulch and seeding (if approved by property owner in lieu of sod) for any lawn or landscape area disturbed.

2.04 IRRIGATION SYSTEM

- A. Repairs and/or replacement of irrigation systems shall be made with new, in-kind materials and parts.

PART 3 - EXECUTION

3.01 PRE-CONSTRUCTION DOCUMENTATION

- A. Prior to construction, the Contractor shall document the conditions of all surface features of the affected areas per Section 02070 Construction Photography.

3.02 FINISH GRADING

- A. Drainage:
 - 1. Make the entire area within the impacted and surrounding area smooth and even and insure adequate drainage of all areas.
 - 2. There shall be no depressed areas where water is trapped creating wet areas.
 - 3. Should this be discovered by the Owner before or after completion of the landscape, the Contractor shall correct the problem at no expense to the District.
- B. Finish Grades:
 - 1. Ensure that finish grades shall be ½-inch below surface of paved areas.
 - 2. Finished grades shall not pose a tripping hazard.
- C. Scars:
 - 1. Eliminate any erosion or construction scars.
 - 2. The Owner's Representative shall have final determination.

3.03 SOIL PREPARATION

- A. All areas requiring seeding or planting of vegetation beds shall have the planting beds cleared and weeded.
- B. Fertilizer shall be applied in accordance with the recommendation of the nursery supplying the plants and vegetation.

3.04 PLANTINGS

- A. Trees:
 - 1. Plant, stake, fertilize and provide initial watering in accordance with supplying nursery recommendations.
- B. Shrubs:
 - 1. Plant, support, fertilize and provide initial watering in accordance with supplying nursery recommendations.
- C. Sod:
 - 1. Sod shall match the existing grass type and shall be planted, fertilized, and watered in accordance with supplying nursery recommendations.

3.05 WEED CONTROL

- A. Apply pre-emergent weed control to all shrub planting beds after completion of all planting. Follow manufacturer's direction. Do not allow any pre-emergent weed control

in the seeded areas. After applying the pre-emergent weed control, do not over-water any areas to prevent the washing away of pre-emergent weed control.

- B. If the area has existing weed barrier fabric that is damaged, replace in kind.

3.06 SPRINKLER SYSTEMS

- A. With cooperation of the property owner, Contractor shall operate existing sprinkler system prior to any construction that may affect the system.
- B. With cooperation of the owner, ensure sprinkler system settings are adequate to ensure adequate watering of the newly placed plantings.
- C. Contractor shall submit a report of findings to the inspector.
- D. Contractor shall be responsible for watering as necessary to re-establish plantings where no functioning irrigation systems exist.

3.07 POST CONSTRUCTION DOCUMENTATION

- A. Produce Post-Construction photographs and video per OPUD Standards and Section 02070 Construction Photography.
- B. Invoicing – All work done under this specification shall be documented by the Contractor and provided to the District for review. Progress payments to be made under this specification shall include an itemized invoice for each property.

END OF SECTION

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SECTION 02500
SHORING

PART 1 - GENERAL

1.01 SUBMITTALS

- A. Informational Submittals:
 - 1. Excavation support plan.
 - 2. Movement monitoring plan.
 - 3. Trench excavation plan.
 - 4. Movement measurement and data and reduced results indicating movement trends.

1.02 QUALITY ASSURANCE

- A. Provide surveys to monitor movements of critical facilities.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.01 GENERAL

- A. Design, provide, and maintain shoring, sheeting, and bracing as necessary to support the sides of excavations and to prevent detrimental settlement and lateral movement of existing facilities, adjacent property, and completed the Work.

3.02 TRENCH EXCAVATION PLAN

- A. Prepare trench excavation plan addressing following topics:
 - 1. Details of shoring, bracing, sloping, or other provisions for worker protection from hazards of caving ground.
 - 2. Design assumptions and calculations.
 - 3. Methods and sequencing of installing excavation support.
 - 4. Proposed locations of stockpiled excavated material.
 - 5. Minimum lateral distance from the crest of slopes for vehicles and stockpiled excavated materials.
 - 6. Anticipated difficulties and proposed resolutions.

3.03 MOVEMENT MONITORING PLAN

- A. Prepare movement monitoring plan addressing following topics:
 - 1. Survey control.
 - 2. Location of monitoring points.
 - 3. Plots of data trends.
 - 4. Interval between surveys.

3.04 REMOVAL OF EXCAVATION SUPPORT

- A. Remove excavation support in a manner that will maintain support as excavation is backfilled.

- B. Do not begin to remove excavation support until support can be removed without damage to existing facilities, completed Work, or adjacent property.
- C. Remove excavation support in a manner that does not leave voids in the backfill.

3.05 TRENCHES

- A. For trench excavation exceeding 5 feet in depth, provide adequate safety system meeting requirements of California Labor Code Section 6707, applicable local construction safety orders, and federal requirements.

END OF SECTION

**SECTION 02575
PAVEMENT RESTORATION**

PART 1 - GENERAL

1.01 DESCRIPTION

- A. Work in this section includes reconstruction of all curbs, gutters, sidewalks, mow strips, driveways, road shoulders, pavement and similar items damaged as a result of the work.
 - 1. Reconstruction shall match the original materials and dimensions subject to the minimum requirements of the Contract Documents. All work shall match the appearance of the existing improvements.
 - 2. Work covered in this section shall be completed in accordance with City Standards, OPUD Standards and/or County Standard Specifications, whichever is more stringent.
 - 3. Where discrepancies or conflicts exist between this specification and the specifications listed above, or the approved Encroachment Permit, the more stringent condition shall apply.

1.02 REFERENCE DOCUMENTS

- A. Reference Specifications: Whenever the words "Standard Specifications" are referred to in the Specifications, the reference is to the State of California, Department of Transportation (CALTRANS), Standard Specifications (latest edition). Standard Specifications paragraphs concerning measurement and payment are excluded.
- B. Cal Trans Construction Specifications, Section 84-2 – Pavement Markings/Striping

1.03 SUBMITTALS

- A. Submit the following items.
 - 1. Certification from the material supplier that the materials supplied for this project meet the Specifications.

PART 2 - PRODUCTS

2.01 CONCRETE

- A. Concrete shall meet the requirements of Section 03301 - CAST-IN-PLACE CONCRETE.

2.02 ASPHALT CONCRETE PAVEMENT

- A. Asphalt Concrete Pavement shall meet the requirements of Section 39 of the 2018 Caltrans Standard Specifications, and approved Encroachment Permit.

2.03 TYPE II SLURRY SEAL

- A. Slurry seal shall be Type II in accordance with Caltrans specifications latest edition.

2.04 TRAFFIC STRIPES AND PAVEMENT MARKINGS

- A. Traffic stripes and pavement markings shall be per the Caltrans Standards.

PART 3 - EXECUTION

3.01 PAVEMENT CUTTING

- A. After backfilling trenches or excavations and prior to paving, sawcut existing pavement parallel to the trench or excavation, using a concrete saw, to a minimum depth equal to or greater than one-half the pavement thickness.
- B. Any pavement damaged outside these lines shall be re-cut and restored at the expense of the Contractor.
- C. Should voids develop under existing pavement during construction, those affected areas shall be sawcut in straight orthogonal lines and replaced after the voids have been filled.

3.02 TEMPORARY PAVEMENT

- A. Temporary resurfacing consisting of not less than 2 inches of hot mix asphalt concrete shall be placed and maintained wherever an excavation is made through an existing pavement section.
- B. The temporary resurfacing shall be maintained to provide for the safety and convenience of the public.
- C. Temporary pavement shall be placed as soon as the condition of the trench backfill is considered by the Owners Representative to be suitable to receive resurfacing. Temporary resurfacing shall be removed prior to permanent resurfacing.
- D. Temporary pavement shall be clearly marked "Temporary Pavement" per Cal-Trans standards 12-6 .02A.

3.03 CONCRETE RESTORATION

- A. Restore all concrete items within County right-of-way per County Standards and County Encroachment Permit.
- B. Replace curb, gutter, and sidewalk between the expansion joints at all locations where trenching across them.
- C. Sidewalk repair shall be per County Standards.
- D. Restore all other concrete items to the same dimensions and thickness as the original items. Place concrete in accordance with the requirements of Section 03301 CAST-

IN-PLACE CONCRETE. Upper 6 inches of subgrade shall be compacted to a minimum 95 percent relative density prior to placement of concrete.

- E. Surface finish shall match existing surrounding surface.

3.04 ASPHALT CONCRETE RESTORATION

- A. Shall conform to County Standards, the Encroachment Permit or OPUD Standards, whichever is more stringent.

3.05 TYPE II SLURRY SEAL

- A. Slurry seal shall be Type II installed in accordance with Caltrans specifications latest edition.

3.06 TRAFFIC STRIPES AND PAVEMENT MARKINGS

- A. Restore traffic stripes and pavement markings per Caltrans Standards and the Encroachment Permit.

3.07 SERVICE & IN-TRACT RELATED PAVEMENT RESTORATION

- A. All pavement surfaces on private property disturbed by the Contractor shall be restored in-kind to original or better condition. This shall include, but not be limited to asphalt, concrete, pavers, gravel or any other improved surface treatment within driveways, walkways or other pathways.
- B. All pavement surfaces disturbed by trenching operations within the County Right of Way shall be restored per County Trench Detail 300.
- C. All pavement surfaces potholed within the County Right of Way that will not be restored during final trenching pavement restoration shall be repaired with 2 sack slurry backfill and include a 3" thick AC patch, 18" square. If pothole exceeds 4" in diameter or multiple pothole patches are required within 4' of each other, Contractor shall provide a rectangular 3" thick AC cap that extends a minimum of 9" beyond the pothole limits and provide a 2" grind and overlay extending 12" beyond the AC cap.

END OF SECTION

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SECTION 02670
ABANDONMENT OF FACILITIES

PART 1 - GENERAL

1.01 SCOPE

- A. This section governs abandonment of pipelines, services, valve and meter, and other existing structures.

1.02 SUBMITTALS

- A. Upon request, schedules and method of abandonment shall be submitted to the Owner for approval.

PART 2 - MATERIALS

2.01 GENERAL

- A. Concrete, fittings, backfill material and other material used for abandonment shall comply with Specification 03301 – Cast in Place Concrete and 02081 – Controlled Low Strength Material (CLSM).

2.02 FACILITY ABANDONMENT

- A. Cement-based slurry shall be used for filling the pipe ends and valves boxes as shown on the drawings and shall consist of a mixture of Type II Portland cement, water and mortar sand specified below. The slurry shall be in accordance with ASTM C94 for controlled low strength material (CLSM).
- B. Concrete plugs shall be used to cap the ends of all abandoned pipelines.
- C. The sand shall consist of clean grains of hard, strong, durable materials, free from alkali, organic matter, or other deleterious substances. The flowability shall be 100%.
- D. The Contractor shall not use quick-setting cement, accelerators, or other constituents, without the Engineer's written approval.
- E. Materials
 - 1. Compressive Strength.
 - a. Grout shall have a minimum penetration resistance of 100 psi in 24 hours when tested in accordance with ASTM C403
 - b. Grout shall have a minimum compressive strength of 300 psi in 28 days, and maximum compressive strength of 600 psi in 28 days when tested in accordance with ASTM C495 or C109.
 - 2. The grout shall have less than one percent shrinkage by volume.
 - 3. The apparent viscosity shall not exceed 35 seconds in accordance with ASTM C939.
 - 4. Provide mix design in accordance with ACI and ASTM standards for approval.

PART 3 - EXECUTION

3.01 PIPELINES

A. Procedures (Pipe Abandonment)

1. Pipelines to be abandoned shall be abandoned in place. The ends of the pipeline to be abandoned shall be cut and capped with a minimum of 2-feet of concrete mixture. No pipeline shall be abandoned until the new pipeline system and all services are installed, tested and in service. An abandonment plan must be prepared by the Contractor and approved by the Owner prior to abandonment of any facilities.
2. Cement slurries – Neat cement or concrete slurries shall be prepared by adding cement or sand-and-cement to the calculated required volume of clean water. The material shall be mixed in the mixing equipment until it is adequately mixed and free of lumps, then immediately pumped into the pipe without delay.

3.02 WATER SERVICE LATERALS

- #### **A. Typically, water service laterals will be abandoned in place and replaced. No portion of the previous water service lateral shall be present inside the meter box after abandonment. Services shall be cut and capped below grade to avoid accidental reconnection.**

3.03 STRUCTURES (VALVE BOXES & HYDRANTS)

- A. Valve boxes to be abandoned shall be removed to a point 36-inches below the proposed street grade or ground surface and filled with AB compacted to 90% in paved and concrete areas or filled with native and topsoil in unpaved or non-hardscape areas.
- B. Existing wharf hydrants shall be dug up to and removed to the J-Stand and returned to Olivehurst Public Utility District's yard for storage. The remaining fire hydrant assembly may be abandoned per OPUD standards.

3.04 DISPOSAL OF MATERIALS

- #### **A. Contractor is responsible to legally dispose of all materials (including existing AC Pipe removed during abandonment and tie-ins).**

END OF SECTION

SECTION 03301
CAST-IN-PLACE CONCRETE

PART 1 - PART 1 - GENERAL

1.01 SUMMARY

- A. Description of Work: Provide concrete work, complete in-place in accordance with the Contract Documents, including formwork, placement and finishing.
- B. Related Work Specified Elsewhere: The General and Supplementary Conditions and applicable sections of Division 1 form a part of this Section.

1.02 REFERENCE DOCUMENTS

- A. Standard Specifications: Whenever the words "Standard Specifications" are referred to in this Specification, the reference is to the State of California, Department of Transportation (CAL-TRANS), Standard Specifications Latest Edition. Standard Specifications paragraphs regarding measurement and payment are excluded.

1.03 SUBMITTALS

- A. Submit all items specified in this Paragraph in accordance with Section 01330 SUBMITTALS for review at the same time. Submit the following:
 - 1. Cement Certification
 - 2. Aggregate Certification
 - 3. Curing Method and Curing Material Proposed
 - 4. Admixtures (if any)
 - 5. Mix Design

1.04 QUALITY ASSURANCE

- A. All concrete for the project shall be controlled concrete of specified strengths, of uniform color, and free from defects liable to adversely affect strength or durability of the structure or its components.
- B. Workmanship: Materials and methods used for the production and placement of concrete shall be such as to assure the specified quality and shall conform to applicable requirements of the Building Code for Reinforced Concrete (ACI 318 and ACI 614) of the American Concrete Institute, except as otherwise specified in this Section.
- C. Defective Concrete Surfaces shall be repaired or replaced as directed at no additional expense to the Agency.
- D. Uniformity of Concrete: All aggregates shall be measured by weight or by an equivalent accurate method and the proportion of water to cement shall be accurately controlled by either automatic measuring devices or calibrated containers. All concrete placed shall be of uniform strength and color appearance as well as surface texture.

PART 2 - PRODUCTS

2.01 CONCRETE MATERIALS

- A. Portland Cement: ASTM C150, Type II, low alkali. All cement used shall be of one manufacturer.
- B. Water: Clean and free from deleterious amounts of acids, alkalis, salts and organic matter.
- C. Sand: Clean, washed river sand.
- D. Air Entraining Agents shall be used where specified hereinafter. Approved agents are Sika AER, Master Buildings MBAE-10, Darex AERA and Protex AEA. Entrained air content shall not exceed 3 percent by volume.

2.02 CURING COMPOUND

- A. Liquid membrane, ASTM C309, Type I.

2.03 CURING SHEET MATERIAL

- A. ASTM C171.

2.04 ADMIXTURES

- A. Except for air entraining agents and water-reducing admixtures, no other admixtures shall be used without written approval from the Engineer.
- B. Calcium chloride will not be permitted for use in concrete under any circumstances.

2.05 DESIGN OF MIX:

- A. Compressive Strength
 - 1. 3000 psi minimum 28-day compressive strength for all concrete.
- B. Cement Content shall contain not less than six sacks Portland cement per cubic yard.
- C. Aggregate Size: 3/4" maximum.
- D. Concrete Mixing
 - 1. Ready-Mixed Concrete: ASTM C94 except as otherwise specified herein.
 - 2. Slump: 4" maximum for all structural concrete as determined by ASTM C143. 6" maximum for all others.
 - 3. Temperature of concrete shall be a maximum of 80 degrees F at time of placing.

2.06 CONCRETE ADHESIVE

- A. Concrete adhesive shall be "Concresive" epoxy polysulfide or equivalent Sika product or equal.

2.07 FORM MATERIALS

- A. Forms shall be new materials of Douglas Fir, Construction Grade, S1S2E, or Douglas Fir Plywood, five-ply, 5/8-inch, B-B Plyform, Class 1 Exterior Type with mill-oiling treatment omitted.
- B. Adequacy of the form, bracing, and shoring shall be the sole responsibility of the Contractor. The design shall meet the requirements of ACI 301.
- C. Forms shall be mortar tight.

2.08 REINFORCING MATERIALS

- A. Reinforcing Bars: ASTM A615, Grade 60.
- B. All reinforcing bars shall be stored at the site so as to prevent contact with the earth.
- C. Insert Anchor: Red Head as manufactured by ITT Phillips Drill Division.
- D. For Driveway, Curb, Gutter and Sidewalk Repair refer to Placer County General Specifications (latest edition) and Placer County Engineering Design Plates.

2.09 EXPANSION JOINT FILLER

- A. Unless otherwise shown on the Drawings, expansion joint filler shall be asphalt saturated fiber in accordance with ASTM-D 1751. Joint filler shall be 1/2-inch thick by depth of slab minus 1/2-inch, unless otherwise noted.
- B. For Driveway, Curb, Gutter and Sidewalk Repair refer to Placer County General Specifications (latest edition) and Placer County Engineering Design Plates.

2.10 SEALANT

- A. Sealant to seal expansion joints and crack control joints shall be as follows:
 - 1. W.R. Meadows #164 Polymer Sealing Compound or Sof-Seal or equal.

PART 3 - EXECUTION

3.01 FORMS

- A. Build and erect forms to conform to the required shapes, patterns, lines, grades and dimensions indicated. Forms shall be substantial and tight to prevent leakage of mortar, and shall be properly braced and tied together to maintain position and shape. Provide chamfered corners where indicated.
- B. Concrete work out of alignment, level or plumb, will be cause for rejection of the whole work affected, and if so, rejected such work shall be removed and replaced at no increase in cost to the Agency.

3.02 REINFORCEMENT FABRICATION

- A. Steel reinforcement shall not be bent or straightened in a manner that will injure the material. Bars with kinks or bends not shown on the Drawings shall not be used. Heating of the bars for bending will not be permitted.

3.03 REINFORCEMENT PLACEMENT

- A. Placement: All reinforcement shall be accurately set in place, lapped, spliced, space rigidly and securely held in place, tied with the specified wire at all splices and crossing points.
- B. Cleaning: Reinforcing steel, at the time the concrete is placed around it, shall be cleaned of rust, scale, mill scale or other coatings that will destroy or reduce bond.

3.04 EXPANSION JOINTS

- A. Provide expansion joints of the size and location as shown on the Drawings or as specified. Expansion joint filler shall be installed 1/2-inch below surface of concrete where applicable and sealed with sealant unless otherwise noted.

3.05 CONCRETE PLACEMENT

- A. Surrounding Conditions: Before any concrete is placed, the following items of work shall have been completed in the area of placing.
 - 1. Reinforcing steel shall have been placed, tied and supported.
 - 2. Embedded work of all trades shall be in place in the forms and adequately tied and braced.
 - 3. The entire place of deposit shall have been cleaned of wood chips, sawdust, dirt, debris, hardened concrete and other foreign matter.
 - 4. Concrete surfaces to which fresh concrete is to be bonded shall be saw-cut and broken away. Surfaces shall be brush cleaned to remove all dust and foreign matter and to expose the aggregate, and then coated with the bonding adhesive herein specified.
- B. Conveying concrete from mixer to forms shall be as rapid as possible, but shall in no case be longer than one hour from when the concrete was added to the aggregate.
- C. Placing Concrete:
 - 1. Before starting new pour on or against concrete that has hardened, the hardened concrete shall be roughened and thoroughly cleaned of foreign matter and any laitance.
 - 2. No adjustment of steel reinforcement will be permitted during the placement of concrete.
 - 3. The concrete shall be scheduled so that placing is a continuous operation for the completion of each section between predetermined construction joints. Location of construction joints shall be as indicated by note on the Drawings.

3.06 CRACK CONTROL JOINTS

- A. Concrete Slabs: Crack control joint spacing in feet should not exceed twice the slab thickness in inches unless otherwise noted on the Drawings. For example, a 5-inch thick slab would require expansion joints at 10 feet on center. Lay out joints to form square panels, when not practical, rectangular panels may be used, however in no case shall the long side exceed one and one half times the short side. (10' x 15' for 5" thick slab). Crack control joints shall be 1/8-inch thick (minimum) with a minimum depth of 1/4 the thickness of the slab. Crack control joints shall be constructed by scoring the concrete with a suitable tool or sawcutting, provided the sawcutting is performed no later than 24 hours after the concrete has been placed.

3.07 CONCRETE FINISHES

- A. All Concrete Work: except as otherwise specified, shall be of a quality that will present a finished appearance upon the stripping of the forms. Only a minimum of patching and finishing should be necessary as required to fill holes left by form ties and to remove any fins or minor irregularities left by the joints in the forms.
- B. Unless otherwise noted, all concrete flat work shall receive a medium broom finish after final trowelling.

3.08 CONCRETE CURING

- A. Carefully and thoroughly cure all newly placed concrete.
 - 1. Concrete Slabs: Apply the specified liquid curing compound and hardener according to manufacturer's written directions. Apply at minimum rate of 300 square feet per gallon for smooth surfaces and 200 square feet per gallon for rough surfaces.

3.09 MISCELLANEOUS WORK

- A. Patchwork: Where concrete requires patching, filling, or tying into, concrete shall be mixed, placed and finished in the same manner as specified for new concrete. Surfaces to which new concrete must bond shall be thoroughly cleaned and coated with concrete adhesive. Carefully rod or vibrate concrete to eliminate air pockets and ensure concrete is filling holes full. Use low slump concrete to minimize shrinkage.

3.10 CLEANING AND PROTECTION

- A. Clean all surfaces and leave in satisfactory condition.
- B. Protect concrete surfaces from damage by tools, equipment, materials and workmen. No traffic, shoring or other loading will be permitted on concrete until it has hardened sufficiently to prevent injury to finish and strength. In any case, all concrete shall be cured a minimum of seven days before the removal of shoring or allowing any loading, including backfill.

END OF SECTION

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SECTION 15060
DUCTILE IRON PIPE AND FITTINGS

PART 1 - GENERAL

1.01 REFERENCES

- A. The following is a list of standards that may be referenced in this section:
1. American Association of State Highway and Transportation Officials (AASHTO): T99, Standard Method of Test for the Moisture-Density Relations of Soils Using a 2.5 kg (5.5 lb) Rammer and a 305 mm (12 in.) Drop.
 2. American Society of Mechanical Engineers (ASME):
 - a. B16.21, Nonmetallic Flat Gaskets for Pipe Flanges.
 - b. B16.42, Ductile Iron Pipe Flanges and Flanged Fittings Classes 150 and 300.
 3. American Water Works Association (AWWA):
 - a. C104/A21.4, Cement-Mortar Lining for Ductile-Iron Pipe and Fittings.
 - b. C105/A21.5, Polyethylene Encasement for Ductile-Iron Pipe Systems.
 - c. C110/A21.10, Ductile-Iron and Gray-Iron Fittings.
 - d. C111/A21.11, Rubber-Gasket Joints for Ductile-Iron Pressure Pipe and Fittings.
 - e. C115/A21.15, Flanged Ductile-Iron Pipe with Ductile-Iron or Gray-Iron Fittings.
 - f. C116/A21.16, Protective Fusion-Bonded Epoxy Coatings for the Interior and Exterior Surfaces of Ductile-Iron and Gray-Iron Fittings for Water Supply Service.
 - g. C150/A21.50, Thickness Design of Ductile-Iron Pipe.
 - h. C151/A21.51, Ductile-Iron Pipe. Centrifugally Cast, for Water.
 - i. C153/A21.53, Ductile-Iron Compact Fittings for Water Service.
 - j. C600, Installation of Ductile-Iron Water Mains and Their Appurtenances.
 - k. C606, Grooved and Shouldered Joints.
 4. ASTM International (ASTM):
 - a. A307, Standard Specification for Carbon Steel Bolts and Studs, 60,000 psi Tensile Strength.
 - b. A563, Standard Specification for Carbons and Alloy Steel Nuts.
 - c. D882, Standard Test Method for Tensile Properties of Thin Plastic Sheeting.
 - d. D1330, Standard Specification for Rubber Sheet Gaskets.
 - e. D1922, Standard Test Method for Propagation Tear Resistance of Plastic Film and Thin Sheeting by Pendulum Method.
 - f. D2000, Standard Classification System for Rubber Products in Automotive Applications.
 - g. D4976, Standard Specification for Polyethylene Plastics Molding and Extrusion Materials.
 5. International Organization for Standardization (ISO): 9001, Quality Management Systems – Requirements.

1.02 SUBMITTALS

- A. Action Submittals:
1. Shop Drawings: Marking plan and details of standard pipe section showing dimensions, pipe joints, fitting and special fitting pressure rating and thickness, size, coating and lining data.

B. Informational Submittals:

1. Field Hydrostatic Testing Plan: Submit at least 15 days prior to testing and at minimum, include the following:
 - a. Testing dates.
 - b. Piping systems and section(s) to be tested.
 - c. Method of isolation.
 - d. Method of conveying water from source to system being tested.
 - e. Calculation of maximum allowable leakage for piping section(s) to be tested.
2. Certifications of Calibration: Approved testing laboratory certificate if pressure gauge for hydrostatic test has been previously used. If pressure gauge is new, no certificate is required.
3. Test documentation form and results.

1.03 QUALITY ASSURANCE

- A. Pipe manufacturer shall be ISO 9001 registered or provide the services of an independent inspection agency.
- B. Prior to start of manufacturing, manufacturer not meeting or having ISO registration requirements shall submit name of at least two independent inspection agencies for approval.
 1. Independent inspection agency shall be responsible, on a daily basis, for sample monitoring of chemical and mechanical tests, sample visual inspection of quality assurance tests performed on in-process pipe and fittings, and sample visual and dimensional inspection on finished products.

PART 2 - PRODUCTS

2.01 MATERIALS

A. General:

1. Ductile iron pipe shall be manufactured, lined, coated, and tested domestically in the United States of America.
2. Ductile iron fittings shall be manufactured, lined, coated, and tested domestically in the United States of America.
3. Pipe manufacturer shall certify source manufacturing facility has been producing ductile iron pipe of the specified diameters, pressure, dimensions and standards for a period of not less than 10 years.
4. Ductile iron pipe and fitting shall be supplied by a single manufacturer.
 - a. Mixing of components and sources is not permitted.

B. Pipe:

1. General:
 - a. Pipe shall be new and recently manufactured. Refurbished pipe shall not be provided.
 - b. Lined and coated as specified.
2. Meet requirements of AWWA C150/A21.50, AWWA C151/A21.51, and AWWA C111/A21.11.
3. Centrifugally cast, grade 60 42 10 iron.
4. Pressure rating of pipe from 6 inches to 8 inches in diameter shall be 150 psi.

5. Pipe wall thickness of threaded pipe for a flanged pipe end shall be minimum [H: special thickness Class 53 from 12 inch to 54 inch] [I: pressure Class 350 for 60 inch to 64 inch] diameter pipe in accordance with AWWA C115/A21.15.
6. Grooved end pipe shall be minimum Special Class 53.

C. Joints:

1. Push-On Joint: Rated at minimum working pressure equal to pipe material design.
2. Restrained Joint:
 - a. Manufactured proprietary joint that mechanically restrains pipe to adjoining pipe.
 - b. Manufacturers and Products:
 - 1) American Cast Iron Pipe; Flex-Ring, Field Flex-Ring, and Lok-Ring.
 - 2) Pacific States Pipe; Thrust-Lock.
 - 3) U.S. Pipe; TR Flex and HP Lok.
3. Mechanical Wedge Action Type Joint:
 - a. Use only in areas where adjoining to fixed points where laying length is determined in field.
 - b. Prior to purchase and installation, type and application of this joint shall be approved by Engineer.
4. Use of set screws for restraint or field-lock gaskets shall not be allowed.
5. Grooved Joint:
 - a. Rigid type radius cut grooved, conforming to AWWA C606.
 - b. Manufacturer: Victaulic Company of America.
6. Ball Joint:
 - a. Meet requirements of AWWA C151/A21.51.
 - b. Minimum Working Pressure:
 - 1) 4 inch through 12 inch Diameter: 350 psi.
 - 2) Larger than 12 inch Diameter: 250 psi.
 - c. Manufacturers and Products:
 - 1) American Cast Iron Pipe; Flex-Lock.
 - 2) U.S. Pipe; USIFLEX.

D. Fittings

1. Fittings shall be new and recently manufactured. Refurbished fittings will not be accepted.
2. Mechanical, Push-On, Flanged, or Restrained Joint:
 - a. In accordance with the following table:

Minimum Pressure Ratings for AWWA C110/A21.10 and C115/A21.15 Ductile Iron Fittings		
Diameter (inches)	Rubber Gasket Joints (Push-on, Mechanical, Restrained) (psi)	Flanged Joints (psi)
3 to 24	350	350
30 to 48	250	250
Minimum Pressure Ratings for AWWA C153/A21.53 Ductile Iron Fittings		
Diameter (inches)	Rubber Gasket Joints (Push-on, Mechanical, Restrained) (psi)	Flanged Joints
3 to 24	350	Not included in C153/A21.53 (refer to the C110/A21.10 Standard)
30 to 48	250	Not included in C153/A21.53 (refer to the C110/A21.10 Standard)
54 to 64	150	150 psi

3. Rubber Gasket Joints Including Mechanical Joints, Push-On Joints, and Flanged Joints: In accordance with AWWA C111/A21.11 or ASME B16.42.
 4. Mechanical Joint Fittings: In accordance with AWWA C110/A21.10 and AWWA C153/A21.53.
 5. Grooved End Fittings:
 - a. Radius cut grooved, rigid type conforming to AWWA C110/A21.10 and AWWA C153/A21.53.
 - b. Manufacturers:
 - 1) Victaulic Company of America.
 - 2) Gustin-Bacon.
- E. Welded Outlet: Only weld to pipe in manufacturer's shop.
- F. Lining:
1. Pipe and fittings for clean water applications shall be cement-lined and asphaltic seal coated as recommended by manufacturer in accordance with AWWA C104/A21.4.
- G. Coating: Asphaltic type, 1 mil thick, in accordance with AWWA C151/A21.51, AWWA C115/A21.15, AWWA C110/A21.10, and AWWA C153/A21.53.
- H. Polyethylene Encasement:
1. Virgin polyethylene raw material conforming to requirements of ASTM D4976.

2. Elongation: 800 percent, minimum, in machine and transverse direction (ASTM D882).
 3. Tensile Strength: 3,600 psi, minimum.
 4. Dielectric Strength: 800V per mil-thickness, minimum.
 5. Propagation Tear Resistance: 2,550 gram force (gf), minimum, in machine and transverse direction (ASTM D1922).
 6. Tube Form: Conform to AWWA C105/A21.5.
 7. Film: 0.008 inch (8 mil) thick, minimum.
 8. Number of Film Layers: One.
- I. Bolting:
1. Flanged Connection Bolts: Carbon steel, ASTM A307, Grade A hex bolts and ASTM A563, Grade A hex head nuts.
 2. Grooved End Connections Bolts: Manufacturer's standard.
- J. Gaskets:
1. Flat Faced Flange Gaskets:
 - a. Pipe Smaller Than 54 Inches: Rated for working pressure 150 psi to 250 psi, 1/8 inch thick, red rubber (SBR), hardness 80 (Shore A), rated to 200 degrees F, conforming to ASME B16.21, AWWA C207, and ASTM D1330, Grade 1 and Grade 2.
 - b. Pipe 54 Inches and Larger: Rated for working pressure greater than 250 psi; shall be Toruseal gaskets as manufactured by American Ductile Iron Pipe or Flange-Tyte gaskets as manufactured by U.S. Pipe.
 2. Grooved End Joint Gaskets: Halogenated butyl, conforming to ASTM D2000 and AWWA C606.

PART 3 - EXECUTION

3.01 EXAMINATION

- A. Inspect pipe and fittings to ensure no cracked, broken, or otherwise defective materials are being used.

3.02 PREPARATION

- A. Trench Grade:
1. When specified, grade bottom of trench by hand to specified line and grade with proper allowance for pipe thickness and pipe base. Trench bottom shall form a continuous and uniform bearing and support for pipe between bell holes.
 2. Before laying each section of pipe, check grade and correct irregularities found. Grade may be disturbed for removal of lifting tackle.
- B. Pipe Bedding: Place and compact pipe bedding material as follows:
1. Install to full width of trench, from the following depths below bottom to springline of pipe:
 - a. Pipe 12 Inch Diameter: 3 inches to 6 inches.
 - b. Pipe Larger than 12 Inch Diameter: 6 inches to 8 inches.
 2. Compact to at least 95 percent of its maximum density
 3. Ensure that no unfilled or uncompacted areas occur beneath pipe.

- C. Bell (Joint) Holes: At each joint, dig bell holes of ample dimensions in bottom of trench, and at sides where necessary, to permit joint to be made properly and to permit easy visual inspection of entire joint.

3.03 INSTALLATION

A. General:

1. Provide and use proper implements, tools, and facilities for safe and proper prosecution of the Work.
2. Lower pipe, fittings, and appurtenances into trench, piece by piece, by means of a crane, slings, or other suitable tools and equipment, in such a manner as to prevent damage to pipe materials, protective coatings and linings.
3. Do not drop or dump pipe materials into trench.

B. Cleaning Pipe and Fittings:

1. Remove lumps, blisters, and excess coal tar coating from bell and spigot ends of each pipe. Wire brush outside of spigot and inside of bell and wipe clean, dry, and free from oil and grease before pipe is laid.
2. Wipe ends of mechanical joint pipe and fittings and of rubber gasket joint pipe and fittings clean of dirt, grease, and foreign matter.

C. Laying Pipe:

1. Direction of Laying: Lay pipe with bell end facing in direction of laying. For lines on an appreciable slope, face bells upgrade at discretion of Engineer.
2. Mechanical Joint, Push-On Joint, and Restrained Joint Pipe: After first length of pipe is installed in trench, secure pipe in place with approved backfill material tamped under and along sides to prevent movement. Keep ends clear of backfill. After each section is jointed, place backfill as specified to prevent movement.
3. Take precautions necessary to prevent floating of pipe prior to completion of backfill operation.
4. When using movable trench shield, take necessary precautions to prevent pipe joints from pulling apart when moving shield ahead.
5. Do not allow foreign material to enter pipe while it is being placed in trench.
6. Close and block open end of last laid section of pipe to prevent entry of foreign material or creep of gasketed joints when laying operations are not in progress, at close of day's work, or whenever workers are absent from job.

D. Joining Push-On Joint Pipe and Mechanical Joint Fittings:

1. Join pipe with push-on joints and mechanical joint fittings in accordance with manufacturer's recommendations.
2. Provide special tools and devices, such as, special jacks, chokers, and similar items required for installation.
3. Lubricate pipe gaskets using lubricant furnished by pipe manufacturer. No substitutes will be permitted.
4. Clean ends of fittings of dirt, mud, and foreign matter by washing with water and scrubbing with a wire brush, after which, slip gland and gasket on plain end of pipe. If necessary, lubricate end of pipe to facilitate sliding gasket in place, then guide fitting onto spigot of pipe previously laid.

E. Ball Joint Pipe:

1. Assemble and install in accordance with manufacturer's recommendations.
2. Hydrostatic Test:

- a. Conduct on ball joint pipe independent of other pipe systems/type being installed.
- b. Conduct test in accordance with requirements of these Specifications and manufacturer's recommendations.

F. Cutting Pipe:

1. General: Cut pipe for inserting valves, fittings, or closure pieces in a neat and workmanlike manner without damaging pipe or lining and so as to leave a smooth end, at right angles to axis of pipe.
2. Pipe: Cut pipe with milling type cutter or saw. Do not flame cut.
3. Dressing Cut Ends: Dress cut end of mechanical joint pipe to remove sharp edges or projections, which may damage rubber gasket. Dress cut ends of push-on joint pipe by beveling, as recommended by manufacturer.

G. Field Welding:

1. Use of field welded outlets will not be allowed. Welding for outlets shall be performed only in pipe manufacturer's shop.
2. Field installed outlets may be installed with saddle approved by Engineer. Opening in pipe shall be machined cut and not with cutting torch.

H. Line and Grade:

1. Minimum Pipe Cover: 3 feet, unless otherwise indicated.
2. No high points will be allowed between air valves.
3. Maintain pipe grade between invert elevations to provide minimum clearance at air valve locations of 4 feet from existing ground surface to top of pipe.
4. Install air valves as shown and field verify intervening low points. When field conditions warrant, exceptions may be made upon approval of Engineer.
5. Deviations exceeding 6 inches from specified line or 1 inch from specified grade will not be allowed without express approval of Engineer.
6. Pipeline sections that are not installed to elevations shown or installed as approved by Engineer shall be reinstalled to proper elevation.

I. Thrust Restraint:

1. Primary method of restraint shall be through use of restrained joint pipe. Thrust blocking shall be used where detailed on Drawings and as approved by Engineer.

J. Backfill for Pipe Zone: Place and compact pipe zone material as follows:

1. After pipe bedding is in place, place imported granular material at approximately same rate on each side of pipe.
2. Place such that backfill elevation of is approximately equal on each side of pipe at all times.
3. Place to the following depths: 12 inches above top of pipe barrel.
4. Compact material to top of pipe zone in 12 inch lifts, to at least 95 percent of its maximum density, as determined by AASHTO T99.

K. Polyethylene Encasement:

1. Encase pipe, fittings, and valves where specified in accordance with AWWA C105/A21.5, Method A.
2. Cut polyethylene tube approximately 2 feet longer than pipe length.
3. Slip tube around pipe, centering to provide 1 foot overlap on each adjacent section.
4. Pull encasement to take out slack and wrap snug around pipe.

5. Secure overlap in place and fold at quarter points of pipe length.
6. Wrap and tape encasement snug around fittings and valves.

3.04 HYDROSTATIC TESTING

A. Pipeline Hydrostatic Test:

1. General:
 - a. Notify Engineer in writing 5 days in advance of testing. Perform testing in presence of Engineer.
 - b. Test newly installed pipelines using water as test medium, pipes shall successfully pass a leakage test prior to acceptance.
 - c. Furnish testing equipment and perform tests in manner satisfactory to Engineer. Testing equipment shall provide observable and accurate measurements of leakage under specified conditions.
 - d. Isolate new pipelines that are connected to existing pipelines.
 - e. Conduct tests on entire pipeline after trench has been backfilled. Testing may be done prior to placement of asphaltic concrete or roadway structural section.
 - f. Contractor may, if field conditions permit and as determined by Engineer, partially backfill trench and leave joints open for inspection and conduct an initial service leak test. Hydrostatic test shall not, however, be conducted until backfilling has been completed.
 - g. Supply of temporary water shall be approved by the District.
 - h. Dispose of water used in testing.
2. Procedure:
 - a. Maximum filling velocity shall not exceed 0.25 foot per second, calculated based on the full area of pipe.
 - b. Expel air from pipe system during filling. Expel air through air release valve or through corporation stop installed at high points and other strategic points.
 - c. Test pressure shall be 150 psi.
 - d. Apply and maintain specified test pressure with hydraulic force pump. Valve off piping system when test pressure is reached.
 - e. Maintain hydrostatic test pressure continuously for 4 hours minimum, adding additional make-up water only as necessary to restore test pressure.
 - f. Determine actual leakage by measuring quantity of water necessary to maintain specified test pressure for duration of test.
 - g. If measured leakage exceeds allowable leakage or if leaks are visible, repair defective pipe section and repeat hydrostatic test.
3. Allowable Leakage:
 - a. Allowable leakage is determined by spec section 01 21 19 – Pressure and Leakage Test.

END OF SECTION

SECTION 15080
PIPE FITTINGS AND ACCESSORIES

PART 1 - GENERAL

1.01 DESCRIPTION

- A. Work Included: Furnish all labor, materials, equipment and incidentals required to install and test pipe and related equipment as shown on the drawings and specified herein.

1.02 REFERENCE PUBLICATIONS

- A. American Society for Testing and Material (ASTM)
- B. American Water Works Association (AWWA)
- C. Steel Structures Painting Council (SSPC)
- D. Drinking Water System Components (NSF/ANSI Standard-61), meeting no lead requirements

1.03 QUALITY ASSURANCE

- A. All equipment furnished under this Section shall be of a single manufacturer who is regularly engaged in the design and manufacture of the equipment specified. Manufacturer shall demonstrate to the satisfaction of the Engineer that the quality is equal to equipment made by those manufacturers specifically named. The manufacturer shall have produced the specified items for at least ten (10) years.

1.04 PRODUCT HANDLING

- A. Exercise care in transporting and handling to avoid damage to pipe, fittings, and any ancillary materials. Avoid long exposure of non-metallic pipe to direct sunlight by storing materials on site in enclosures or under protective opaque coverings. Do not store materials directly on the ground. Keep the inside of pipes, fittings, and ancillary materials free of dirt and debris.

1.05 SUBMITTALS

- A. Submittals required shall be in accordance with Owners Standard specifications and the Contract Specifications.
- B. The Owner nor any of the Owner's representatives assume responsibility for any items assembled or manufactured prior to approval of a corresponding submittal.
- C. Shop Drawings:
 - 1. Submit shop drawings for approval of the pipe assemblies, and related materials and equipment. Include sufficient data to show that materials and equipment conform to Specification requirements, including test procedures.

2. Dimensional assembly drawings with plans, sections, details, showing the arrangement of the component parts, parts list, material designations and finishes.
 3. Complete installation drawings of the equipment and accessory items, showing related items and equipment specified elsewhere.
- D. Manufacturer's Data:
1. Provide manufacturer's data indicating all descriptive information, leakage rates, friction loss, and capacities.
- E. Design Analysis:
1. All structural, and mechanical, calculations required shall be submitted for approval.
- F. Manuals:
1. Furnish manufacturer's installation, operation and maintenance manuals, bulletins, and parts lists.
- G. Tools:
1. Furnish one complete set of any special items required for installation and/or maintenance.
- H. Testing:
1. Furnish a complete testing procedure outline for Owner approval, indicating test equipment to be used, duration, methods, etc.

PART 2 - PRODUCTS

2.01 ACCEPTABLE MANUFACTURES

- A. See the following for acceptable manufacturers for each type of material.

2.02 WATER SERVICE ASSEMBLIES AND BOXES

- A. Refer to Owners pre-approved material listing for the following:
1. Service Saddles (for PVC): Mueller-Bronze – H13000 Series
 2. Corporation Stop Valves: Mueller-Bronze – with transition coupling for 1” Polyethylene service pipe.
- B. Water Service Piping (Main to Meter):
1. Materials:
 - a. Water service pipe material up to and including 2 inches in diameter must be polyethylene pressure pipe meeting standards of AWWA C901. Polyethylene pipe must be high density, ultrahigh molecular weight and meet all applicable requirements, including testing, of Type III, Grade P33 or P34, Class C, designated as PE 4710 in ASTM D2239 and D1248. The polyethylene pipe must have a minimum pressure rating of 250 psi, must be homogeneous throughout and free of cracks, holes, foreign inclusions or other defects, must be uniform in color, opacity, density and other physical properties. Polyethylene pipe must be supplied with markings, at intervals of not more than

5 feet, indicating nominal pipe size, designation, pressure class, and manufacturer's name or trademark. Polyethylene must be manufactured to iron pipe size (IPS).

Materials to be used for service installation are to be the following or approved equal:

- b. C-900 Mueller saddle with 1" tap (IP Thread)
- c. 1" Mueller Corp Stop
- d. 1" Poly (CTS) (Blue or Black)
- e. #10 insulated solid tracer wire
- f. (2) stainless steel inserts for the poly
- g. Mueller curb stop 90 (1" Compression by 3/4" Meter ready) Mueller code is (B-24258N341) Ford code is (BA43-342W-Q-NL)
- h. Backfill material will be sand 1' over the pipe
- i. 6" Nondetectable Blue Marking Tape"
- j. 3/4" Meter spud (straight or 90) with new gaskets

2. Execution:

- a. Polyethylene water service piping shall be connected to the existing meter using an approved transition fitting and tested for leaks at the main line operating pressure.
- b. Long-side services shall be installed such that the service saddle is at 45 degrees to the horizontal and the service shall reach and maintain a depth of bury of 2.5' Measured at the edge of pavement. The intent is to leave room for future storm drain mains to be constructed in the opposite lane.
- c. Short-side services shall be installed per The District's standard detail 8-32 (6/D3) and detail 7/D3.

3. Testing:

- a. Visual inspection of transition couplings and fittings shall be performed after the crossover has been made and new service line is active before service installation is considered complete.

C. Fittings:

- 1. Brass fitting shall be NSF-61 approved and compatible with the pipe they are connecting.
- 2. Transition couplings for HDPE to be Mueller Co - E-15429N - Pack Joint (IPS) x M.I.P Thread - (No Lead Bronze) or approved equal.

D. Water Meters, Setters and Boxes:

- 1. Existing components shall be reused unless determined by The District Inspector to be inadequate for reuse.
- 2. All water meters shall be Sensus, and shall read in hundred cubic feet (CCF), have TRPL with MXU (Radio Read). Standard residential shall be 1"Ø. All larger diameter commercial meters to be SAME Badge model with the same requirements as residential meters, unless otherwise specified by the District.

- a. Meter setters shall be used for 1" with a brass nipple out the back of the setter for 1" services, and shall be Mueller Co.
 - b. Meter boxes shall include risers as needed and shall be per the District Standard Details.
 - c. All meter box lids shall be provided with a touch pad hole. Provide traffic rated lids for driveway locations.
3. Meter Box Locations:
- a. All Meter Boxes shall be relocated per Meter Sheet G8 & Detail Sheet D4.
 - b. Final Meter Box locations shall be coordinated with the property owners and approved by The District Inspector.

2.03 FLANGED COUPLING ADAPTORS

- A. Furnish and install where shown on drawings flanged coupling adapters on pipes. Couplings shall be:
 - 1. Smith-Blair, Inc. Model 913
 - 2. Romac 501
 - 3. or approved equal.
- B. Fittings shall be NSF 61 certified.
- C. FCAs shall include anchor studs for thrust restraint per manufacturer recommendations.
- D. Materials:
 - 1. Cast couplings shall be used wherever possible. Steel couplings with a minimum sleeve thickness of the connecting pipe wall or ¼ inch, whichever is greater, shall be used where cast couplings are not available.
 - a. Sleeve – Steel per ASTM A283C
 - 1) Flanges – Malleable iron, ductile iron or high-strength steel.
 - 2) Bolts and Nuts – Low alloy, corrosion resistant high strength, steel per AWWA C111/A21.11
 - 3) Finish of coupling – Fusion epoxy coating per AWWA C213.
 - 4) Gaskets – Synthetic rubber (Buna-N) per ASTM D2000.

2.04 FLANGE COUPLING ADAPTER (RESTRAINED)

- A. Furnish and install where shown on drawings restrained flanged coupling adapters on pipes. Couplings shall be:
 - 1. Smith-Blair, Inc. Model 920
 - 2. Romac RFCA-PVC
 - 3. EBAA 2100 Megaflange
 - 4. Star Series 7200 Super Flange
 - 5. or approved equal.
- B. Fitting shall be NSF 61 certified.
- C. RFCAs shall include anchor studs for thrust restraint per manufacturer recommendations.

D. Materials:

1. Cast couplings shall be used wherever possible. Steel couplings with a minimum sleeve thickness of the connecting pipe wall or ¼ inch, whichever is greater, shall be used where cast couplings are not available.
2. Sleeve – Steel per ASTM A283C
3. Flanges – Malleable or ductile iron or high-strength steel.
4. Bolts and Nuts – Low alloy, corrosion resistant high strength, steel per AWWA C111/A21.11
5. Finish of coupling – Fusion epoxy coating per AWWA C213.
6. Gaskets – Synthetic rubber (Buna-N) per ASTM D2000.

2.05 COMPRESSION SLEEVE COUPLING

A. Furnish and install where shown on drawings flanged coupling adapters on pipes. Couplings shall be:

1. Krausz Hymax 2 Coupling
2. Romac 501
3. or approved equal.

B. Fitting shall be NSF 61 certified.

C. Material:

1. End Rings: ASTM A283/A283M Grade C Steel
2. Bolts: Low alloy, corrosion resistant high strength, steel alloys, AISI 304 or SS316 Stainless Steel.
3. Gaskets – Synthetic rubber EPDM suitable for potable water application).
4. Finishing of coupling – Fusion bonded epoxy

2.06 MECHANICAL JOINT RESTRAINT

A. Furnish and install where required in accordance with the drawings. Couplings shall be:

1. EBAA Iron 2000PV
2. EBAA 15MJ00TD
3. Star, Stargrip Series 4000 G2 & HD
4. Romac, PVC Romagrip
5. Sigma One-Lok Series SLCE
6. or approved equal.

B. Fitting shall be NSF 61 certified.

C. Materials:

1. Restraint devices shall conform to AWWA C111 and C153
2. Gland body, wedges and wedge actuating components shall be cast from grade 65-45-12 ductile iron material in accordance with ASTM A536.
3. Bolts and Nuts – Low alloy, corrosion resistant high strength, stainless steel alloys in the 300 series.
4. Finish of coupling – Fusion epoxy coating per AWWA C213.

2.07 PUSH-ON JOINT RESTRAINT

- A. Furnish and install where required in accordance with the drawings. Couplings shall be:
 - 1. EBAA Iron 1500TD
 - 2. Romac Series 611
 - 3. or approved equal.
- B. Fittings shall be NSF 61 certified.
- C. Material:
 - 1. Restraint devices shall conform to AWWA C150 and C151
 - 2. Constructed of ASTM A536 Ductile Iron
 - 3. Bolts and Nuts – Low alloy, corrosion resistant high strength, stainless steel alloys in the 300 series.
 - 4. Finish of coupling – Fusion epoxy coating per AWWA C213.

2.08 INSULATING COUPLING

- A. Furnish and install where shown on drawings flexible coupling on pipes. Couplings shall be:
 - 1. Smith-Blair, Inc. Model 413
 - 2. Dresser Style 39
 - 3. or approved equal.
- B. Fitting shall be NSF 61 certified.
- C. Couplings shall include anchor studs for thrust restraint per manufacturer recommendations.
- D. Materials:
 - 1. Cast Followers – Ductile Iron 65-45-12 per ASTM A536
 - 2. Sleeve – ASTM A238 Grade C or Carbon Steel with minimum yield of 30,000 PSI.
 - 3. Wedges – Single tooth, Ductile Iron, heat treated for DIP application.
 - 4. Bolts and Nuts – Low alloy, corrosion resistant high strength, stainless steel alloys in the 300 series.
 - 5. Finish of coupling – Fusion epoxy coating per AWWA C213.
 - 6. Gaskets – Synthetic rubber (SBR) PER ANSI/AWWA C111/A21.11.

2.09 REDUCING COUPLING

- A. Furnish and install where shown on drawings flexible coupling on pipes. Couplings shall be:
 - 1. Smith-Blair, Inc. Model 415
 - 2. Dresser Style 62
 - 3. Krausz – Hymax Reducer
 - 4. or approved equal.
- B. Fitting shall be NSF 61 certified.

C. Couplings shall include anchor studs for thrust restraint per manufacturer recommendations.

D. Material:

1. Cast Followers – Ductile Iron 65-45-12 per ASTM A536
2. Sleeve – ASTM A238 Grade C or Carbon Steel with minimum yield of 30,000 PSI.
3. Bolts and Nuts – Low alloy, corrosion resistant high strength, stainless steel alloys in the 300 series.
4. Finish of coupling – Fusion epoxy coating per AWWA C213.
5. Gaskets – Synthetic rubber (SBR) PER ANSI/AWWA C111/A21.11. Gaskets shall comply with the cathodic protection requirements per Section 13111 and as shown in the plans.
6. Anchor loop – Carbon steel per ASTM A36 welded to each sleeve to secure each follower end.
7. Washers – Carbon steel per ASTM F844, 5/8" Type A Plain.

2.10 TRANSITION COUPLING

A. Furnish and install where shown on drawings flexible coupling on pipes. Couplings shall be:

1. Smith-Blair, Inc. Model 441 or 442
2. Dresser Style 62
3. Krausz – Hymax Reducer
4. or approved equal.

B. Fitting shall be NSF 61 certified.

C. Couplings shall include anchor studs for thrust restraint per manufacturer recommendations.

D. Material:

1. Cast Followers – Ductile Iron 65-45-12 per ASTM A536
2. Sleeve – ASTM A238 Grade C or Carbon Steel with minimum yield of 30,000 PSI.
3. Bolts and Nuts – Low alloy, corrosion resistant high strength, stainless steel alloys in the 300 series.
4. Finish of coupling – Fusion epoxy coating per AWWA C213.
5. Gaskets – Synthetic rubber (SBR) PER ANSI/AWWA C111/A21.11. Gaskets shall comply with the cathodic protection requirements per Section 13111 and as shown in the plans.

2.11 FITTINGS

A. Ductile Iron Fittings – All fittings in compliance with AWWA C110 and C153. All fittings shall be ductile iron per this specification unless otherwise noted on the contract plans.

B. All fittings shall be rated equally to the class of pipe they are connecting, and all fittings shall be NSF 61 approved.

C. Subject to compliance with the Contract Documents the following manufacturers are acceptable for fittings:

1. US Pipe

2. American Pipe
 3. Star
 4. Sigma
 5. Or Approved Equal
- D. All fittings shall be mechanically restrained. The pipe shall be mechanically restrained to the length specified on the plans; if the length does not fall on a joint the next joint shall be restrained. Where the pipe is not fully restrained, thrust blocks shall be required per Owners Standards. End connections restraints shall be either mechanical joints or flanged joints.
- E. All fittings shall be coated and lined in accordance with AWWA C153. All metallic fittings shall be wrapped and sealed in 10Mil polyethylene wrap.
- F. Threaded holes and mating surfaces shall not be coated. Flange faces shall be coated with asphaltic varnish only. There shall be no coating materials or mortar in gasket grooves.

2.12 HIGH DEFLECTION COUPLINGS, RESTRAINED

- A. Furnish and install where shown on drawings. Couplings shall be:
1. EBAA Series 3800 Mega Coupling
 2. Smith-Blair 472 Pipe-lock
 3. Hymax Grip
 4. Or approved equal.
- B. All fittings shall be rated equally to the class of pipe they are connecting, and all fittings shall be NSF 61 approved.
- C. Material:
1. Cast Followers – Ductile Iron 65-45-12 per ASTM A536
 2. Sleeve – ASTM A238 Grade C or Carbon Steel with minimum yield of 30,000 PSI.
 3. Bolts and Nuts – Low alloy, corrosion resistant high strength, stainless steel alloys in the 300 series.
 4. Finish of coupling – Fusion epoxy coating per AWWA C213.
 5. Gaskets – Synthetic rubber (SBR) PER ANSI/AWWA C111/A21.11.

2.13 FLANGES, BOLTS, AND GASKETS -

- A. Flanges shall be flat-faced and meet either the requirements of AWWA C207 for steel hub type flange fittings, or AWWA C110 Section 10-18 for ductile iron fittings. The flanges shall be marked with the size, name or trademark of the manufacturer and with the AWWA Class; i.e., "D", or pressure rating.
- B. Bolts, nuts, and washers shall be cadmium-plated or zinc-coated steel per ASTM A307 Grade A, hex or T-head, unless otherwise noted. Threads shall be coated with anti-seize lubricant. The bolt shall extend at least 3 threads through the nut when tightened to proper torque.
- C. Gaskets shall be suitable with the pipe being joined, follow the manufactures recommendation, and be in compliance with AWWA C110. Gaskets shall be 1/8-inch

thick, SBR, U.S. Pipe Ring Flange-Tyte or approved equal in compliance with AWWA C115/A21.53.

- D. The following table shows the bolt pattern for ASME/ANSI 16.1 Class 125 cast iron flange.

Bolt Hole			
Pipe Size	Diameter (Inches)	Bolt Diameter & Length (Inches)	Number of Bolts
6"	$\frac{7}{8}$	$\frac{3}{4} \times 3\frac{1}{2}$	8
8"	$\frac{7}{8}$	$\frac{3}{4} \times 3\frac{1}{2}$	8
10"	1	$\frac{7}{8} \times 4$	12
12"	1	$\frac{7}{8} \times 4$	12
14"	$1\frac{1}{8}$	$1 \times 4\frac{1}{2}$	12
16"	$1\frac{1}{8}$	$1 \times 4\frac{1}{2}$	16

- E. The contractor shall uniformly tighten the bolts and prevent bending or torsional strains. Proper anchorage shall be provided.

2.14 MISCELLANEOUS

A. Locating Wire

1. Locating wire shall be single strand, 10-gauge copper wire, with solid thermoplastic insulation.

B. Warning Tape

1. Warning tape shall be 12-inch-wide blue non-metallic tape marked "Water Main Buried Below".

C. Polyethylene encasement

1. All ductile iron and metallic fitting shall be polyethylene encased. Polyethylene encasement shall be in accordance with AWWA C105.
2. 10 Mil Christy Wrap or approved equal.

D. Thrust Blocking

1. Thrust blocking is required at all fittings 11-1/4 degrees or larger in the pipe per the District standards. Install thrust blocking in accordance with the detail(s) shown on the plans.

2.15 GATE VALVES (2-INCHES TO 8-INCHES)

- A. Furnish and install gate valves of the type and size shown on the drawings and as specified herein.

B. Material:

1. Refer to the Owners pre-approved material listing or approved equal. Gate valves shall be resilient seated and shall conform to AWWA C509.
2. Valves shall be equipped with flanged ends in conformance with ANSI B16.1, Class 125, with the bolt pattern straddling the centerline.
3. Valves shall be installed per manufacturer recommendations.

4. Gate valve shall include an operating hub, extended non-rising stem, and operating wrench as shown on the drawings.
5. All interior ferrous surfaces shall be coated in accordance with AWWA C550 and external surfaces shall be coated with the manufacturer's standard high solids epoxy no less than 10 MILS DFT.
6. Valves shall be comprised of the following materials:

Item	Material Specifications
Body, Bonnet, and Gate	ASTM A536 Ductile Iron
Stem and Stem Nut	Bronze
Seat	Buna-N
Hardware	A276 Stainless Steel (304)

7. Provide manufacturer's data sheets for epoxy coating and a certificate of compliance with AWWA C509.

C. 1 ½-inch and smaller Gate Valves

1. The gate valve shall be constructed of bronze, full ported with NTP threaded end connections conforming to ANSI Standards B2.1.
2. The bonnet shall be a non-rising stem with hand wheel operator.
3. Valve material shall be NSF-61 approved.
4. Rated to 200 psi.

2.16 BUTTERFLY VALVES (10-INCHES AND GREATER)

- A. Furnish and install butterfly valves and operators of the type and size shown on the drawings and as specified herein.

B. Material

1. Refer to the Owners pre-approved material listing or approved equal.
2. Butterfly valves shall be resilient seated with seat in body and shall conform to AWWA C504, Class 150B.
3. Valves shall be equipped with flanged ends in conformance with ANSI B16.1, Class 125, with the bolt pattern straddling the centerline.
4. Valve operator shall be Model MDT operators or approved equal.
5. Valves shall be installed per manufacturer recommendations.
6. The valve disc shall not interfere with the internal diameter of the mating pipe in the fully open position.
7. Shaft seals shall be leak-proof and maintenance free.
8. All interior ferrous surfaces shall be coated in accordance with AWWA C504 and external surfaces shall be coated with the manufacturer's standard high solids epoxy no less than 10 MILS DFT.
9. Valves shall be comprised of the following materials:

Item	Material Specifications
Body, Bonnet, and Gate	ASTM A126 Grade B Cast Iron/ASTM A536 Ductile Iron
Disc	ASTM A126 Grade B Cast Iron/ASTM A536 Ductile Iron w/ ASTM A276 Type 316 Stainless Steel Edge

Shaft	ASTM A276 Type 304 Stainless Steel
Seat	Buna-N, with seat in body
Bearings/Seals	PTFE/Teflon/Stainless Steel
Hardware	A276 Stainless Steel (304)

- C. Provide manufacturer's data sheets for epoxy coating and a certificate of compliance with AWWA C504.
- D. Each valve shall be hydrostatically tested and seat tested in conformance with AWWA C504. Test reports shall be submitted prior to shipping to the jobsite.

2.17 INSULATED CORPORATION STOP

- A. Mueller 300 Insulated Corporation Ball Valve with MIP x FIP connection, nylon insulator, and ¼-turn valve or approved equal.

2.18 AIR AND VACUUM RELEASE VALVES

- A. Air and Vacuum Release Valve (AVRV)
 - 1. Assembly shall comply with and be installed in accordance with Owners Standard drawings and shall include ARV line materials and fittings include pipe, service saddles, fittings, enclosure, and corporation stops.
- B. Combination Air and Vacuum Release Valve (CARV)
 - 1. Assembly shall comply with and be installed in accordance with Owners Standard drawings and shall include ARV line materials and fittings include pipe, service saddles, fittings, enclosure, and corporation stops.
- C. Material
 - 1. All materials shall be NSF-61 approved.
 - 2. Combination AVR V
 - a. Body shall be of high strength cast iron.
 - b. The float, seal, and all moving parts shall be of Type 316 stainless steel.
 - c. Seat washers and gaskets shall be of Buna-N, Nitrile Rubber.
 - d. Valves shall be designed for a minimum pressure of 150 psi unless otherwise shown.
 - 3. Pipe material between the mainline and the AVR V shall be brass or bronze.
 - 4. Pipe material from the AVR V into the enclosure shall be brass or bronze.
 - 5. Connections between pipe and fitting shall be threaded connections unless otherwise approved. Teflon tape shall be used at all threaded connections.
 - 6. Service saddle
 - a. Shall comply with the Owners list of approved products.
 - b. It shall comply with AWWA C-800 "Threads for Underground Service Line Fittings" and have suitable means for attachment and sealing to a water main and be designed to provide a drip-tight connection when used as a service connection to the main.
 - c. Gasket shall be Nitrite (Buna N) NSF-61 approved.
 - d. Saddles for ductile iron pipe shall be double strap.
 - 7. Corporation stops, unions, vault, fittings, etc. shall be in accordance with the Owners Standards or as shown in the plans.

2.19 BLOW OFF VALVE

- A. Blowoff Appurtenance – Blowoff to be installed per detail 4/D2 of the plans.
 - 1. Box: Jensen, Christy, or approved equal. H20 Rated 42-Inch x 20-Inch utility box with open bottom and compatible with the lid. Contractor shall field determine the box height based on field conditions and in accordance with PCWA Standard Detail S506.
 - 2. Lid: Lid shall have:
 - a. TraxPlate™ slip-resistant surface or approved equal.
 - b. Torsion adjustable spring-assist mechanism.
 - c. Locking mechanism with Penta head bolt downs.
 - d. Drain assembly.
 - e. Factory applied galvanized coating.

2.20 FIRE HYDRANTS

- A. Fire hydrants shall comply with and be installed in accordance with Owners Standard Drawings.
- B. Material
 - 1. Hydrant shall be wet barrel per AWWA C503-14 and in accordance with Owners Standards.
 - 2. They shall have one 4-1/2-inch outlet facing the street and two 2-1/2 inch outlets with Threads on the pumper and hose connections conforming to the requirements of the fire department equipment of the area which they are to serve, or if no standards exist they shall conform to the "National Standard Screw Threads for Fire Hose Couplings and Fittings" published by the National Board of Fire Underwriters.
 - 3. Fire hydrants shall open to the left (counterclockwise). The hydrant shall be cast iron and bronze mounted. Hydrants shall have a main valve opening size of four and one-half inches. The outlets shall be protected with caps attached to the hydrant head with a chain.
 - 4. Other specific requirements are:
 - a. Hydrant laterals shall be ductile iron (DI) pipe and shall be six (6) inches unless otherwise shown on the plans and be pressure rated appropriately. Thrust block sizes shall be as shown in the Plans
 - b. The lateral valve shall be a 6-inch gate valve. A valve extension shall be provided and installed if valve operating nut is 36-inch or more below the final surface.
 - c. Hydrant shoe and buries shall be 6-inches inside diameters and made of cast iron conforming to ASTM A-126. The shoes shall be one piece have a 90-degree bend with the top having a flange drilled with six holes to receive the extension bury or hydrant. The bottom shall have a 90-degree bend. The bury end shall be a mechanical joint.
 - d. Bolts shall be alloy steel break-off bolts shall be used to attach the fire hydrant to the extension spool. 3 of the 6 nuts shall be tack welded to secure the hydrant to the extension spool.
 - e. All hydrants shall be delivered to the site with a factory applied primer and epoxy coated per AWWA C550 and be NSF61 certified. Finished coat shall be

minimum dry film thickness of 12mils. Color per local fire department standards.

PART 3 - EXECUTION

3.01 PIPE AND FITTINGS

- A. All pipe and fitting sizes as indicated on the drawings shall be installed in accordance with manufacturer's specifications and as specified.
- B. All metallic fittings and any metallic pipe shall be polyethylene wrapped in accordance with AWWA C105.
 - 1. When it is not practical to wrap tees, crosses, and other odd-shaped pieces:
 - a. The item shall be wrapped with a flat sheet or split length of polyethylene tube by passing the sheet under the appurtenance and bringing it up around the body.
 - b. Seams shall be made by bringing the edges together, folding over twice, and taping down.
 - 2. All opening, cuts, slits, punctures, etc. shall be secured or repaired with adhesive tape compatible with the polyethylene chosen and suitable for direct bury.
- C. Thrust Blocks - All fittings, unless otherwise specified or shown on the plans, shall be provided with a thrust block constructed against undisturbed soil and at least to the minimum dimensions as shown on the Standard Drawings.
 - 1. Thrust blocks shall be of Class C Concrete per Section 03301. Care shall be taken not to obstruct the outlets of tees or crosses which are intended for future connections.
 - 2. A waterproof paper or plastic bond-breaker shall be placed between fittings, plugs and caps, and the concrete thrust block to facilitate their removal of the concrete in the future.
- D. Mechanical Couplings - Oil, scale, rust, and dirt shall be cleaned from pipe ends. The Contractor shall clean gaskets in couplings prior to installing the coupling in accordance with the manufacturer's recommendations:
 - 1. Bolt threads shall be lubricated per manufacturers recommendation prior to installation.
 - 2. Bolts shall be tightened in accordance with the manufacture's recommended procedure.

3.02 TRENCHING

- A. Excavation and backfill shall comply with compaction and testing requirements of Section 02221.
- B. Where centerline or invert elevations are not shown, provide minimum 30-inches of cover above top of pipe or conduit from adjoining finished grade.
- C. Excavate trench minimum six inches (6") below required pipe grade for a minimum of six inches (6") bed of sand, fine earth, or other approved suitable material to provide a uniform grade and bearing throughout the length of pipe.

- D. Trenching, excavation, and backfill shall be in accordance with Section 02221.
- E. Backfill shall not be conducted until the work has been inspected and approved.

3.03 SLEEVES AND SUPPORTS

A. Supports

1. The Contractor shall submit shop drawings for approval of the complete pipe support system layout showing proposed pipe support locations, type of sleeving, couplings, and valves.
2. Certain parts of the pipe supports have been detailed on the drawings; however, the Contractor is responsible for furnishing a complete support system, including any pipe supports required by the nature of the installation but not shown on the drawings.
3. Burning or welding of any structural member under load shall not be permitted. Field welding not called for on the drawings or approved shop drawings may only be done upon approval by the Engineer.

B. Sleeves

1. Install sleeves of sufficient size to allow for free motion of pipe.
2. Whenever a pipe of any material terminates at or extends through a structural wall or sump, the Contractor shall install in advance of pouring of concrete, the fittings or special casting required for the particular installation.
3. Sleeves shall be cut from standard weight steel pipe, sized to proper lengths. Galvanize after sizing.
4. Sleeve shall have a full annular 2" x ¼" steel welded on weep ring

3.04 COMBINATION AIR AND VACUUM RELEASE VALVES AND AIR AND VACUUM RELEASE VALVES

- A. The tap for the AVRV shall be made in a level section of pipe no closer than 18-inches to a bell, coupling, joint, or fitting.
 1. The surface of the pipe shall be free of all loose material and have a hard, clean surface before placing the service saddle.
 2. The service saddle shall be tightened firmly to ensure a tight seal; however, care shall be used to prevent damage or distortion of either the pipe, corporation stop or service saddle by overtightening.
 3. The drilling/coring of the pipe shall be performed in accordance with the pipe manufacture's recommendation.
- B. Threaded joints shall be cleaned by wire brushing and swabbing. Teflon joint compound or Teflon tape shall be applied to pipe threads before installing threaded valves or fittings. Joints shall be watertight.
- C. Corporation stop at the saddle shall be insulated Mueller 300, MIP x FIP fittings or approved equal.
- D. The AVRV shall be installed in compliance with the plans and specifications and the cathodic protection requirements found in the Contract Documents.

- E. Each AVR V shall be hydrostatically tested with the mainline pressure test. Contractor shall repair and/or replace any defective material or workmanship discovered.

3.05 FIRE HYDRANT

A. Execution

1. The shoe of the fire hydrant bury must be anchored on a concrete thrust block.
2. The fire hydrant shall be positioned so that the bolts between the extension piece and the hydrant are accessible, both top and bottom, within the limits shown on the Standard Drawing. If the hydrant is either too low or too high, it shall be corrected.
3. All metal surfaces above ground, including any extensions, shall be painted before installation.
4. All underground iron fittings shall be wrapped with polyethylene.

B. Testing

1. Hydrants are to be tested at same time as the main. Contractor shall repair and/or replace any defective material or workmanship discovered.

3.06 THREADING

- A. Accurately cut with sharp dies to conform to the American Standard taper pipe threads standards. Assemble threaded joints by applying Teflon sealing paste or Teflon tape to the male threads only. Once the joint has been tightened, backing off will not be permitted unless the threads are recleaned and new compound applied. Make compound applications neatly. Wipe off excess compound inside of each joint.

3.07 MISCELLANEOUS

- A. Cap or plug ends of pipe immediately after installation to prevent entrance of foreign matter and leave in place until removal is necessary for completion of installation.
- B. Thoroughly flush and prove clean each piping system before connecting. Welded steel pipe shall be tested.
- C. All gaskets shall be full width of flanges to which applied. Bolts shall protrude through nuts two (2) threads minimum to one-half (1/2) inch maximum.

3.08 DISINFECTION OF WATER SYSTEM

- A. Clean and disinfect water lines connected to domestic water systems, prior to final inspection, per AWWA Standard Procedures for Disinfecting Water Mains.
- B. Clean interior of pipe and fittings.
- C. When pipe contains dirt that cannot be removed by flushing, swab pipe interiors with solution containing not less than 500 parts per million of chlorine until clean.
- D. Flush and disinfect the main line in accordance with AWWA C651.

- E. Disinfection of the water main will only be accepted once the two (2) sets of Bacteriological Tests performed by the District have been accepted. Minimum chlorine residual of 10mg/l after 24 hours. Contractor shall repeat flushing and disinfection procedures, at their own expense, until accepted by the District.

3.09 PAINTING

- A. All supports and clamps shall be galvanized after fabrication and secured with galvanized steel bolts, nuts, and washers, or as otherwise noted.
- B. Flexible couplings shall not be painted.

3.10 TESTING OF PIPING

- A. Piping shall be tested at completion of roughing-in, in accordance with the following schedule and show no loss in pressure or visible leaks after a minimum duration of two (2) hours at the test pressures indicated.

TEST SCHEDULE

<u>System Tested</u>	<u>Test Pressure</u>	<u>Test With</u>
Mains/Services/Appurtenances	150 PSI	Water

- B. Where tests show materials or workmanship to be deficient, replace or repair as necessary, and repeat the test until the specified standards are achieved.

** END OF SECTION **

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SECTION 15401
C900 POLYVINYL CHLORIDE PIPE AND FITTINGS
(PVC) (PRESSURE FLOW)

PART 1 - GENERAL

1.01 SCOPE

- A. This specification governs the furnishing and installation of PVC pipe material including laying, jointing, bedding, and approvals. All incidentals and appurtenant operations necessary for the construction of the water main shall be done in strict accordance with the drawings and other terms and conditions of the contract.
- B. See Section 15080 for fittings and connections.
- C. The Contractor shall also furnish all equipment, tools, labor and materials required to relocate water lines, sewers, storm drain conduits, ducts, pipes, or other structures as may be necessary to complete the installation as shown and specified.
- D. All standard specifications (i.e., AWWA, ASTM, etc.) made a portion of these specifications by reference shall be the latest edition and revision thereof.
- E. The Contractor shall be responsible for all material furnished by the Contractor and shall replace at Contractor's own expense, all material found defective in manufacture or damaged in handling after delivery by the manufacturer. This shall include the furnishing of all material and labor required to replace defective material discovered prior to final acceptance of the work.
- F. Pipe surfaces shall be free from nicks, scratches, and other blemishes. The joining surfaces of pipe spigots and of integral bell and sleeve reinforced bell sockets shall be free from gouges or other imperfections that might cause leakage.

1.02 STORAGE AND CARE

- A. The Contractor shall be responsible for the safe storage of material until it has been incorporated into the completed project. The interior of all pipes and fittings shall be kept free from dirt and foreign matter at all times.
- B. Pipe shall be stored at the job site in unit packages provided by the manufacturer. Caution shall be exercised to avoid compression, damage or deformation to bell ends of the pipe.
- C. 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. 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 from excessive heat.

1.03 SUBMITTALS

- A. Submittals shall be provided for the following items plus all additional items required in the specifications for the particular type of pipe:
 - 1. Pipe and jointing material
 - 2. Specialties

PART 2 - MATERIALS

2.01 ACCEPTABLE MANUFACTURES

- A. Subject to compliance with the Contract Documents, the following manufactures are acceptable:
 - 1. JM Eagle
 - 2. Northern Pipe
 - 3. VinylTech
 - 4. Napco
 - 5. Or approved equal

2.02 MATERIALS

- A. Per AWWA C900 and NSF 61 approved
- B. PVC pipe shall conform to AWWA C900, Class 305 (DR14) and Class 235 (DR18) and shall have the same outside diameter (O.D.) as that of cast iron pipe (C.I.P.O.D.) in the sizes furnished.
 - 1. Markings - Each standard or random length of pipe shall be clearly marked with the following:
 - a. Nominal size and O.D. base; (i.e., 12-inch cast iron pipe size)
 - b. Material code "PVC"
 - c. AWWA pressure class; i.e., PC 235
 - d. AWWA designation "AWWA C-900"
 - e. Manufacturer's trade name and production record code
 - f. Seal (mark) of testing District
 - 2. Pressure Class - Where the class is not indicated on the plans, the pipe shall be Class 235.
 - 3. Laying Length - The standard laying length shall be 20 feet (plus or minus 1 inch) in all classes. A maximum of 15 percent may be furnished in random lengths of not less than 10 feet each.
 - 4. Joint Type
 - a. Pipe joints shall be made using either an integral bell with an elastomeric gasket push-on type joint or using mechanical joint couplings of a sleeve type with rubber ring gaskets.
 - b. And mechanical restraint to form a restrained push-on type joint.
 - c. Gaskets with integral restraints are not acceptable.
 - 5. Solvent cement joints are strictly prohibited.
 - 6. One bell, complete with one gasket each, shall be factory assembled to each length of standard-length pipe furnished. The manufacturer shall furnish gasket lubricant for each quantity of pipe furnished.
 - 7. Physical Test Requirements
 - a. Hydrostatic burst and sustained pressure and crushing tests shall be conducted at the factory in accordance with AWWA C-900. All testing shall be subject to inspection by the District.
 - b. If requested by the Owner, the manufacturer shall supply a letter of certification attesting to their pipe meeting these specifications.

PART 3 - EXECUTION

3.01 HANDLING AND TRANSPORTATION

- A. Handling and transportation of pipe shall be in accordance with the pipe manufacturer's published instructions.
- B. Heavy canvas, or nylon slings of suitable strength shall be used for lifting and supporting materials. Chains or cables shall not be used.
- C. Pipe and fittings shall not be stored on rocks or gravel, or other hard material which might damage the pipe.
- D. Rubber Gasket Storage
 - 1. All rubber gaskets shall be stored in a cool, well-ventilated place and should not be exposed to the direct rays of the sun.
 - 2. Gaskets shall not be allowed in contact with oils, fuels, petroleum, or solvents.

3.02 PIPE LAYING

- A. Pipe shall be laid in accordance with the pipe manufacturer's published instructions, as complimented and modified herein and in the plans.
- B. Cleanliness
 - 1. The interior of pipes shall be clean of foreign materials before sections of pipe are installed and shall be protected to prevent entry of foreign materials after installation.
 - 2. Open ends of installed pipe shall be sealed with watertight plugs or other approved means at times when pipe installation is not in progress.
 - 3. Ground water shall not be allowed to enter the pipe.
- C. Inspection Before Installation
 - 1. All pipe and fittings shall be carefully examined for cracks and other defects just prior to installation. Spigot ends shall be examined with particular care as this area is the most vulnerable to damage from handling. Defective pipe or fittings shall be laid aside for inspection by the District, who will prescribe corrective repairs or rejection.
- D. Lowering of Pipe Material into Trench
 - 1. Proper implements, tools, and equipment, satisfactory to the District, shall be provided and used by the Contractor, for the safe and convenient performance of the work. All pipe, fittings, and valves shall be carefully lowered into the trench piece by piece in such a manner as to prevent damage to any materials and protective coatings and linings. Under no circumstances shall any materials be dropped or dumped into the trench.
 - 2. If damage occurs to any pipe, fittings, or accessories in handling, the damage shall be immediately brought to the District's attention and replaced by the Contractor at no expense to the District.
- E. Laying of Pipe
 - 1. Pipe shall be laid in trenches to the line and grade indicated on the plans and as specified in accordance with the AWWA C605.
 - 2. Every precaution shall be taken to prevent foreign material from entering the pipe while it is being placed in the trench. If the pipe laying crew cannot install the pipe

into the trench without getting earth and other foreign objects into it, the District Inspector may require a heavy tightly-woven-canvas bag of suitable size, or plastic caps to be placed over each end of the pipe prior to installation and left there until the connection is made to the adjacent pipe. During laying operations, no debris, tools, clothing, or other material shall be placed in the pipe.

3. As each length of pipe is placed in the trench, the spigot end shall be centered in the bell or coupling, and the pipe forced home and brought to correct line and grade. The pipe shall be secured in place with approved backfill material tamped under it, except at the bells or couplings. Precautions shall be taken to prevent dirt from entering the joint space.
4. Joints shall be assembled in accordance with the manufacturer's instructions. Rubber rings and ring grooves shall not be lubricated. Each joint shall be checked with a feeler gauge to assure proper seating of the gasket.
5. All restrained pipe lengths shall be mechanically restrained per these specifications including section 15080 – Pipe Fittings and Accessories.

F. Fittings

1. All fittings shall be installed in accordance with AWWA C605. All below ground fittings shall be polyethylene wrapped per AWWA C105. All fittings shall also have an 8 mil bituminous coating.
2. All nuts and bolts shall be bituminous coated before being polyethylene wrapped before backfill and compaction.

G. Cutting of Pipe

1. Field cuts and connections shall be in accordance with the pipe manufacturer's published instructions.
2. The cutting of pipe for inserting valves, fittings, or closure pieces shall be done in a neat and workmanlike manner without damage to the pipe, so as to leave a smooth end at right angles to the axis of the pipe. The pipe shall be marked around its entire circumference prior to cutting to assure a square cut. A factory-finished beveled end shall be used as a guide for proper bevel angle (15deg) and depth of bevel plus the distance to the insertion reference mark. The end shall be beveled using a PVC pipe beveling tool. Round off any sharp edges on the leading edge of the bevel with a pocketknife or a file.
3. When installing mainline PVC pipe, mechanical joint or push-on type fittings designed for ductile iron pipe shall be used. When connecting PVC pipe into the bell end of cast iron pipe or into push-on type fittings, the end should be re-beveled, similar to the bevel on ductile iron pipe. When connecting to mechanical joint fittings, the end of the PVC pipe should not be beveled. All joints shall be mechanically restrained.

H. Allowable Deflection

1. Zero deflection at the joint is allowed. Pipe bending is allowed to no less than 300-foot radius. Fittings are required when the minimum radius cannot be met.
2. Restrained mechanical joint long sleeves may be used to achieve 3.2-degree maximum deflection at each end. The use of MJ long sleeves is not called out on the plans; additional fittings and MJ long sleeves may be used with approval of the District.

I. Locating Wire

1. Locating wire shall be installed with non-metallic pipe as indicated on the Plans and Standard Drawings.

J. Warning Tape

1. Warning tape shall be placed on top of pipe zone backfill centered over pipe as shown on the Plans and Standard Drawings.

3.03 TESTING

- A. Testing shall be performed on all pipelines in accordance with District Standards and AWWA 651.

B. Pipeline Hydrostatic Test:

1. General:

- a. Notify Engineer in writing 5 days in advance of testing. Perform testing in presence of Engineer.
- b. Test newly installed pipelines using water as test medium, pipes shall successfully pass a leakage test prior to acceptance.
- c. Furnish testing equipment and perform tests in manner satisfactory to Engineer. Testing equipment shall provide observable and accurate measurements of leakage under specified conditions.
- d. Isolate new pipelines that are connected to existing pipelines.
- e. Conduct tests on entire pipeline after trench has been backfilled. Testing may be done prior to placement of asphaltic concrete or roadway structural section.
- f. Contractor may, if field conditions permit and as determined by Engineer, partially backfill trench and leave joints open for inspection and conduct an initial service leak test. Hydrostatic test shall not, however, be conducted until backfilling has been completed.
- g. Supply of temporary water shall be approved by the District.
- h. Dispose of water used in testing.

2. Procedure:

- a. Maximum filling velocity shall not exceed 0.25 foot per second, calculated based on the full area of pipe.
- b. Expel air from pipe system during filling. Expel air through air release valve or through corporation stop installed at high points and other strategic points.
- c. Test pressure shall be 150 psi.
- d. Apply and maintain specified test pressure with hydraulic force pump. Valve off piping system when test pressure is reached.
- e. Maintain hydrostatic test pressure continuously for 4 hours minimum, adding additional make-up water only as necessary to restore test pressure.
- f. Determine actual leakage by measuring quantity of water necessary to maintain specified test pressure for duration of test.
- g. If measured leakage exceeds allowable leakage or if leaks are visible, repair defective pipe section and repeat hydrostatic test.

3. Allowable Leakage:

- a. Allowable leakage is determined by OPUD Standards section 8.6.5 – Pressure and Leakage Test (0.02 Gallons per inch diameter per 100 feet).

C. Pipeline Disinfection Test:

1. Bacterial testing shall be per District Standard 8.8 – Bacteriological Testing.

2. The Contractor shall perform a HPC test on the disinfected water main in accordance with AWWA Standard C651 - Disinfecting Water Mains (latest edition) following completion of the disinfection process.
 - a. The test shall be conducted by a certified laboratory approved by the Owner/Engineer.
 - b. The sampling locations and frequency shall be as per AWWA C651 or as directed by the Engineer.
 - c. The HPC results shall be less than 500 Colony Forming Units per Milliliter (CFU/mL).
 - d. If the HPC results exceed 500 CFU/mL, the Contractor shall perform additional flushing of the water main and repeat the HPC test until acceptable results are achieved.
 - e. The Contractor shall submit all HPC test results along with the disinfection completion report.

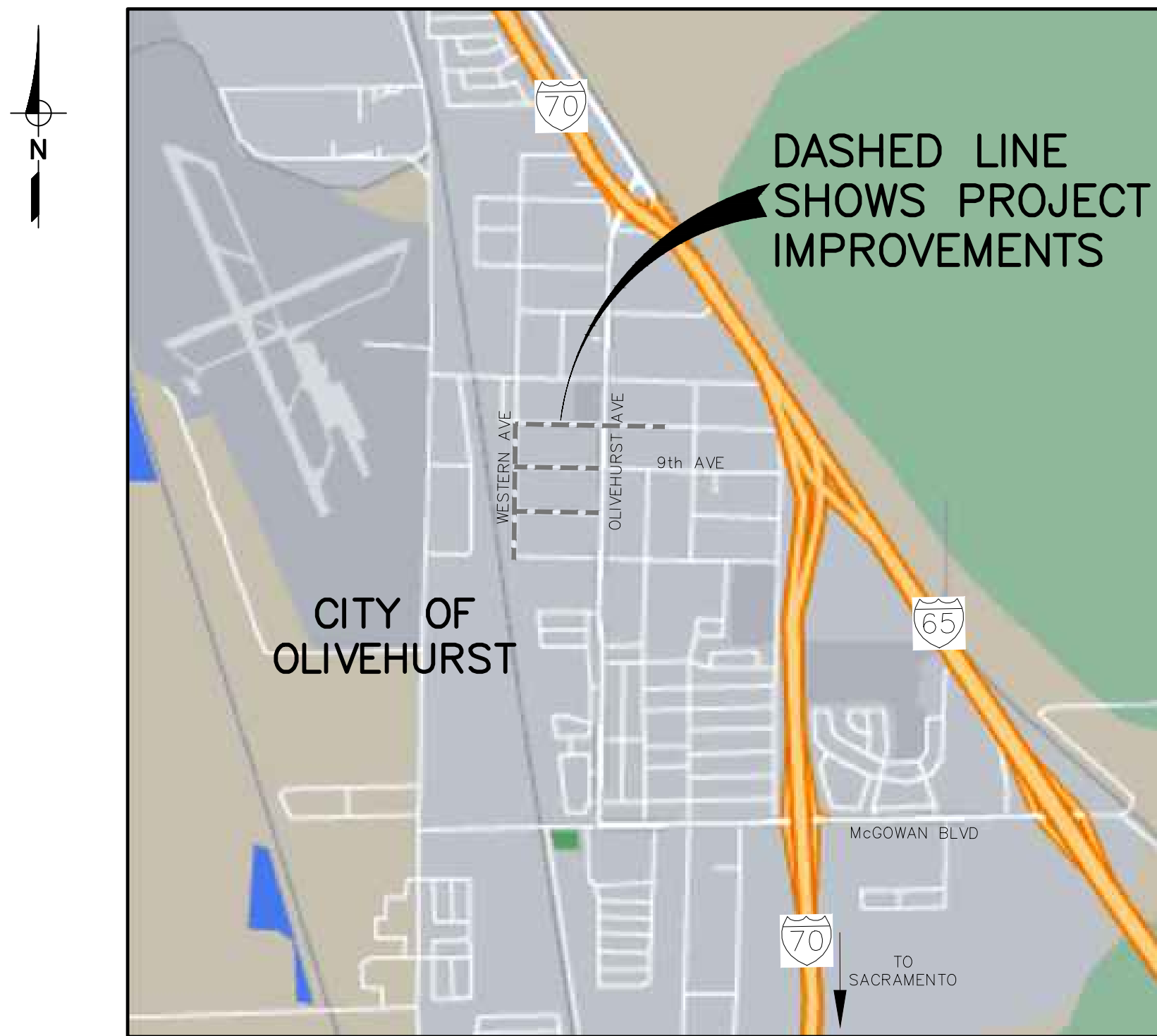
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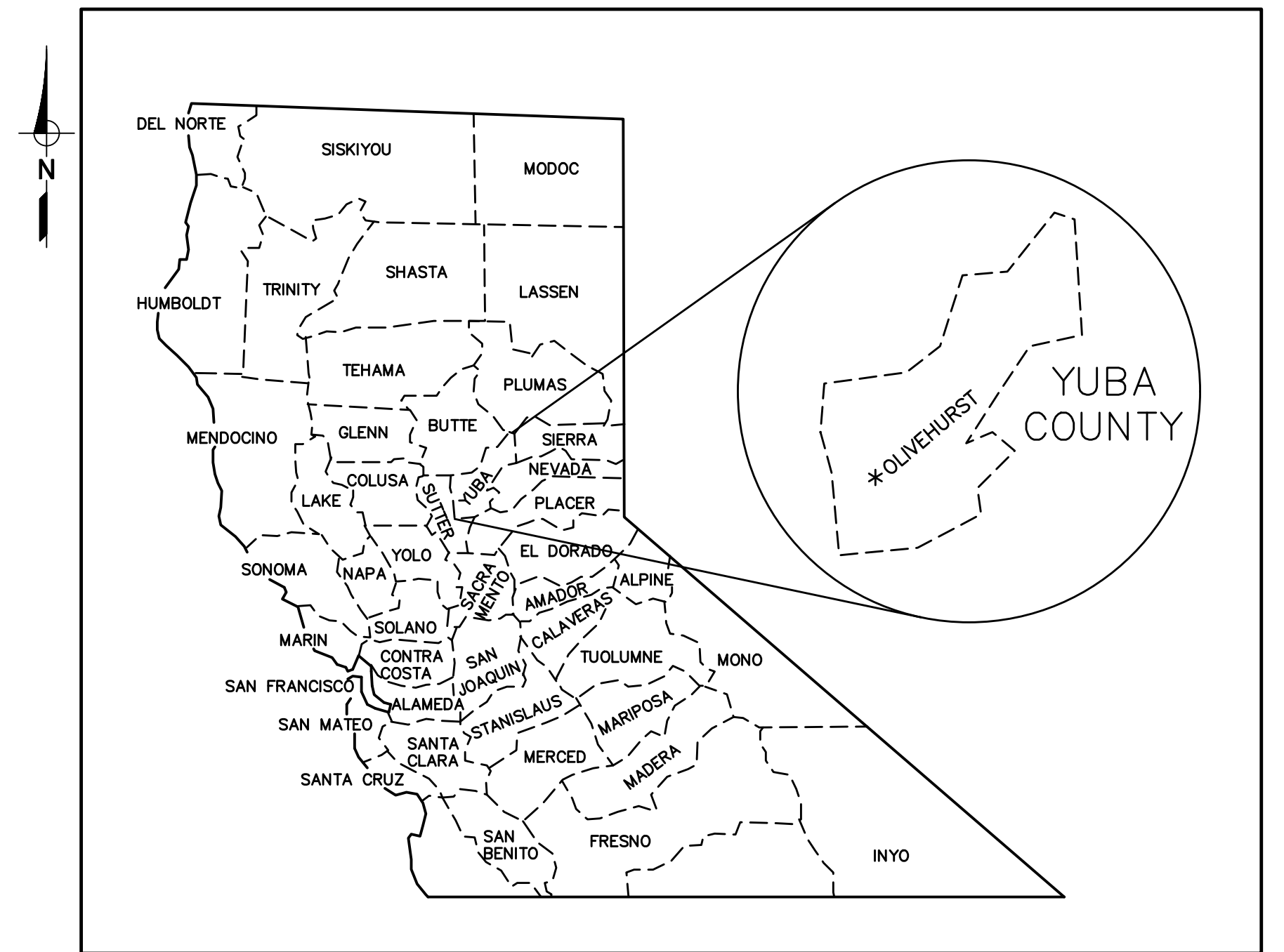
OLIVEHURST PUBLIC UTILITY DISTRICT

OLIVEHURST, YUBA COUNTY, CALIFORNIA HISTORIC OLIVEHURST PIPELINE REPLACEMENT PROJECT

PHASE 1 MAY, 2024



PROJECT LOCATION MAP
NO SCALE



VICINITY MAP
NO SCALE

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OLIVEHURST PUBLIC UTILITY DISTRICT FACILITIES

OLIVEHURST PUBLIC UTILITY DISTRICT FACILITIES SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE DISTRICT'S LATEST REVISED STANDARDS. THE CONTRACTOR SHALL PROVIDE TWO WORKING DAYS NOTICE TO THE OLIVEHURST PUBLIC UTILITY DISTRICT INSPECTOR (530-823-4885) PRIOR TO BEGINNING WORK ON WATER FACILITIES AND BY 7:30 A.M. EACH DAY WORK ON THE WATER FACILITIES OCCURS. THE DISTRICT'S APPROVAL OF THESE PLANS IS FOR WATER FACILITIES ONLY. UNDISCOVERED ERRORS AND OMISSIONS SHALL BE CORRECTED BY OTHERS. CONFLICTS WITH OTHER IMPROVEMENTS SHALL BE THE RESPONSIBILITY OF OTHERS.

OLIVEHURST PUBLIC UTILITY DISTRICT

AGENCY APPROVAL: _____

DATE: _____

CALL BEFORE YOU DIG

THE CONTRACTOR SHALL CALL "UNDERGROUND SERVICE ALERT" (USA) AT 800-227-2600 AT LEAST 2 WORKING DAYS PRIOR TO PERFORMING ANY EXCAVATION

UTILITY CONTACT INFORMATION

UTILITY	REPRESENTATIVE	PHONE
TELEPHONE	AT&T - ANNA SANTOS	(916)-484-2416
SEWER	OPUD - NICK POMEROY	(530)-743-4657
DRAINAGE	YUBA COUNTY PUBLIC WORKS - STEVAN M. CAMPPELL	(530)-749-5420
WATER	OPUD - VIRGIL WILLARD	(530)-743-4657
TELE/COMM	AT&T - ANNA SANTOS	(916)-484-2416
ELEC & GAS	PG&E -	(877)-743-7782
U.S.A.	CALL BEFORE YOU DIG	(800)-227-2600

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REV	DATE	BY	DESCRIPTION

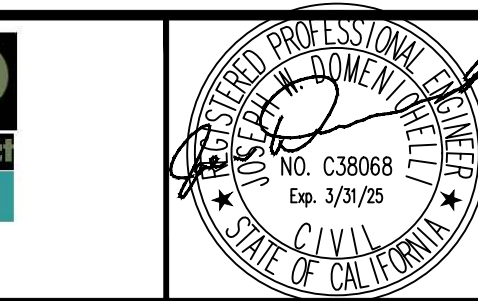
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WARNING
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IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE.

DESIGNED MATT DOMENICHELLI
DRAWN MATT DOMENICHELLI
CHECKED JOE DOMENICHELLI

DOMENICHELLI & ASSOCIATES
5180 Golden Foothill Pkwy, Suite 220
El Dorado Hills, CA 95762
Ph: (916) 933-1997
Fax: (916) 933-4778

OPUD
Olivehurst Public Utility District
1970 9th Avenue
Olivehurst, CA 95961
Ph: (530) 743-4657
Fax: (530) 743-3023



HISTORIC OLIVEHURST STEEL MAIN REPLACEMENT PROJECT

TITLE SHEET

DWG
G1
SHEET
1
OF 24

GENERAL NOTES

- GENERAL:
 - ALL WORK SHALL CONFORM TO THE APPLICABLE LOCAL, STATE AND FEDERAL CODES AND SPECIFICATIONS INCLUDING OSHA.
 - EXCAVATIONS SHALL BE CARRIED OUT IN THE DRY AND PROVISIONS SHALL BE MADE TO PREVENT THE BOTTOM OF EXCAVATION FROM FLOODING AT ALL TIMES.
 - IT IS THE CONTRACTOR'S RESPONSIBILITY TO ASSURE JOB SAFETY. LOCAL, STATE AND FEDERAL, INCLUDING OSHA LAWS AND RULES SHALL BE ENFORCED BY THE CONTRACTOR AT ALL TIMES.
 - THE CONTRACTOR SHALL NOTIFY UNDERGROUND SERVICE ALERT (USA), (800) 277-2600, 48 HOURS PRIOR TO ANY EXCAVATION. THE CONTRACTOR SHALL ALSO NOTIFY ALL OTHER UTILITIES, NOT IN USA, 48 HOURS PRIOR TO ANY EXCAVATION.
 - ALL STRUCTURES, FACILITIES, CONCRETE CURB, GUTTER, SIDEWALK AND PAVEMENT DAMAGED BY CONTRACTOR SHALL BE REPAIRED OR REPLACED AT CONTRACTOR'S EXPENSE.
- PUBLIC SAFETY AND TRAFFIC CONTROL PLAN SHALL BE PROVIDED IN ACCORDANCE WITH THE COUNTY ENCROACHMENT PERMIT AND SPECIFICATIONS. SAFE VEHICULAR AND OPERATION STAFF ACCESS SHALL BE PROVIDED AT ALL TIMES DURING CONSTRUCTION.
- EROSION CONTROL MEASURES SHALL BE IN ACCORDANCE WITH THE CONTRACTOR PREPARED WATER POLLUTION CONTROL PLAN.
- THE TYPES LOCATIONS, SIZES, AND/OR DEPTHS OF EXISTING UNDERGROUND UTILITIES AS SHOWN ON THESE PLANS WERE OBTAINED FROM SOURCES OF VARYING RELIABILITY. THE CONTRACTOR IS CAUTIONED THAT ONLY ACTUAL EXCAVATION WILL REVEAL THE TYPES, EXTENT, SIZES, LOCATIONS, AND DEPTHS OF SUCH UNDERGROUND UTILITIES. A REASONABLE EFFORT HAS BEEN MADE TO LOCATE AND DELINEATE ALL KNOWN UNDERGROUND UTILITIES. HOWEVER, THE ENGINEER AND THE DISTRICT CAN ASSUME NO RESPONSIBILITY FOR THE COMPLETENESS OR ACCURACY OF THE DELINEATION OF SUCH UNDERGROUND UTILITIES NOR FOR THE EXISTENCE OF OTHER BURIED OBJECTS OR UTILITIES WHICH MAY BE ENCOUNTERED, BUT WHICH ARE NOT SHOWN ON THESE DRAWINGS. THE CONTRACTOR IS HEREBY NOTIFIED THAT, PRIOR TO COMMENCING CONSTRUCTION, HE IS RESPONSIBLE FOR CONTACTING THE UTILITY COMPANIES INVOLVED AND REQUESTING A VISUAL VERIFICATION OF THE LOCATIONS OF THEIR UNDERGROUND FACILITIES SHOWN ON THESE PLANS A MINIMUM OF TWO WEEKS PRIOR TO WATER MAIN EXCAVATION. CONTRACTOR SHALL POTHOLE TO VERIFY ALL UTILITIES LOCATIONS FOR GAS, SEWER, WATER, STORM DRAIN, ELECTRICAL AND COMMUNICATIONS ALIGNMENTS INVOLVING SERVICES AND REPORT TO THE ENGINEER ANY POSSIBLE CONFLICTS AND SHALL PAINT IN WHITE THE LIMITS OF THE PIPELINE TRENCH. ALL POTHOLE DATA SHALL BE PROVIDED TO THE ENGINEER A MINIMUM OF TWO WEEKS PRIOR TO PIPELINE EXCAVATION OR SAWCUTTING.
- ALL CONSTRUCTION SHALL CONFORM TO THESE PLANS AND THE LATEST EDITION OF OLIVEHURST PUBLIC UTILITY DISTRICT (OPUD) STANDARD CONSTRUCTION SPECIFICATIONS. CONTRACTOR IS RESPONSIBLE FOR OBTAINING CORRECT PLANS AND SPECIFICATIONS.
- COMPLIANCE WITH THE COUNTY OF YUBA NOISE RESTRICTIONS IS REQUIRED. HOURS OF CONSTRUCTION OPERATION SHALL BE LIMITED FROM 7:30 A.M. TO 4:30 P.M. WEEKDAYS. NO WORK SHALL BE ALLOWED ON SATURDAY, SUNDAY OR DISTRICT HOLIDAYS UNLESS APPROVED BY OPUD. CONSTRUCTION EQUIPMENT SHALL BE MUFFLED AND SHROUDED TO MINIMIZE NOISE LEVELS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
- NO REFUELING, LUBRICATION, OR MAINTENANCE OF CONSTRUCTION VEHICLES SHALL BE DONE ANYWHERE ON THE SITE EXCEPT WITHIN APPROVED OR CONTRACTOR OBTAINED CONSTRUCTION STAGING AREAS.
- ALL EXCAVATION LOCATED BEHIND SIDEWALKS (PRIVATE PROPERTY) TO BE PERFORMED BY HAND DIGGING. HEAVY EQUIPMENT NOT ALLOWED ON PRIVATE PROPERTY, SIDEWALKS, OR DRIVEWAYS.
- FINAL ABANDONMENT SHALL BE AS SHOWN ON ABANDONMENT PLANS AND DETAILS.
- ALL BRASS FITTINGS SHALL MEET FEDERAL AND STATE REQUIREMENTS FOR NO LEAD.
- PROVIDE A MINIMUM HORIZONTAL SEPARATION OF 10 FEET BETWEEN WATER AND SEWER LINES PER STANDARD DETAIL 2/D1.
- PROVIDE A MINIMUM HORIZONTAL SEPARATION OF 4 FEET BETWEEN WATER AND STORM DRAIN LINES.
- PROVIDE A MINIMUM OF 12 INCHES CLEARANCE AT LATERAL CROSSINGS WITH WATER OVER ALL WET UTILITIES WHENEVER POSSIBLE.
- ALL WET UTILITIES CROSSING WATER FACILITIES MUST NOT CROSS AT AN ANGLE GREATER THAN 45 DEGREES FROM WHAT WOULD BE A PERPENDICULAR CROSSING AND MUST HAVE A FULL STICK OF PIPE CENTERED ON THE CROSSING.
- PIPE JOINTS SHALL BE MECHANICALLY RESTRAINED WHERE SHOWN ON PLANS.
- PIPE AND APPURTENANCES TO BE 54--INCHS MINIMUM BELOW FINAL GRADE WHEN LOCATED WITHIN COUNTY R.O.W.

OPUD WATER FACILITIES NOTES

- IMPROVEMENT STANDARDS AND STANDARD DETAILS FOR OLIVEHURST PUBLIC UTILITY DISTRICT (OPUD) DATED MAY 2021 ARE CONSIDERED A PART OF THESE PLANS.
- ALL UTILITIES CLEARANCES (HORIZONTAL AND VERTICAL) SHALL MEET OPUD STANDARDS
- COORDINATE WITH PG&E FOR LOCATIONS OF TRANSFORMER/S AND CONFIRM REQUIRED MINIMUM DISTANCES AWAY FROM WET UTILITIES PER PG&E GREENBOOK AND OPUD GUIDELINES. PLEASE NOTIFY ENGINEER & PG&E OF ANY DISCREPANCIES.
- A MINIMUM CLEARANCE OF 18" FOR UTILITY VS ROAD TILL SECTION. ANY DISCREPANCIES TO FACILITIES WITHIN SECTION, PLEASE NOTIFY OPUD AND COUNTY INSPECTORS.
- TO SCHEDULE A PUBLIC WORKS INSPECTION, CONTACT THE FOLLOWING TWO WORK DAY PRIOR TO INSPECTION, EXCLUDING WEEKENDS & HOLIDAYS.

OLIVEHURST PUBLIC UTILITY DISTRICT INSPECTOR PHONE:

SWARNJIT BOYAL – 530-682-0736
 JON PHILLIPS – 530-790-8064

COUNTY OF YUBA ENCROACHMENT PERMIT CONDITIONS:

PAVEMENT RESTORATION – YUBA COUNTY DEPARTMENT OF PUBLIC WORKS UTILITY TRENCH DETAIL 300 (1/D2).

- PAVEMENT RESTORATION SHALL INCLUDE KEY GRIND BEYOND SAW-CUT TO THE GREATER OF HALF THE DEPTH OF EXISTING HMA OR A MINIMUM OF 2" AND REPLACEMENT.
- PAVEMENT RESTORATION SHALL BE A TYPICAL T-TRENCH RESTORATION AS SHOWN ON DETAIL 300 (1/D2).

TRAFFIC CONTROL PLAN

- A TRAFFIC CONTROL PLAN SHALL BE PREPARED AND PROVIDED BY THE CONTRACTOR FOR APPROVAL PRIOR TO ANY WORK PER THE COUNTY OF YUBA ENCROACHMENT PERMIT GENERAL CONDITIONS

GENERAL CONDITIONS

- CONTRACTOR TO MAINTAIN ACCESS TO RESIDENTS WITH A MAXIMUM DELAY TIME OF 15 MINUTES.
- A MINIMUM OF 48 HOURS ADVANCED NOTICE SHALL BE GIVEN PRIOR TO THE BEGINNING OF ANY CONSTRUCTION AND DELAYS.
- SEE SPECIFICATIONS FOR FULL LIST OF YUBA COUNTY ENCROACHMENT PERMIT GENERAL CONDITIONS.
- REFER TO YUBA COUNTY DEPARTMENT OF PUBLIC WORKS STANDARD PLANS & SPECIFICATIONS FOR GENERAL REQUIREMENTS NOT COVERED IN THE CONTRACT DOCUMENTS.

PROJECT NOTES:

- INSTALL NEW SERVICE LINE AND RECONNECT TO EXISTING METER BOX PER OPUD STANDARD DETAILS. WHERE METER IS LOCATED WITHIN 18' OF THE R.O.W. CENTERLINE (NOT ROAD CENTERLINE) METER IS TO BE RELOCATED PER DETAIL SHEET D4. CONTRACTOR SHALL REUSE ALL EXISTING METER BOXES AND COMPONENTS UNLESS DETERMINED TO BE INSUFFICIENT FOR REUSE BY DISTRICT INSPECTOR. PROVIDE ALL NECESSARY PIPING, FITTINGS, AND APPURTENANCES PER OPUD STANDARD DETAIL. SEE MEASUREMENT AND PAYMENT FOR ESTIMATED QUANTITIES.
- NO NEW WATER PIPE LINES SHALL BE LOCATED CLOSER THAN 1 FOOT, HORIZONTALLY OR VERTICALLY FROM ANY EXISTING UTILITIES, UNLESS SHOWN OTHERWISE ON THE PLANS.
- A MINIMUM OF 2 TIE-INS TO THE EXISTING SYSTEM ARE REQUIRED FROM EXISTING MAIN TO NEW WATER MAIN PRIOR TO ANY SERVICE CROSS OVERS OR FIRE HYDRANT CROSS OVERS. EXISTING WATERMAIN TO REMAIN IN SERVICE UNTIL ALL SERVICE LINES ARE IN SERVICE FROM THE NEW WATERMAIN.
- DISTRIBUTION PIPE AND CONNECTING MAINS SHALL BE PVC C900 DR-18 PIPE IN ACCORDANCE WITH OPUD IMPROVEMENT STANDARDS, TECHNICAL PROVISIONS, AND THE DRAWINGS. ALL MECHANICAL JOINTS SHALL BE OF THE RESTRAINED TYPE USING EBAA IRON, OR STAR, OR EQUAL. TEST PRESSURE SHALL BE 150 PSI MINIMUM.
- RADIUSING OF PIPE ALIGNMENT SHALL BE ACCOMPLISHED BY BENDING, DEFLECTION AT BELL AND SPIGOT JOINTS IS NOT ALLOWED. MINIMUM BEND RADIUS SHALL BE NO LESS THAN 300' FOR 8" DIAMETER PIPE. DEFLECTION AT MECHANICAL JOINTS SHALL BE ALLOWED PER OPUD IMPROVEMENT STANDARDS. DIP MJ LONG SLEEVES WITH APPROVED RESTRAINTS MAY BE USED TO ACHIEVE GREATER DEFLECTIONS.
- ALL VALVES, PIPE FITTINGS, RESTRAINTS, AND APPURTENANCES SHALL BE MINIMUM PRESSURE CLASS 235 RATING.
- ABANDON EXISTING PIPELINE BY CUTTING AND CAPPING ENDS AS SHOWN ON PLANS PER OPUD STANDARDS. VALVES SHALL BE ABANDONED BY REMOVING OPERATING NUT, VALVE BOX, AND RISER TO BE CUT AT LEAST 24" BELOW GRADE AND BACKFILLED PER OPUD STANDARDS WITH SAND COMPACTED TO 90% IN PAVED AND HARDSCAPE AREAS TO SUBGRADE, OR FILLED WITH NATIVE AND TOPSOIL IN UNPAVED OR NON HARDSCAPED AREAS TO FINISHED GRADE.
- PROJECT DISTURBANCE HAS BEEN CALCULATED TO BE LESS THAN 1 ACRE AND THEREFORE DOES NOT REQUIRE COVERAGE UNDER THE GENERAL PERMIT FOR DISCHARGES OF STORMWATER ASSOCIATED WITH CONSTRUCTION ACTIVITY (CONSTRUCTION GENERAL PERMIT 2009-009-DWQ). IN THE EVENT A STAGING/STOCKPILE AREA EXCEEDS THIS REQUIREMENT THE CONTRACTOR IS RESPONSIBLE FOR COMPLYING WITH THE CONSTRUCTION GENERAL PERMIT INCLUDING SWPPP PREPARATION, COMPLIANCE REPORTING AND ALL ASSOCIATED PERMITTING FEES INCLUDING ALL OPUD STAFF TIME REQUIRED. CONTRACTOR SHALL PROVIDE OPUD WITH A DETAILED CALCULATION SHOWING COMPLIANCE WITH THE 1 ACRE PRIOR TO FINAL STAGING AREA SELECTION.
- CONTRACTOR SHALL POTHOLE UTILITY LINES TO VERIFY LOCATION AND DEPTH. NEW WATER MAIN SHALL BE INSTALLED OVER THE TOP OF EX SEWERS AND STORM DRAIN IF POSSIBLE. WATER MAIN CROSSING SHALL COMPLY WITH SWRCB TITLE 22 STORM DRAIN AND SEWER SEPARATION REQUIREMENTS, ANY DEVIATION MUST BE APPROVED BY SWRCB AND OPUD.
- BOTH THE EXISTING AND THE NEW WATER FACILITIES SHALL BE KEPT ACTIVE UNTIL ALL SERVICES ARE CROSSED OVER TO THE NEW FACILITIES AND THE SYSTEM IS ACCEPTED BY OPUD. CONTRACTOR IS RESPONSIBLE FOR ALL MATERIALS AND WORK ASSOCIATED WITH TEMPORARY FACILITIES NECESSARY PRIOR TO FINAL ABANDONMENT OF THE EXISTING FACILITIES.
- CONTRACTOR SHALL RETURN ALL REMOVED VALVES, METERS, AND TEST STATIONS TO THE DISTRICT UNLESS OTHERWISE NOTED ON THE PLANS. THE REMAINING MATERIAL AND APPURTENANCES FROM THE PROJECT WILL BE DISPOSED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE DISTRICT.

SURVEY NOTES

- TOPOGRAPHIC SURVEY PREPARED BY MHM, INC.
- HORIZONTAL AND VERTICAL CONTROL STATEMENT

THE COORDINATES AND BEARINGS SHOWN HEREON REFER TO NGS STATION "POWERLINE" AND NGS STATION "DL9195". BEARING BEING N84°54'02"E 5984.09' GRID DISTANCE. MEASURED BY REAL TIME KINETIC (RTK) GLOBAL POSITIONING SYSTEM (GPS) TECHNOLOGY BASED UPON TOPCON NETWORK SOLUTION USING THE 2011 EPOCH REFERENCING THE NORTH AMERICAN DATUM OF 1983 (NAD83), CALIFORNIA ZONE 2.

THE CONTROL POINT ELEVATIONS REFERENCED NORTH AMERICAN VERTICAL DATUM OF 1988 (NAV88) AND ORIGINATED FROM FOUND AND MEASURED MONUMENTS KS0935 "M743" ASSIGNED THE ELEVATION 61.63 FEET NAV88 AND DL9195 "POWERLINE" ASSIGNED THE ELEVATION 64.84 FEET NAV88 AS DETERMINED BY THE NATIONAL GEODETIC SURVEY.

- THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL EXISTING SURVEY MONUMENTS WITH IN THE WORK ZONE AND REPLACEMENT OF ALL SURVEY MONUMENTS DAMAGED OR DESTROYED BY CONSTRUCTION RELATED ACTIVITIES. THE CONTRACTOR SHALL BE RESPONSIBLE TO ARRANGE AND PAY FOR A DILIGENT AND THOROUGH SEARCH FOR SURVEY MONUMENTS, PERFORMED BY OR UNDER THE DIRECTIONS OF A CALIFORNIA LICENSED LAND SURVEYOR PRIOR TO THE BEGINNING OF CONSTRUCTION OR MAINTENANCE ACTIVITIES THAT COULD DISTURB OR DESTROY SURVEY MONUMENTS.

DDW WAIVER NOTES

- CONTRACTOR IS MADE AWARE THAT THE PROJECT WILL REQUIRE A WAIVER FOR MULTIPLE LOCATIONS FROM THE STATE WATER RESOURCES CONTROL BOARD DIVISION OF DRINKING WATER (DDW). THE DISTRICT HAS APPLIED FOR THE WAIVER AND EXPECTS TO SHARE IT WITH CONTRACTORS PRIOR TO BIDDING. CONTRACTOR SHALL REVIEW AND COMPLY WITH THE WAIVER AND ALL ASSOCIATED REQUIREMENTS OF THE WAIVER AND OTHER PROVISIONS INCLUDED IN THE PLANS AND SPECIFICATIONS.
- CONTRACTOR IS RESPONSIBLE TO PROVIDE ALL POTHOLING NECESSARY TO CONFIRM THE HORIZONTAL AND VERTICAL DISTANCES BETWEEN THE NEW WATER PIPELINE AND THE EXISTING STORM DRAIN AND SEWER FACILITIES. POTHOLING DATA COLLECTED BY CONTRACTOR MAY IDENTIFY ADDITIONAL LOCATIONS THAT REQUIRE DDW WAIVER BY NOT MEETING MINIMUM CLEARANCES. ANY DISCREPANCIES BETWEEN CLEARANCES SHOWN ON PLANS AND THOSE IDENTIFIED IN THE FIELD BY THE CONTRACTOR MUST BE IMMEDIATELY REPORTED TO THE ENGINEER. THESE LOCATIONS WILL BE EVALUATED AND MAY REQUIRE ADDITIONAL ENGINEERING DESIGN BEFORE CONSTRUCTION IS AUTHORIZED.
- CONTRACTOR IS RESPONSIBLE FOR DOCUMENTING CONSTRUCTION OF ALL LOCATIONS REQUIRING DDW WAIVER (INCLUDING BOTH PREVIOUSLY IDENTIFIED, AND THOSE IDENTIFIED DURING POTHOLING) INCLUDE RECORDING UTILITY CLEARANCE MEASUREMENTS (HORIZONTAL AND VERTICAL) AND TAKING PHOTOGRAPHS DURING CONSTRUCTION. CONTRACTOR MUST NOT BURY ANY DDW WAIVER LOCATION WITHOUT DISTRICT INSPECTION AND APPROVAL.

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REV	DATE	BY	DESCRIPTION

SCALE: AS NOTED

WARNING
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE.

DESIGNED MATT DOMENICHELLI
 DRAWN MATT DOMENICHELLI
 CHECKED JOE DOMENICHELLI

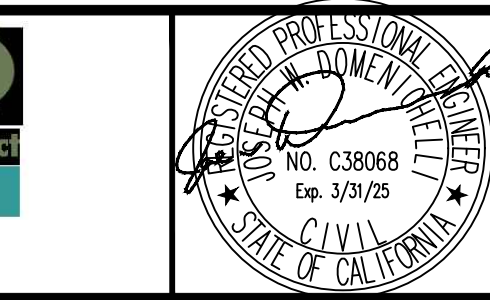
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 Olivehurst, CA 95961

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 Fax: (530) 743-3023



HISTORIC OLIVEHURST STEEL MAIN REPLACEMENT PROJECT

GENERAL NOTES

DWG	G2
SHEET	2
	OF 24

20240629.161633 Z:\OPUD-002 HISTORIC WATER INFRASTRUCTURE\DWG - PHASE 1\DWG\OPUD02-GS.DWG

EXISTING

- DOMESTIC PIPELINE
- GATE VALVE
- BUTTERFLY VALVE
- SERVICE WATER LINE WITH METER BOX
- AIR/VACUUM RELEASE VALVE
- BACKFLOW PREVENTION DEVICE
- FIRE HYDRANT
- EXISTING WATER LINE
- EXISTING SEWER LINE
- EXISTING STORM DRAIN LINE
- EXISTING GAS
- EXISTING CABLE
- EXISTING ELECTRIC
- EXISTING AT&T
- PUBLIC UTILITY EASEMENT
- RIGHT OF WAY
- EXISTING SEWER CLEANOUT
- EXISTING SEWER MANHOLE
- EXISTING IRRIGATION
- EXISTING METER BOX, SERVICE TO BE RECONNECTED
- EXISTING SURVEY MONUMENT
- EXISTING TEMPORARY BENCHMARK
- EXISTING ELECTRICAL BOX
- EXISTING ELECTRICAL BOX
- EXISTING TRAFFIC SIGNAL BOX
- EXISTING TRANSFORMER
- EXISTING TELEPHONE BOX
- EXISTING TELEVISION BOX
- EXISTING POLE
- EXISTING SIGN
- EXISTING MAILBOX

EXISTING

- EXISTING STORM DRAIN INLET
- EXISTING TRAFFIC DETECTOR
- EXISTING SANITARY SEWER MANHOLE
- EXISTING WATER BOX
- EXISTING ELECTRIC MANHOLE

PROPOSED

- DOMESTIC PIPELINE
- GATE VALVE
- BUTTERFLY VALVE
- SERVICE WATER LINE WITH METER BOX
- AIR/VACUUM RELEASE VALVE
- BLOWOFF VALVE
- BACKFLOW PREVENTION DEVICE
- FIRE HYDRANT
- WATER SAMPLING STATION
- REDUCER
- CAP AND ABANDON
- VALVE TO BE ABANDONED PER SPECIFICATION
- PIPE TO BE ABANDONED PER SPECIFICATION
- A.T.S. ANODE TEST STATION

ABBREVIATIONS

- AB - AGGREGATE BASE
- ABAN - ABANDON
- AC - ASPHALT CONCRETE OR ASBESTOS CEMENT PIPE
- ARV - AIR VACUUM RELEASE VALVE
- A.T.S. - ANODE TEST STATION
- BF, BFV - BUTTERFLY VALVE
- BFP - BACKFLOW PREVENTER
- CE - EXISTING METER IN CONCRETE WALKWAY, METER TO REMAIN IN SAME LOCATION
- C&G - CURB AND GUTTER
- CL - CENTERLINE / CLASS
- CMP - CORRUGATED METAL PIPE
- CONC - CONCENTRIC
- CR - CROSSING
- DCDA - DOUBLE CHECK DETECTOR CHECK VALVE ASSEMBLY
- DE - EXISTING METER IN DRIVEWAY, METER TO REMAIN IN SAME LOCATION
- DI - DRAIN INLET
- DIP - DUCTILE IRON PIPE
- DR - EXISTING METER IN DRIVEWAY, RELOCATE TO LANDSCAPE
- DWG - DRAWING
- EL - ELEVATION
- ELEC - ELECTRIC, ELECTRICIAN
- EOP - EDGE OF PAVEMENT
- (E)/EXIST/EX - EXISTING
- FH - FIRE HYDRANT
- FL - FLOWLINE
- FLG - FLANGE
- F.V. - FIELD VERIFY
- GB - GRADE BREAK
- GV - GATE VALVE
- H - HORIZONTAL
- H.A.S. - HORIZONTAL ALIGNMENT STATIONING
- HDC - HIGH DEFLECTION COUPLING
- IE - INVERT ELEVATION
- INV - INVERT
- L - LENGTH
- LS - LANDSCAPE METER BOX LOCATION
- M - METER
- MAX - MAXIMUM
- MIN - MINIMUM
- MJ - MECHANICAL JOINT
- NIC - NOT IN CONTRACT
- NO. - NUMBER
- (N) - NEW
- OPUD - OLIVEHURST PUBLIC UTILITY DISTRICT
- PC - PIPELINE CENTERLINE
- PE - PLAIN END
- PL - PROPERTY LINE
- PP - POWER POLE
- R - RADIUS
- RIM - RIM ELEVATION
- SD - STORM DRAIN
- SS - SANITARY SEWER
- SDMH - STORM DRAIN MANHOLE
- SSMH - SANITARY SEWER MANHOLE
- SW - SIDEWALK
- TC - TOP OF CURB
- TYP - TYPICAL
- UE - UNDERGROUND ELECTRICAL
- UG - UNDERGROUND GAS
- UT - UNDERGROUND TELEPHONE
- V - VERTICAL
- W - WATER MAIN
- W/- - WITH
- WS - WATER SERVICE
- WSC - WELDED STEEL CONDUIT

REV	DATE	BY	DESCRIPTION

SCALE: AS NOTED

WARNING
0 1/2 1
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE.

DESIGNED MATT DOMENICHELLI
 DRAWN MATT DOMENICHELLI
 CHECKED JOE DOMENICHELLI

DOMENICHELLI & ASSOCIATES

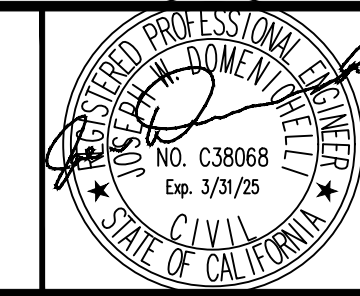
5180 Golden Foothill Pkwy, Suite 220
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Fax: (916) 933-4778

OPUD
Olivehurst Public Utility District

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Fax: (530) 743-3023

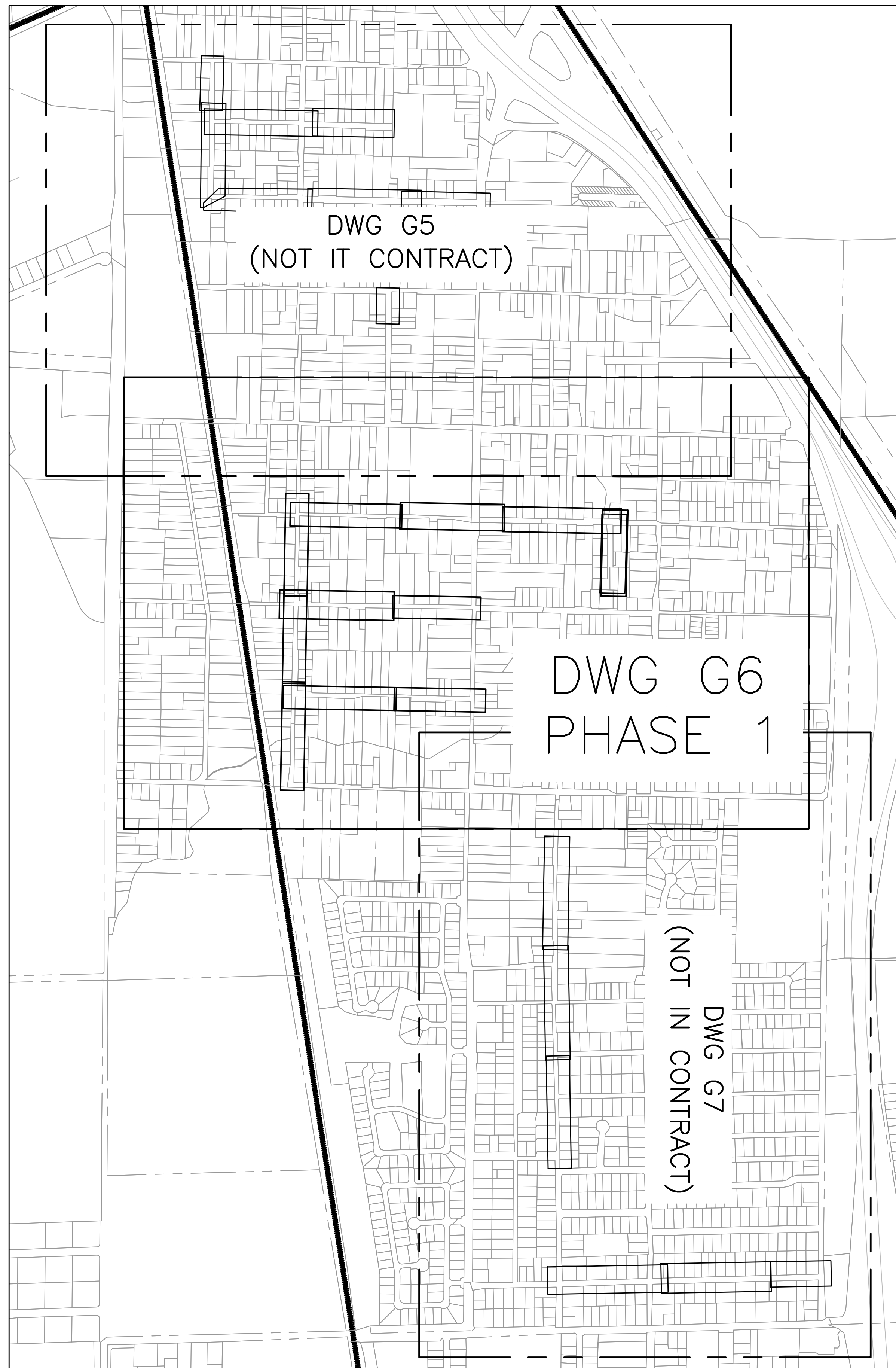


HISTORIC OLIVEHURST STEEL MAIN REPLACEMENT PROJECT

ABBREVIATIONS & SYMBOLS

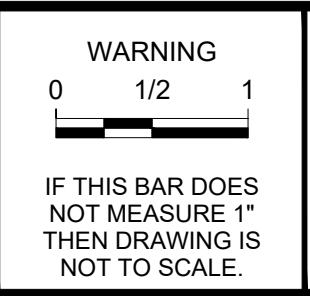
DWG **G3**
SHEET **3**
OF 24

Z:\OPUD-002 HISTORIC WATER INFRASTRUCTURE\DWG - PHASE 1\DWG\OPUD02-GS.DWG



REV	DATE	BY	DESCRIPTION

SCALE:
AS NOTED



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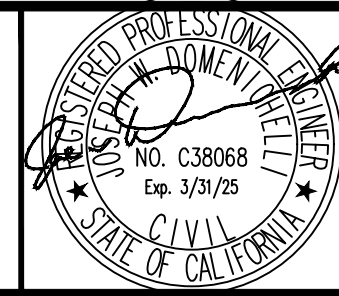
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HISTORIC OLIVEHURST STEEL MAIN REPLACEMENT PROJECT

OVERALL KEY MAP

DWG
G4
SHEET
4
OF 24

20240529_161633 Z:\OPUD-002 HISTORIC WATER INFRASTRUCTURE\DWG - PHASE 1\DWG\OPUD02-GS.DWG



CONTROL POINT: NUMBER & DESCRIPTION

- #10 MON IN WELL LS3649
- #11 MON IN WELL LS3649
- #12 MON IN WELL LS3649
- #13 MON IN WELL LS3649

REV	DATE	BY	DESCRIPTION

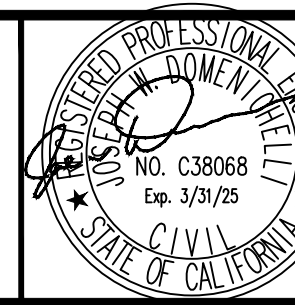
SCALE:
AS NOTED



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HISTORIC OLIVEHURST STEEL MAIN REPLACEMENT PROJECT
PHASE 1 - KEY MAP

DWG
G6
SHEET
5
OF 24

20240616.105020 Z:\OPUD-002 HISTORIC WATER INFRASTRUCTURE\DWG - PHASE 1 - CHANGES\DWG\OPUD02-GS.DWG

Street	Address	Detail	Side	Service Size	Meter Size	NOTES
8th Ave	1630	3	SHORT	1"	3/4"	
8th Ave	1633	2	LONG	1"	3/4"	meter not surveyed
8th Ave	1638	3	SHORT	1"	3/4"	meter not surveyed
8th Ave	1643	3	LONG	1"	3/4"	meter not surveyed
8th Ave	1646	3	SHORT	1"	3/4"	
8th Ave	1651	3	LONG	1"	3/4"	
8th Ave	1652	3	SHORT	1"	3/4"	
8th Ave	1659	1	LONG	1"	3/4"	
8th Ave	1661	2	LONG	1"	3/4"	
8th Ave	1662	3	SHORT	1"	3/4"	
8th Ave	1666	3	SHORT	1"	3/4"	
8th Ave	1669	1	LONG	1"	3/4"	
8th Ave	1673	1	LONG	1"	3/4"	meter not surveyed
9th Ave	1678	3	SHORT	1"	3/4"	
8th Ave	1682	3	SHORT	1"	3/4"	
8th Ave	1685	1	LONG	1"	3/4"	meter not surveyed
8th Ave	1690	5	SHORT	1"	3/4"	
8th Ave	1698	3	SHORT	1"	3/4"	meter not surveyed
8th Ave	1699	3	LONG	1"	3/4"	
8th Ave	1716	1	SHORT	1"	3/4"	Meter to be placed behind gate, special case
8th Ave	1724	5	SHORT	1"	3/4"	
8th Ave	1730	1	SHORT	1"	3/4"	Meter to be placed behind gate, special case
Olivehurst	4810	3	SHORT	1"	3/4"	
8th Ave	1766	1	SHORT	1"	3/4"	
8th Ave	1766	1	SHORT	1"	3/4"	
8th Ave	1769	1	LONG	1"	3/4"	meter not surveyed
8th Ave	1777	1	LONG	1"	3/4"	
8th Ave	1780	2	SHORT	1"	3/4"	
8th Ave	1781	1	LONG	1"	3/4"	Vacant, Provide meter box and corp stop
8th Ave	1784	2	SHORT	1"	3/4"	
8th Ave	1785	1	LONG	1"	3/4"	meter not surveyed
8th Ave	1792	1	SHORT	1"	3/4"	
8th Ave	1799	2	LONG	1"	3/4"	
8th Ave	1802	2	SHORT	1"	3/4"	meter not surveyed
8th Ave	1805	1	LONG	1"	3/4"	Vacant, Provide meter box and corp stop
8th Ave	1808	4	SHORT	1"	3/4"	meter not surveyed
8th Ave	1811	1	LONG	1"	3/4"	meter not surveyed
8th Ave	1815	1	LONG	1"	3/4"	
8th Ave	1816	1	SHORT	1"	3/4"	move to opposite side of PP to avoid fence
8th Ave	1820	4	SHORT	1"	3/4"	meter not surveyed
8th Ave	1821	2	LONG	2"	3/4"	Reconnect existing FH at the valve
8th Ave	1829	3	LONG	1"	3/4"	
8th Ave	1830	4	SHORT	1"	3/4"	meter not surveyed
8th Ave	1834	3	SHORT	1"	3/4"	
8th Ave	1835	3	LONG	1"	3/4"	
8th Ave	1841	1	LONG	2"	2"	
8th Ave	1848	2	SHORT	1"	3/4"	meter not surveyed

Street	Address	Detail	Side	Service Size	Meter Size	NOTES
9th Ave	1634	3	LONG	1"	3/4"	
9th Ave	1635	3	SHORT	1"	3/4"	
9th Ave	1640	3	LONG	1"	3/4"	
9th Ave	1641	2	SHORT	1"	3/4"	
9th Ave	1647	2	SHORT	1"	3/4"	
9th Ave	1648	3	LONG	1"	3/4"	
9th Ave	1654	4	LONG	1"	3/4"	meter not surveyed
9th Ave	1657	4	SHORT	1"	3/4"	meter not surveyed
9th Ave	1662	2	LONG	1"	3/4"	meter not surveyed
9th Ave	1667	2	SHORT	2"	1 - 1/2"	
9th Ave	1670	5	LONG	1"	3/4"	meter not surveyed
9th Ave	1674	2	LONG	1"	3/4"	
9th Ave	1677	1	SHORT	1"	3/4"	
9th Ave	1680	5	LONG	1"	3/4"	meter not surveyed
9th Ave	1685	3	SHORT	1"	3/4"	
9th Ave	1692	1	LONG	1"	3/4"	
9th Ave	1695	1	SHORT	1"	3/4"	
9th Ave	1702	3	LONG	1"	3/4"	
9th Ave	1705	5	SHORT	1"	3/4"	meter not surveyed
9th Ave	1714	3	LONG	1"	3/4"	
9th Ave	1715	3	SHORT	1"	3/4"	meter not surveyed
9th Ave	1720	1	LONG	1"	3/4"	
9th Ave	1723	2	SHORT	1"	3/4"	
9th Ave	1727	2	SHORT	1"	3/4"	
Olivehurst	4758	3	SHORT	1"	3/4"	meter not surveyed

Detail	1	2	3	4	5
Count	33	45	39	29	9

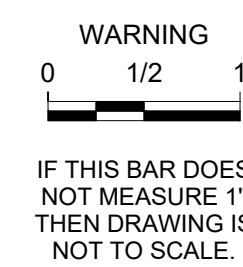
Bid Items	Short	Short w/ Relo	Long	Long w/ Relo
Count	50	34	33	38

NOTES:

- METER TO BE INSTALLED PER OPUD STANDARD DETAIL 8-32 AND DETAIL SHEET D4 DRAWINGS 1-5 AS IDENTIFIED ON THIS SHEET.
- DETAIL COUNT AND BID COUNT IDENTIFIED ON THIS SHEET ARE TOTALS FOR ALL METERS LISTED ON SHEETS G8 & G9.

1	7/3/24	MD	ADDENDUM 1
2	7/19/24	MD	ADDENDUM 2
REV	DATE	BY	DESCRIPTION

SCALE:
AS NOTED

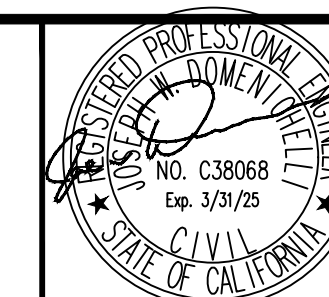


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HISTORIC OLIVEHURST STEEL MAIN REPLACEMENT PROJECT

METER SHEET



DWG
G8
SHEET
6
OF 24

20240616.105020 Z:\OPUD-002 HISTORIC WATER INFRASTRUCTURE\DWG - PHASE 1 - CHANGES\DWG\OPUD02.GS.DWG

Street	Address	Detail	Side	Service Size	Meter Size	NOTES
Western Ave	4635	5	LONG	1"	3/4"	meter not surveyed
Western Ave	4639	4	LONG	1"	3/4"	meter not surveyed
Western Ave	4646	3	SHORT	1"	3/4"	Existing service is not connected to meter box, locate intract and coordinate with district inspector for meter box relocation
Western Ave	4649	4	LONG	1"	3/4"	meter not surveyed
Western Ave	4652	5	SHORT	1"	3/4"	meter not surveyed
Western Ave	4658	5	SHORT	1"	3/4"	
Western Ave	4660	4	SHORT	1"	3/4"	meter not surveyed
Western Ave	4664	4	SHORT	1"	3/4"	meter not surveyed
Western Ave	4667	1	LONG	1"	3/4"	meter not surveyed
Western Ave	4671	5	LONG	1"	3/4"	meter not surveyed
Western Ave	4676	2	SHORT	1"	3/4"	meter not surveyed
Western Ave	4681	1	LONG	1"	3/4"	Vacant, Provide meter box and corp stop
Western Ave	4688	4	SHORT	1"	3/4"	meter not surveyed
Western Ave	4694	3	SHORT	1"	3/4"	meter not surveyed
Western Ave	4696	4	SHORT	1"	3/4"	meter not surveyed
Western Ave	4702	3	SHORT	1"	3/4"	
Western Ave	4703	4	LONG	1"	3/4"	
Western Ave	4710	4	SHORT	1"	3/4"	
Western Ave	4711	1	LONG	1"	3/4"	
Western Ave	4712	2	SHORT	1"	3/4"	
Western Ave	4717	1	LONG	1"	3/4"	
Western Ave	4718	4	SHORT	1"	3/4"	meter not surveyed
Western Ave	4723	2	LONG	1"	3/4"	meter not surveyed
Western Ave	4724	4	SHORT	1"	3/4"	meter not surveyed
Western Ave	4728	4	SHORT	1"	3/4"	meter not surveyed
Western Ave	4731	3	LONG	1"	3/4"	meter not surveyed
Western Ave	4734	4	SHORT	1"	3/4"	meter not surveyed
Western Ave	4737	2	LONG	1"	3/4"	4737,4739,4741 all on new 1" poly service from Western Ave
Western Ave	4740	3	SHORT	1"	3/4"	meter not surveyed
Western Ave	4759	2	SHORT	1"	3/4"	meter not surveyed
Western Ave	4764	1	LONG	1"	3/4"	
Western Ave	4768	1	LONG	1"	3/4"	
Western Ave	4775	2	SHORT	1"	3/4"	meter not surveyed
Western Ave	4776	3	LONG	1"	3/4"	meter not surveyed
Western Ave	4781	4	SHORT	1"	3/4"	meter not surveyed
Western Ave	4787	2	SHORT	1"	3/4"	
Western Ave	4790	4	LONG	1"	3/4"	meter not surveyed
Western Ave	4793	2	SHORT	1"	3/4"	meter not surveyed
Western Ave	4796	2	LONG	1"	3/4"	
Western Ave	4799	2	SHORT	1"	3/4"	meter not surveyed
Western Ave	4810	3	LONG	1"	3/4"	meter not surveyed
Private Rd	1844A	4	SHORT	1"	3/4"	meter not surveyed
Private Rd	1844B	4	SHORT	1"	3/4"	meter not surveyed
Private Rd	1838A	2	LONG	1"	3/4"	meter not surveyed
Private Rd	1838B	2	LONG	1"	3/4"	meter not surveyed
Private Rd	1846A	2	LONG	1"	3/4"	meter not surveyed
Private Rd	1846B	2	LONG	1"	3/4"	meter not surveyed

Street	Address	Detail	Side	Service Size	Meter Size	NOTES
10th Ave	1638	2	LONG	1"	3/4"	
10th Ave	1639	2	SHORT	1"	3/4"	Meter located on Western Ave
10th Ave	1647	3	SHORT	1"	3/4"	
10th Ave	1650	3	LONG	1"	3/4"	
10th Ave	1653	4	SHORT	1"	3/4"	
10th Ave	1658	4	LONG	1"	3/4"	meter not surveyed
10th Ave	1661	3	SHORT	1"	3/4"	meter not surveyed
10th Ave	1667	2	SHORT	1"	3/4"	Meter not surveyed
10th Ave	1668	4	LONG	1"	3/4"	meter not surveyed
10th Ave	1673	2	SHORT	1"	3/4"	
10th Ave	1674	4	LONG	1"	3/4"	meter not surveyed
10th Ave	1680	3	LONG	1"	3/4"	meter not surveyed
10th Ave	1685	1	SHORT	1"	3/4"	meter not surveyed
10th Ave	1687	2	SHORT	1"	3/4"	meter not surveyed
10th Ave	1691	2	SHORT	1"	3/4"	
10th Ave	1691A	2	SHORT	1"	3/4"	
10th Ave	1692	2	LONG	1"	3/4"	
10th Ave	1693	2	SHORT	1"	3/4"	
10th Ave	1693A	2	SHORT	1"	3/4"	
10th Ave	1695	2	SHORT	1"	3/4"	
10th Ave	1696	4	LONG	1"	3/4"	meter not surveyed
10th Ave	1704	3	LONG	1"	3/4"	meter not surveyed
10th Ave	1707	2	SHORT	1"	3/4"	
10th Ave	1707A	2	SHORT	1"	3/4"	
10th Ave	1708	2	LONG	1 1/2"	3/4"	meter not surveyed
10th Ave	1710	2	LONG	1 1/2"	3/4"	meter not surveyed
10th Ave	1716	2	LONG	1"	3/4"	
10th Ave	1716A	1	LONG	1"	3/4"	
10th Ave	1717	3	SHORT	1"	3/4"	meter not surveyed
10th Ave	1722	4	LONG	1"	3/4"	meter not surveyed
10th Ave	1725	3	SHORT	1"	3/4"	meter not surveyed
10th Ave	1730	4	LONG	1"	3/4"	meter not surveyed
10th Ave	1731	1	SHORT	1"	3/4"	
10th Ave	1735	1	SHORT	1"	3/4"	meter not surveyed
10th Ave	1736	1	LONG	1"	3/4"	
10th Ave	1739	4	SHORT	1"	3/4"	meter not surveyed
10th Ave	1744					meter on olivehurst, out of scope
Olivehurst	4700					meter on olivehurst, out of scope

Detail	1	2	3	4	5
Count	33	45	39	29	9

Bid Items	Short	Short w/ Relo	Long	Long w/ Relo
Count	50	34	33	38

NOTES:

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1	7/3/24	MD	ADDENDUM 1
2	7/19/24	MD	ADDENDUM 2
REV	DATE	BY	DESCRIPTION

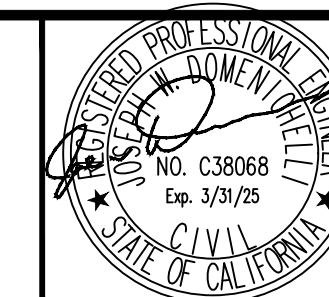
SCALE:
AS NOTED

WARNING
0 1/2 1
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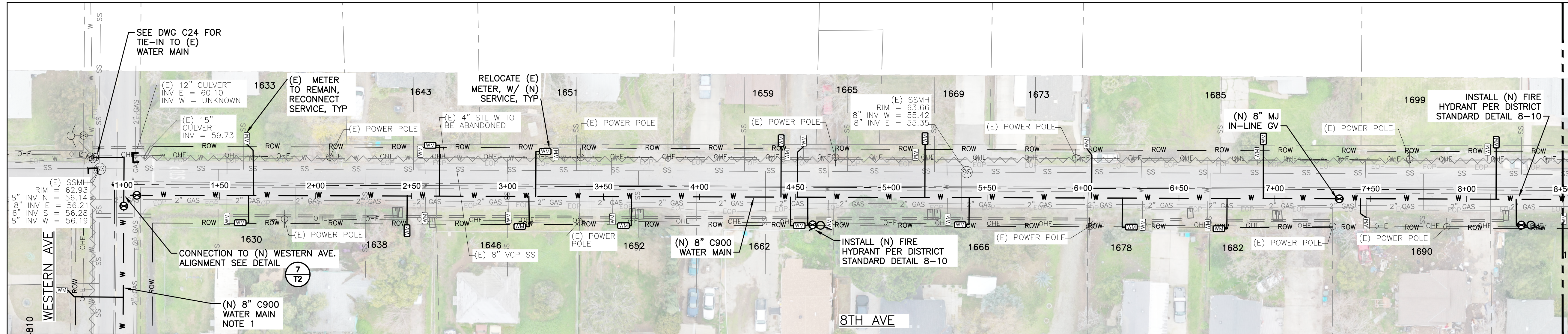


HISTORIC OLIVEHURST STEEL MAIN REPLACEMENT PROJECT

METER SHEET

DWG G9
SHEET 7
OF 24

20240528.172423 Z:\OPUD-002 HISTORIC WATER INFRASTRUCTURE\DWG - PHASE 1\DWG\OPUD02-C15-25_WESTERN_8_9_10TH.DWG



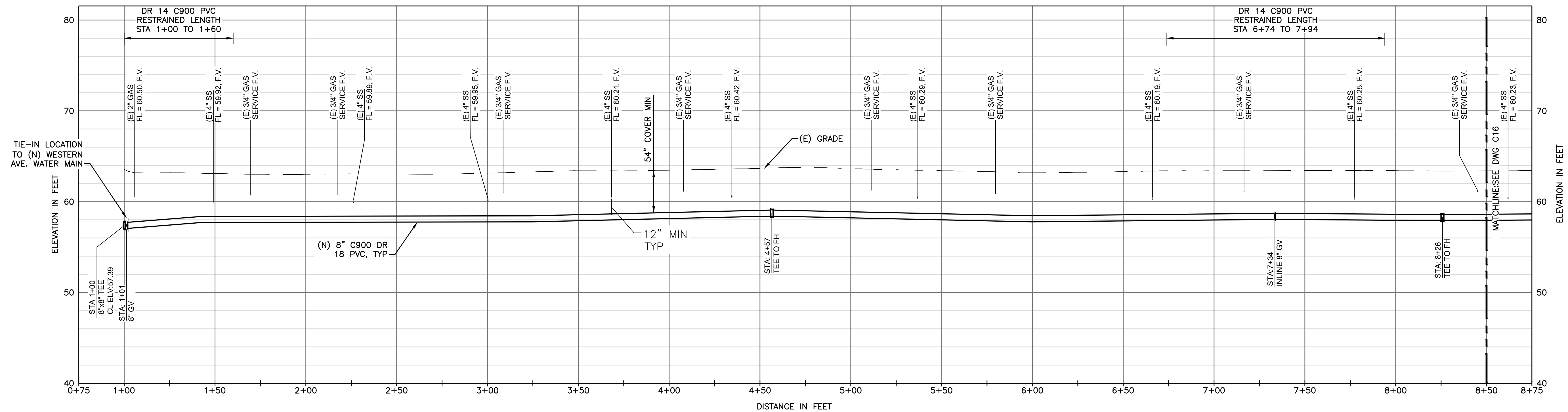
PLAN

SCALE: 1' = 30'



SHEET NOTES:

1. NOT ALL METERS HAVE BEEN SURVEYED, LOCATIONS ARE SCHEMATIC.
2. FINAL METER PLACEMENT SHALL BE COORDINATED WITH THE PROPERTY OWNER AND APPROVED BY THE DISTRICT INSPECTOR.
3. REFER TO METER SHEETS G8 & G9 FOR ADDITIONAL INFORMATION ON METER REQUIREMENTS.
4. EXISTING LATERALS NOT POTHOLED, CONTRACTOR TO VERIFY UTILITY DEPTHS AND LOCATIONS.
5. MAINTAIN 5' MINIMUM CLEARANCE WHEN EXCAVATING AROUND POWER POLES.
6. FOR DDW REQUIREMENTS, SEE DETAILS 1 & 2 ON DWG D1



PROFILE

HORIZONTAL SCALE: 1' = 30'
VERTICLE SCALE: 1" = 6'

REV	DATE	BY	DESCRIPTION

SCALE: AS NOTED

WARNING
1/2 1
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE.

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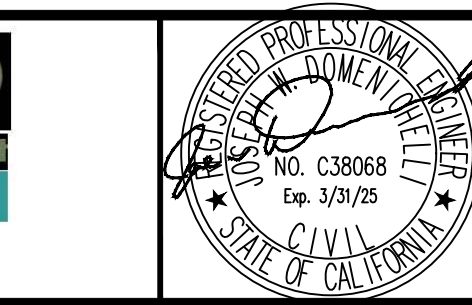
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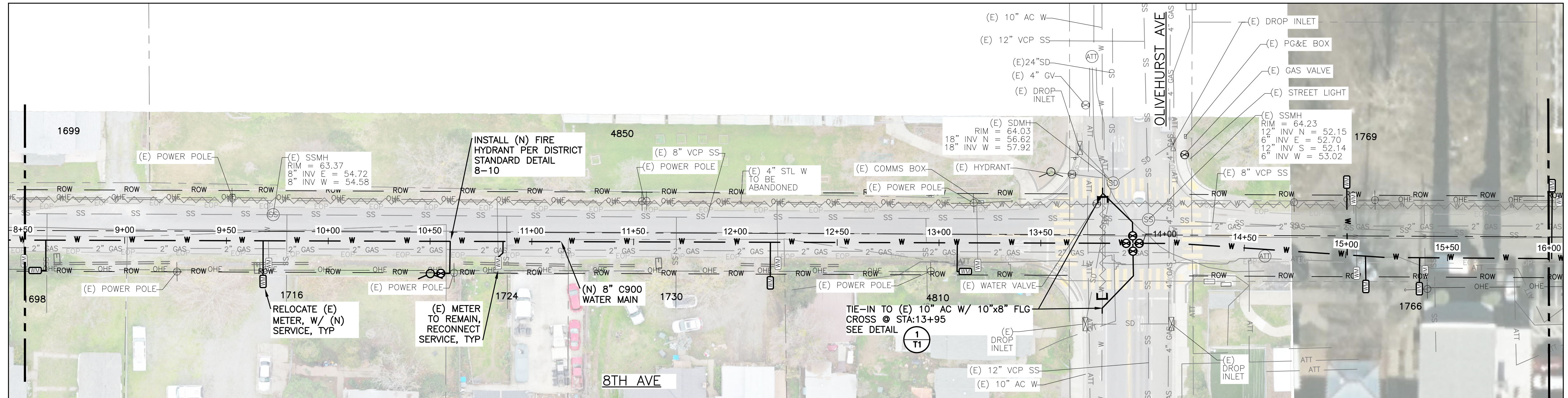


HISTORIC OLIVEHURST STEEL MAIN REPLACEMENT PROJECT

**8TH AVE. ALIGNMENT
STA. 1+00 TO STA. 8+50**

DWG **C15**
SHEET **8**
OF 24

20240528.172423 Z:\OPUD-002 HISTORIC WATER INFRASTRUCTURE\DWG - PHASE 1\DWG\OPUD02-C15-25 WESTERN_8_9_10TH.DWG



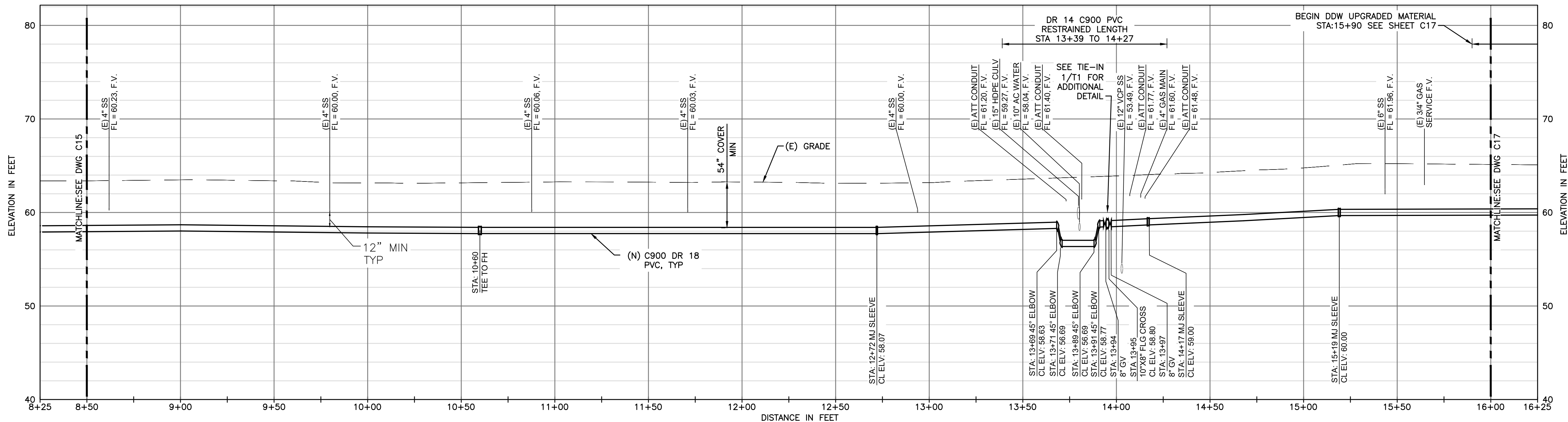
PLAN

SCALE: 1' = 30'



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6. FOR DDW REQUIREMENTS, SEE DETAILS 1 & 2 ON DWG D1



PROFILE

HORIZONTAL SCALE: 1' = 30'
VERTICLE SCALE: 1" = 6'

REV	DATE	BY	DESCRIPTION

SCALE: AS NOTED

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CHECKED JOE DOMENICHELLI

DOMENICHELLI & ASSOCIATES

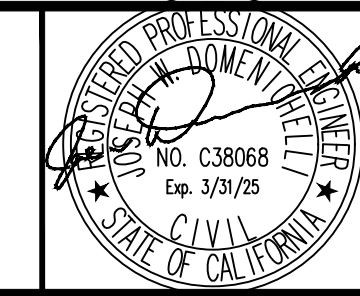
5180 Golden Foothill Pkwy, Suite 220
El Dorado Hills, CA 95762

Ph: (916) 933-1997
Fax: (916) 933-4778

OPUD
Olivehurst Public Utility District

1970 9th Avenue
Olivehurst, CA 95961

Ph: (530) 743-4657
Fax: (530) 743-3023

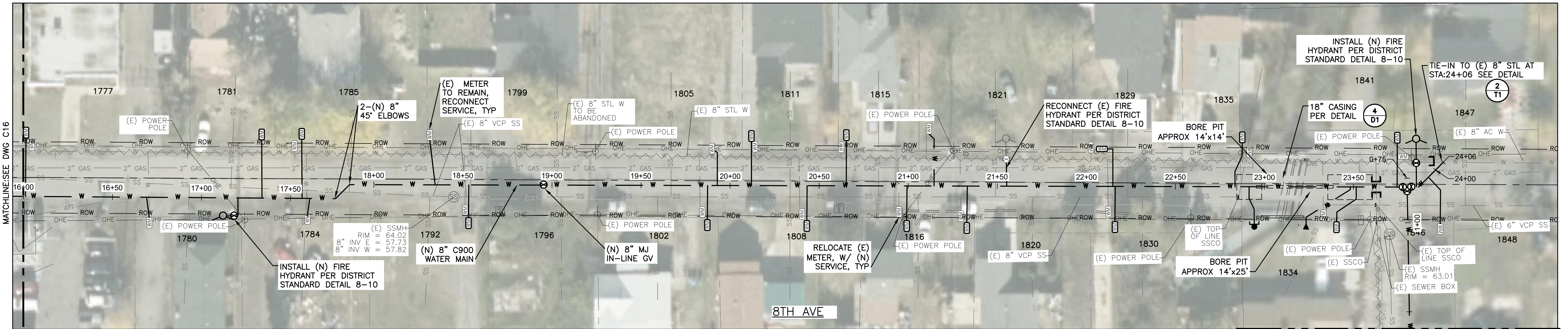


HISTORIC OLIVEHURST STEEL MAIN REPLACEMENT PROJECT

8TH AVE. ALIGNMENT
STA. 8+50 TO STA. 16+00

DWG **C16**
SHEET **9**
OF 24

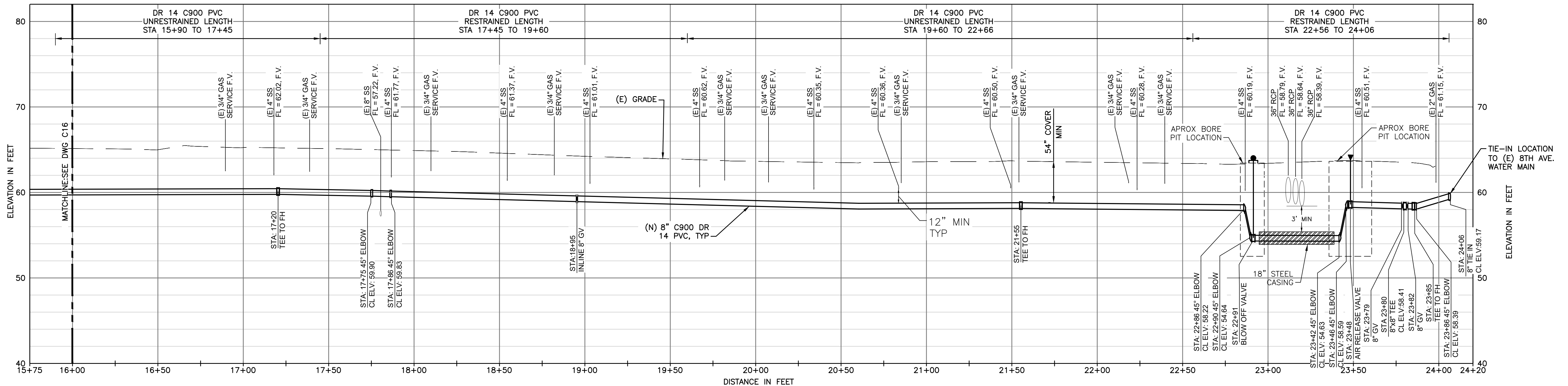
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PLAN
SCALE: 1" = 30'



- SHEET NOTES:**
- NOT ALL METERS HAVE BEEN SURVEYED, LOCATIONS ARE SCHEMATIC.
 - FINAL METER PLACEMENT SHALL BE COORDINATED WITH THE PROPERTY OWNER AND APPROVED BY THE DISTRICT INSPECTOR.
 - REFER TO METER SHEETS G8 & G9 FOR ADDITIONAL INFORMATION ON METER REQUIREMENTS.
 - EXISTING LATERALS NOT POTHOLED, CONTRACTOR TO VERIFY UTILITY DEPTHS AND LOCATIONS.
 - MAINTAIN 5' MINIMUM CLEARANCE WHEN EXCAVATING AROUND POWER POLES.
 - FOR DDW REQUIREMENTS, SEE DETAILS 1 & 2 ON DWG D1



PROFILE
HORIZONTAL SCALE: 1" = 30'
VERTICAL SCALE: 1" = 6'

REV	DATE	BY	DESCRIPTION

SCALE: AS NOTED

WARNING 1/2 1

IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE.

DESIGNED MATT DOMENICHELLI
DRAWN MATT DOMENICHELLI
CHECKED JOE DOMENICHELLI

DOMENICHELLI & ASSOCIATES

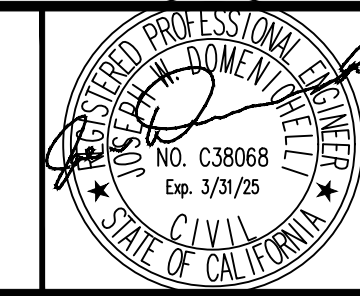
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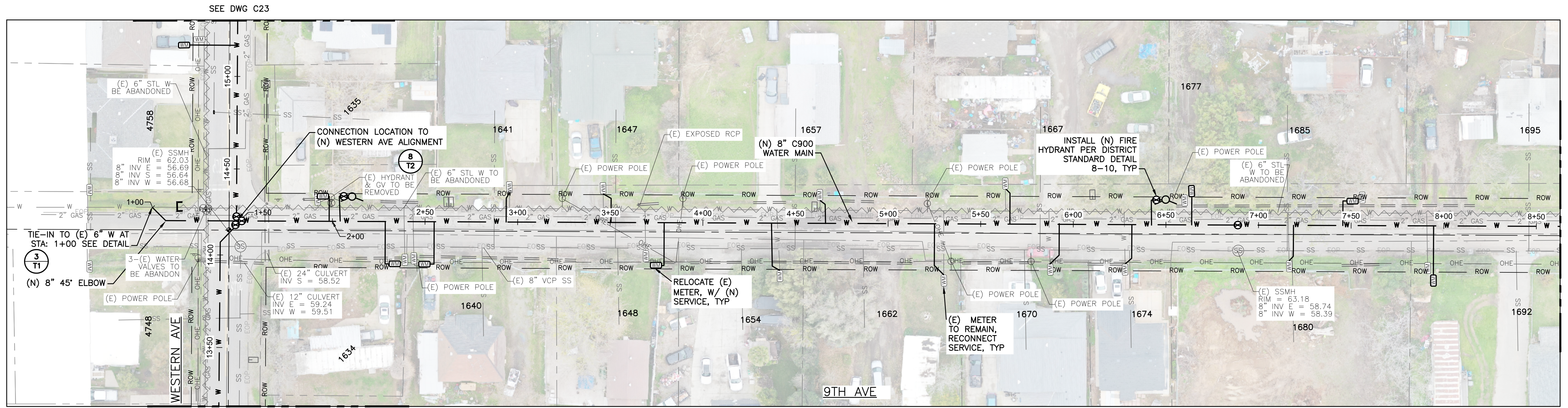


HISTORIC OLIVEHURST STEEL MAIN REPLACEMENT PROJECT

8TH AVE. ALIGNMENT
STA. 16+00 TO STA. 24+00

DWG **C17**
SHEET **10**
OF 24

20240528.172423 Z:\IOPUD-002 HISTORIC WATER INFRASTRUCTURE\DWG - PHASE 1\DWG\IOPUD02-C15-25_WESTERN_8_9_10TH.DWG



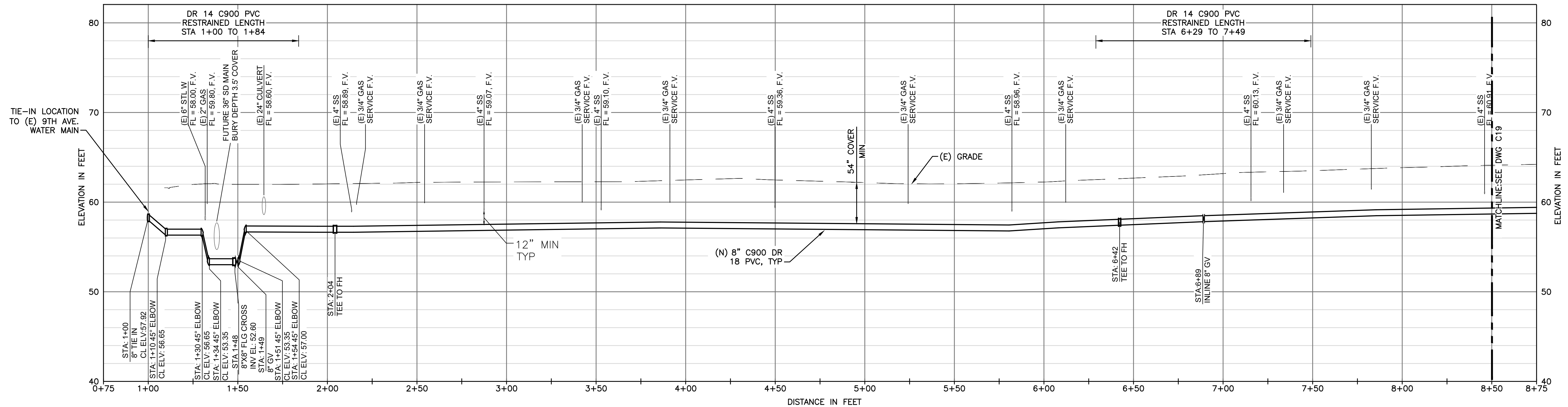
PLAN

SCALE: 1" = 30'



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PROFILE

HORIZONTAL SCALE: 1" = 30'
VERTICAL SCALE: 1" = 6'

REV	DATE	BY	DESCRIPTION

SCALE: AS NOTED

WARNING 1/2 1

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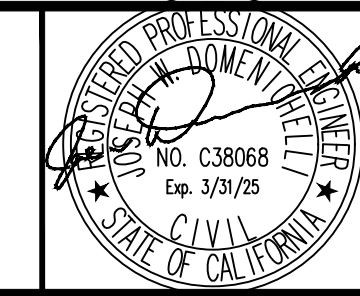
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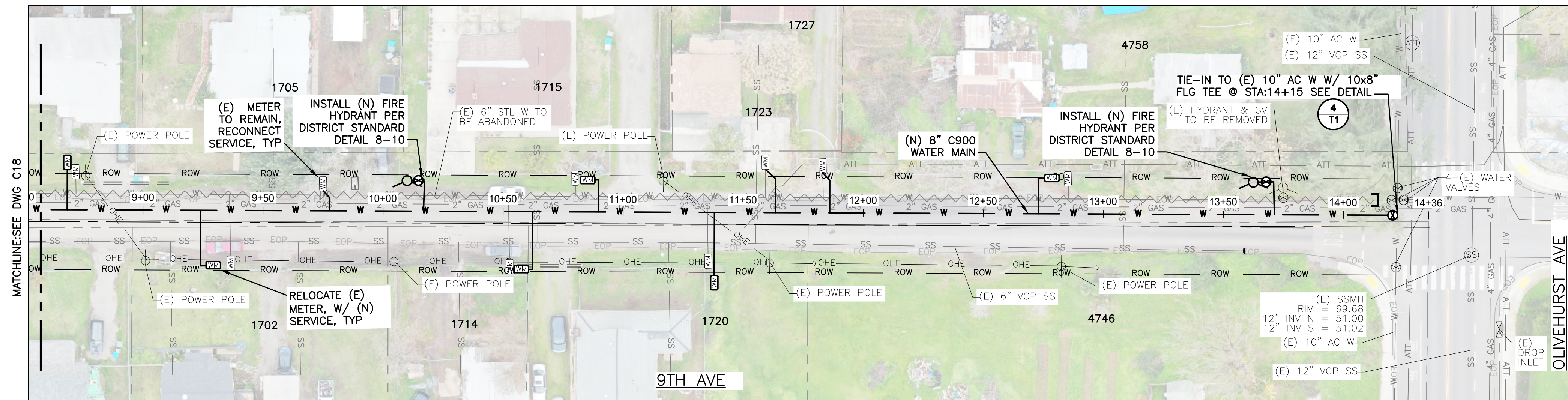


HISTORIC OLIVEHURST STEEL MAIN REPLACEMENT PROJECT

**9TH AVE. ALIGNMENT
STA. 1+00 TO STA. 8+50**

DWG **C18**
SHEET **11**
OF 24

20240628.172423 Z:\OPUD-002 HISTORIC WATER INFRASTRUCTURE\DWG - PHASE 1\DWG\OPUD02-C15-25 WESTERN_8_9_10TH.DWG



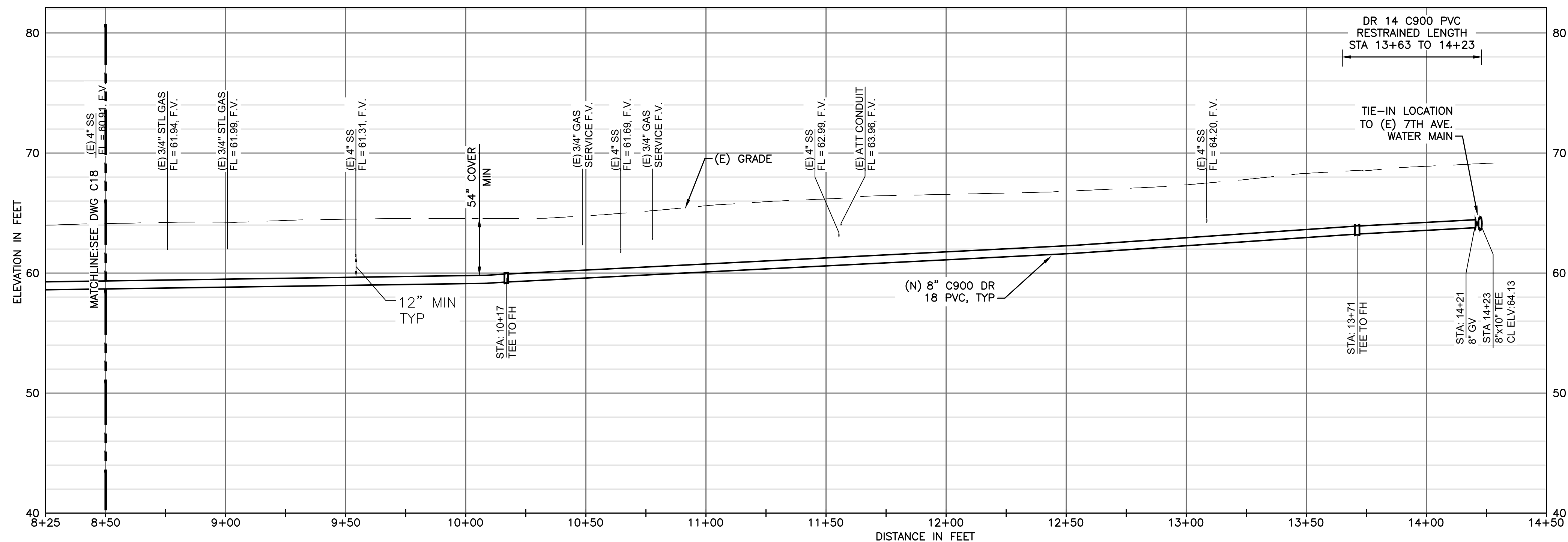
PLAN

SCALE: 1" = 30'



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PROFILE

HORIZONTAL SCALE: 1" = 30'
VERTICLE SCALE: 1" = 6'

REV	DATE	BY	DESCRIPTION

SCALE: AS NOTED

WARNING
0 1/2 1

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DRAWN MATT DOMENICHELLI
CHECKED JOE DOMENICHELLI

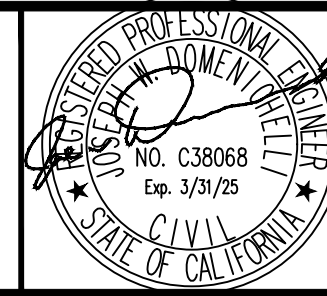
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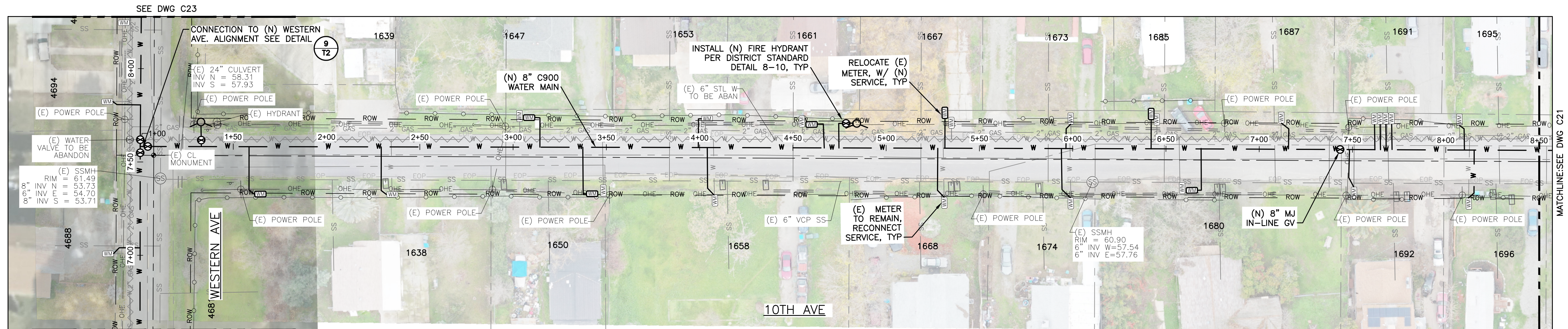


HISTORIC OLIVEHURST STEEL MAIN REPLACEMENT PROJECT

**9TH AVE. ALIGNMENT
STA. 8+50 TO STA. 14+20**

DWG
C19
SHEET
12
OF 24

20240528.172423 Z:\OPUD-002 HISTORIC WATER INFRASTRUCTURE\DWG - PHASE 1\DWG\OPUD02-C15-25 WESTERN_8_9_10TH.DWG



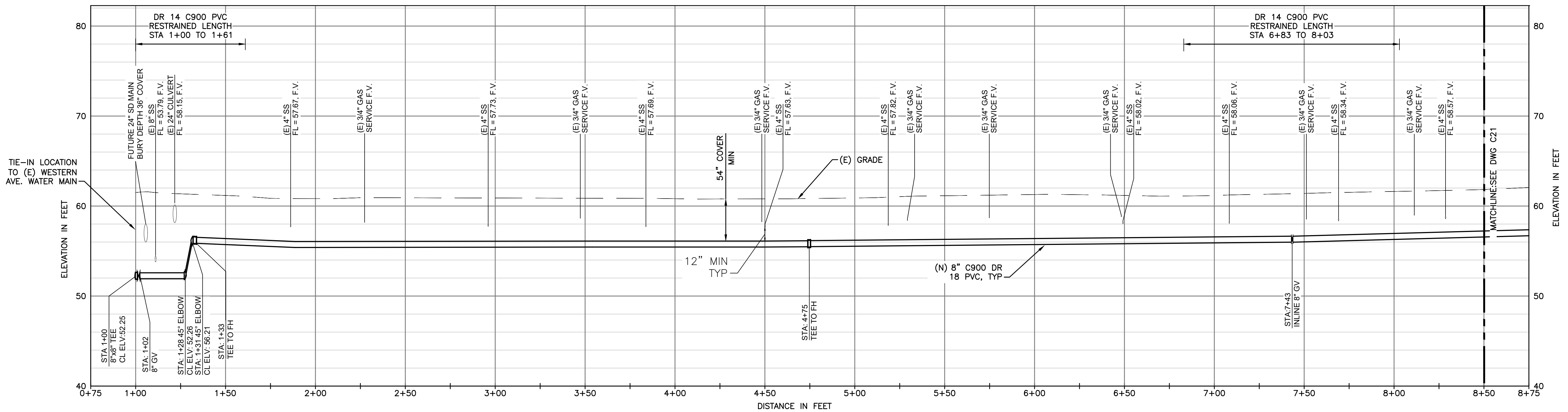
PLAN

SCALE: 1" = 30'



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PROFILE
 HORIZONTAL SCALE: 1" = 30'
 VERTICAL SCALE: 1" = 6'

REV	DATE	BY	DESCRIPTION

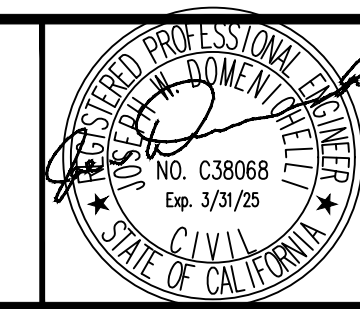
SCALE: AS NOTED

WARNING
 0 1/2 1
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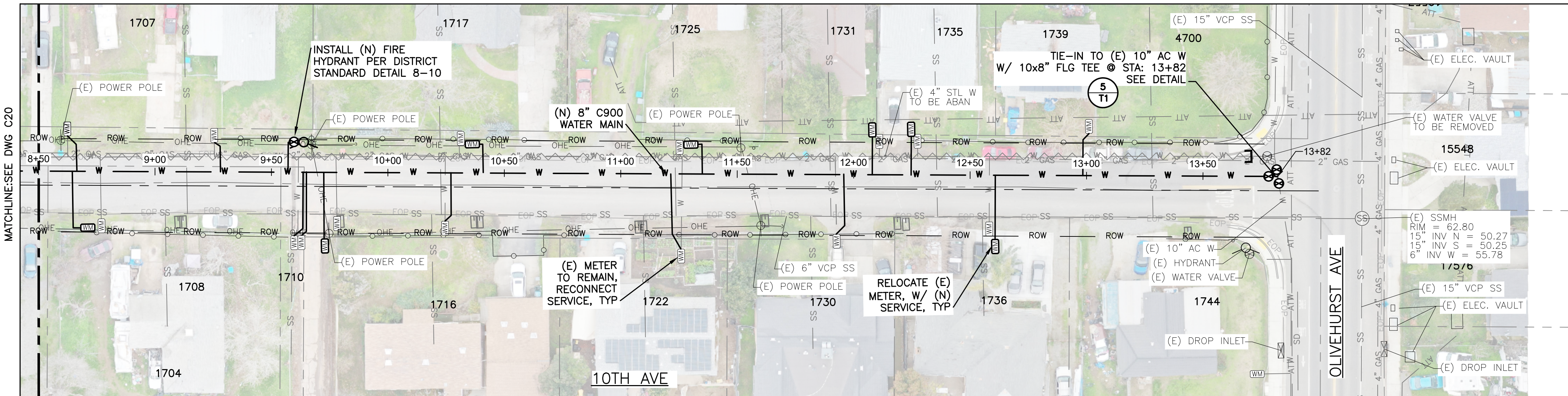
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 Olivhurst Public Utility District
 1970 9th Avenue
 Olivhurst, CA 95961
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HISTORIC OLIVEHURST STEEL MAIN REPLACEMENT PROJECT
10TH AVE. ALIGNMENT
STA. 1+00 TO STA. 8+50

DWG **C20**
 SHEET **13**
 OF 24

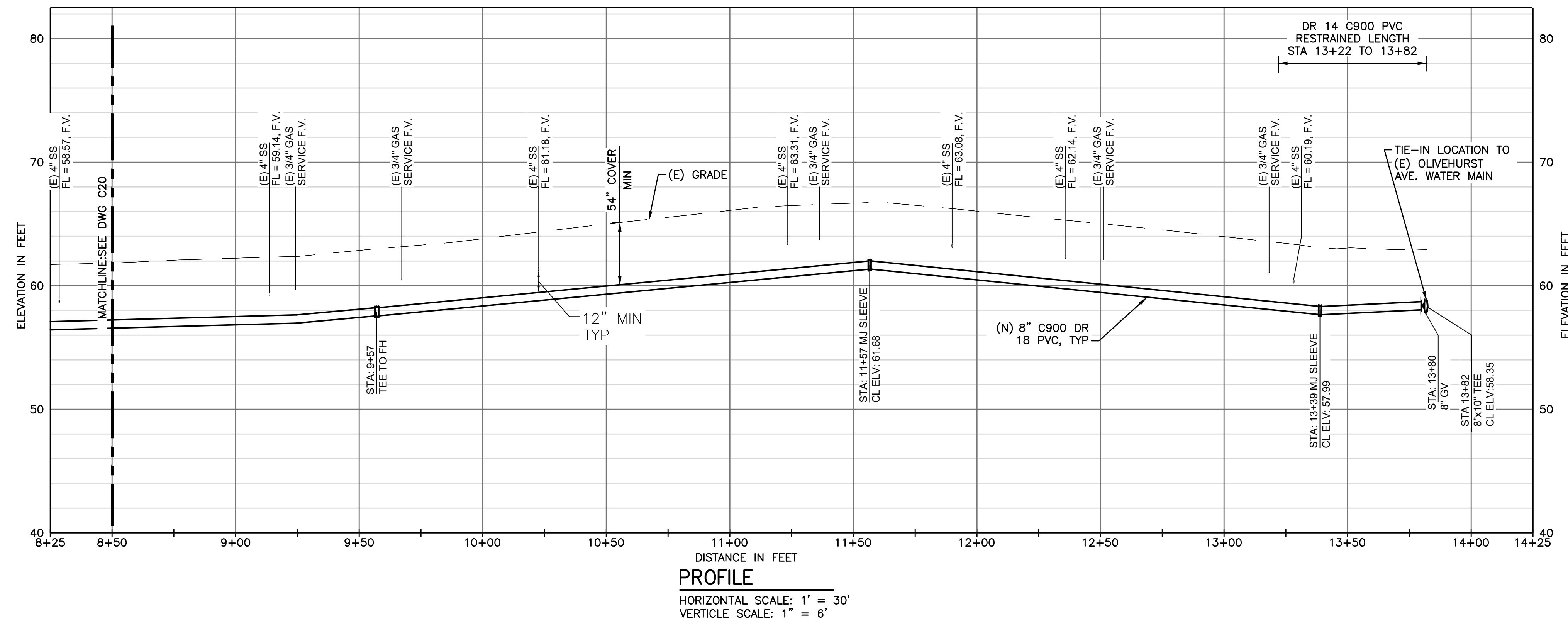
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PLAN
SCALE: 1' = 30'



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PROFILE
HORIZONTAL SCALE: 1' = 30'
VERTICLE SCALE: 1" = 6'

REV	DATE	BY	DESCRIPTION

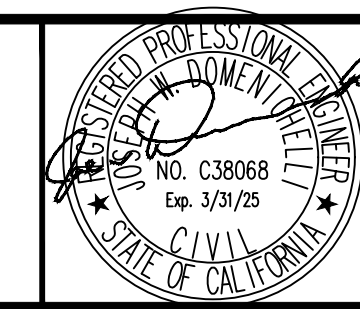
SCALE: AS NOTED

WARNING
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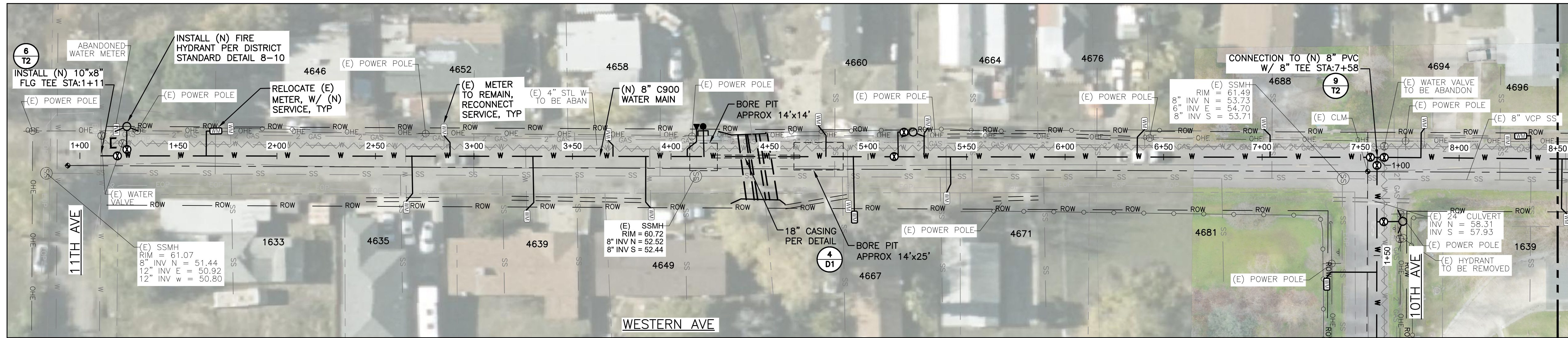
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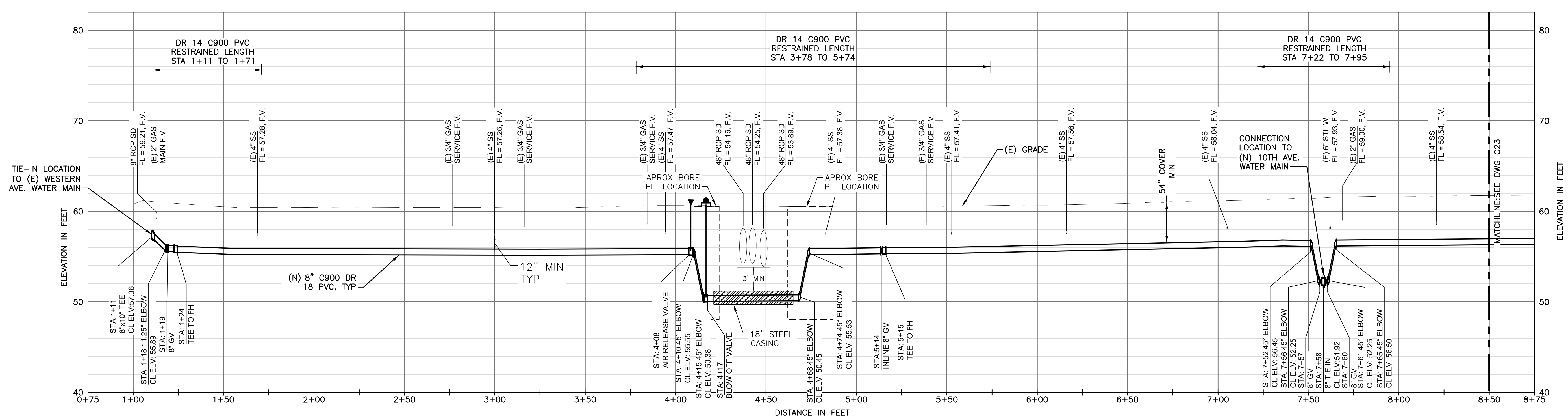


HISTORIC OLIVEHURST STEEL MAIN REPLACEMENT PROJECT
10TH AVE. ALIGNMENT
STA. 8+50 TO STA. 13+75

DWG **C21**
SHEET **14**
OF 24



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Z:\IOPUD-002 HISTORIC WATER INFRASTRUCTURE\DWG - PHASE I\DWG\IOPUD02-C15-25 WESTERN_8_9_10TH.DWG

REV	DATE	BY	DESCRIPTION

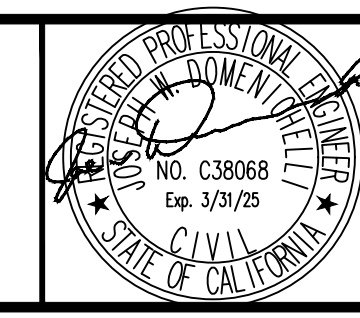
SCALE: AS NOTED

WARNING
0 1/2 1
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DESIGNED MATT DOMENICHELLI
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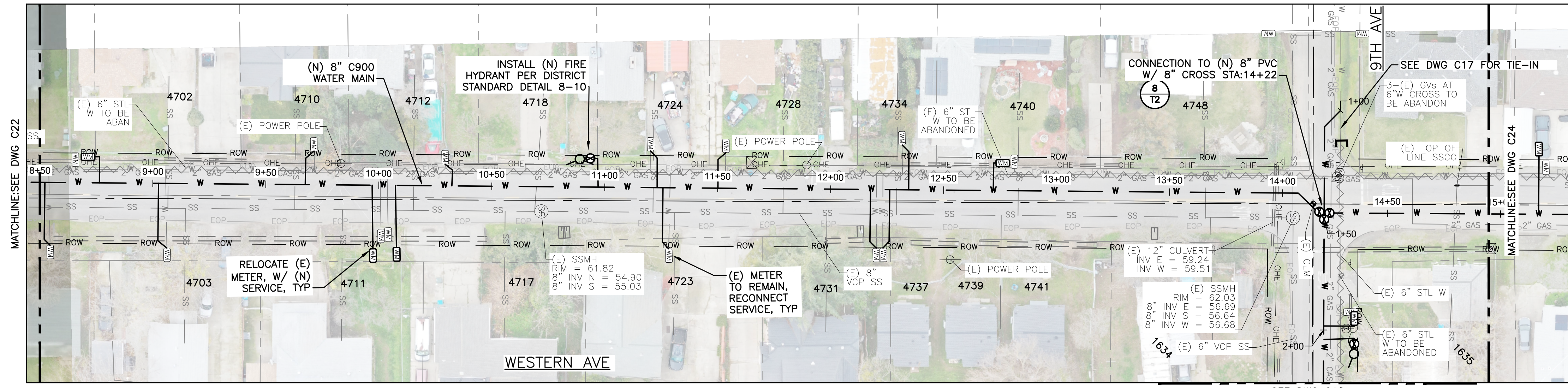
OPUD
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HISTORIC OLIVEHURST STEEL MAIN REPLACEMENT PROJECT
WESTERN AVE. ALIGNMENT
STA. 1+00 TO STA. 8+50

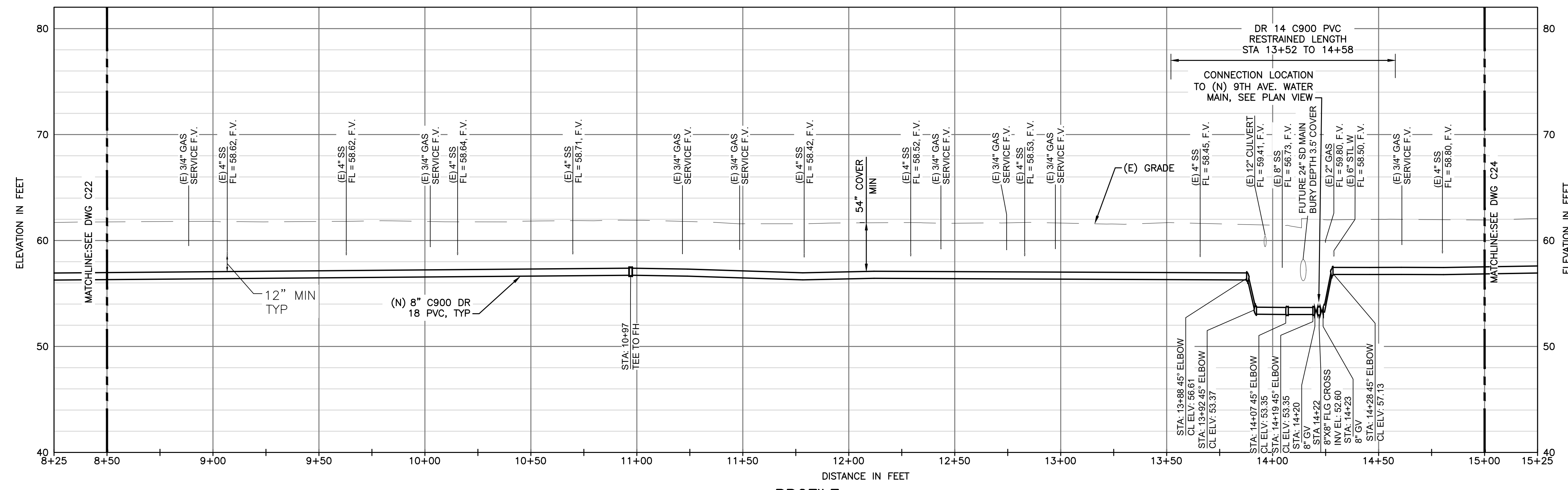
DWG **C22**
SHEET **15**
OF 24

20240528.172423 Z:\OPUD-002 HISTORIC WATER INFRASTRUCTURE\DWG - PHASE 1\DWG\OPUD02-C15-25 WESTERN_8_9_10TH.DWG



PLAN
SCALE: 1" = 30'

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PROFILE
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VERTICLE SCALE: 1" = 6'

REV	DATE	BY	DESCRIPTION

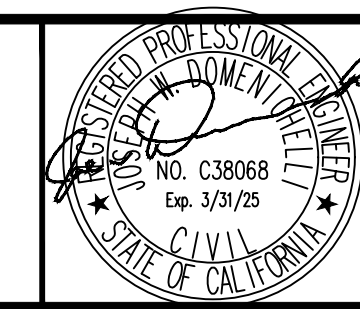
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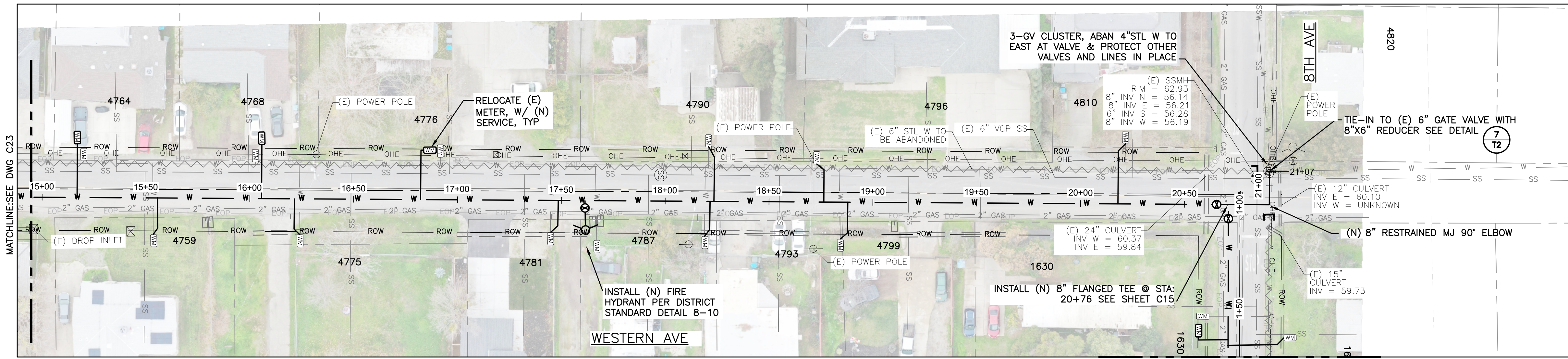
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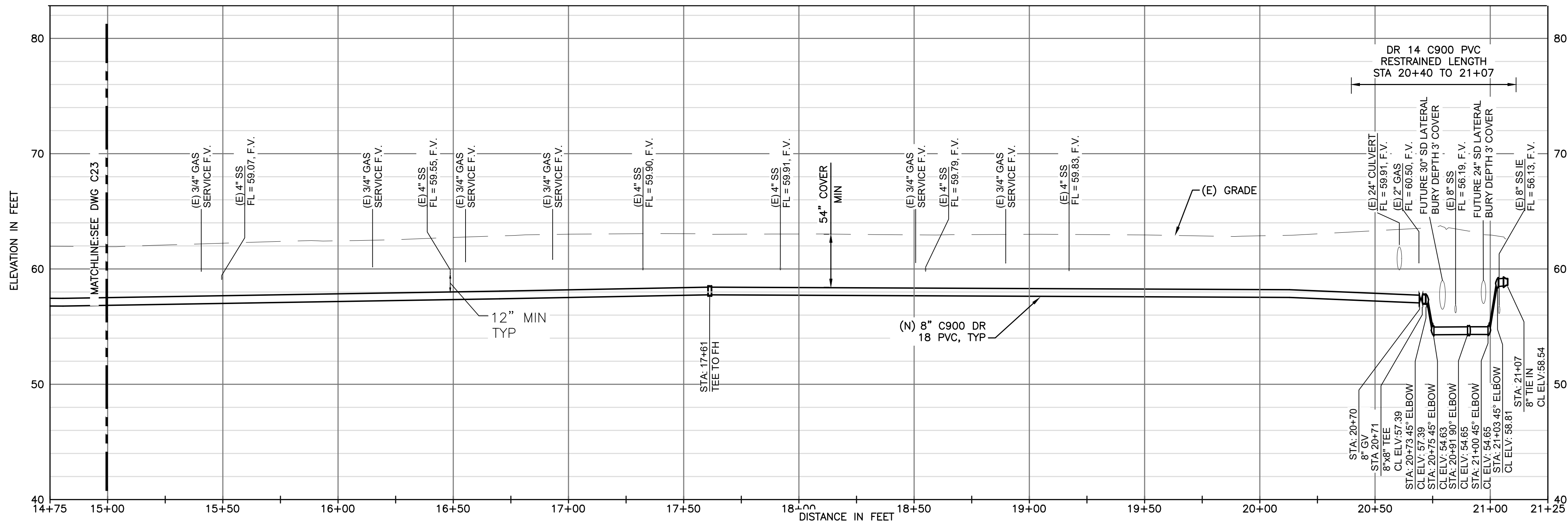
HISTORIC OLIVEHURST STEEL MAIN REPLACEMENT PROJECT
WESTERN AVE. ALIGNMENT
STA. 8+50 TO STA. 15+00

DWG **C23**
SHEET **16**
OF 24



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PROFILE
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VERTICLE SCALE: 1" = 6'

20240528.172423 Z:\OPUD-002 HISTORIC WATER INFRASTRUCTURE\DWG - PHASE 1\DWG\OPUD02-C15-25 WESTERN_8_9_10TH.DWG

REV	DATE	BY	DESCRIPTION

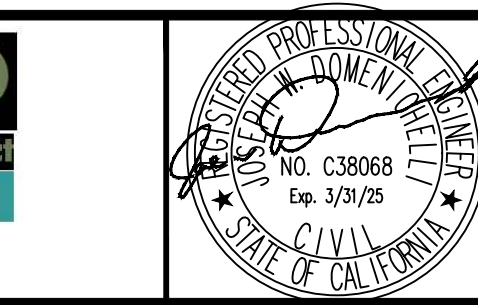
SCALE: AS NOTED

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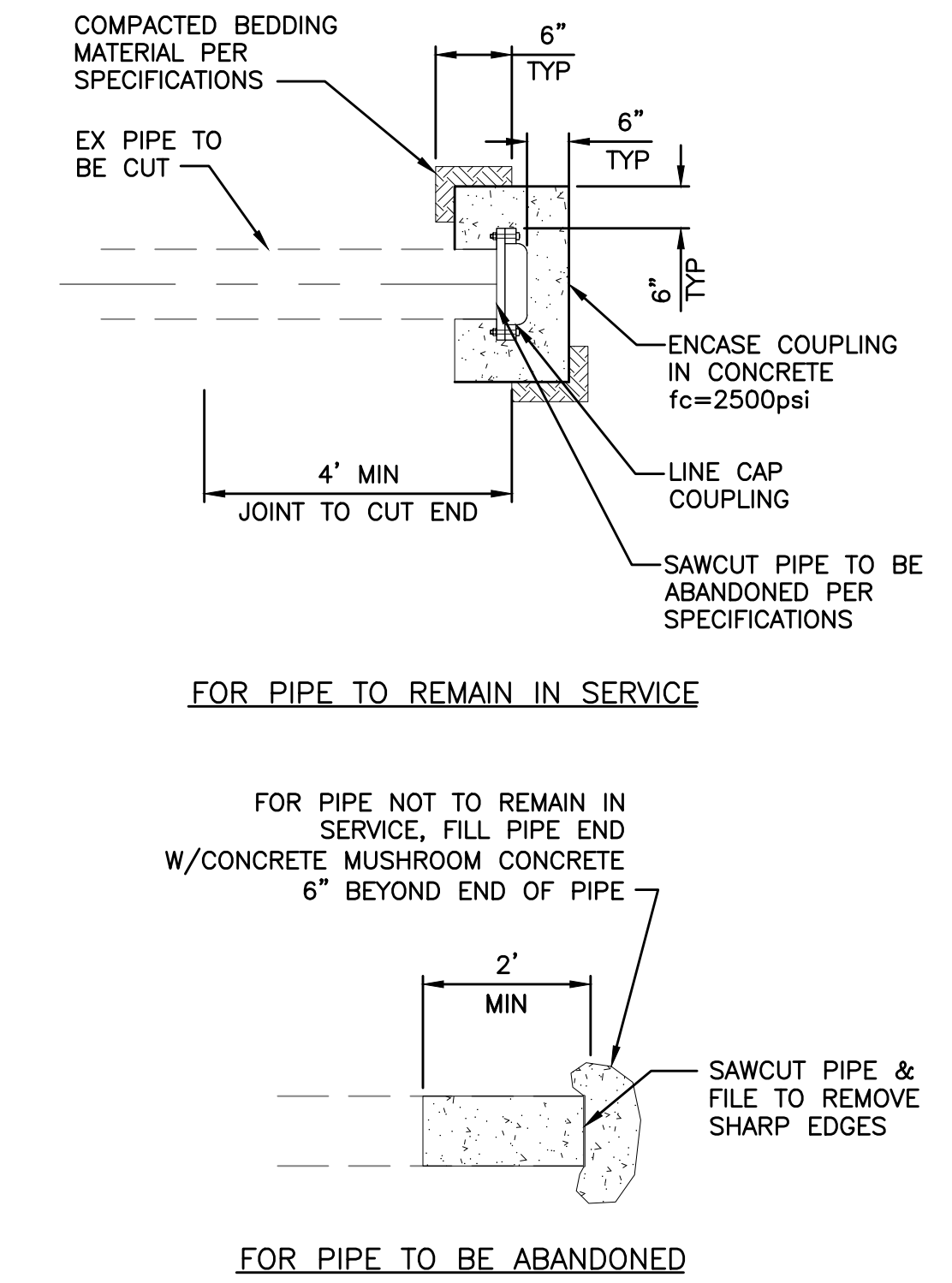
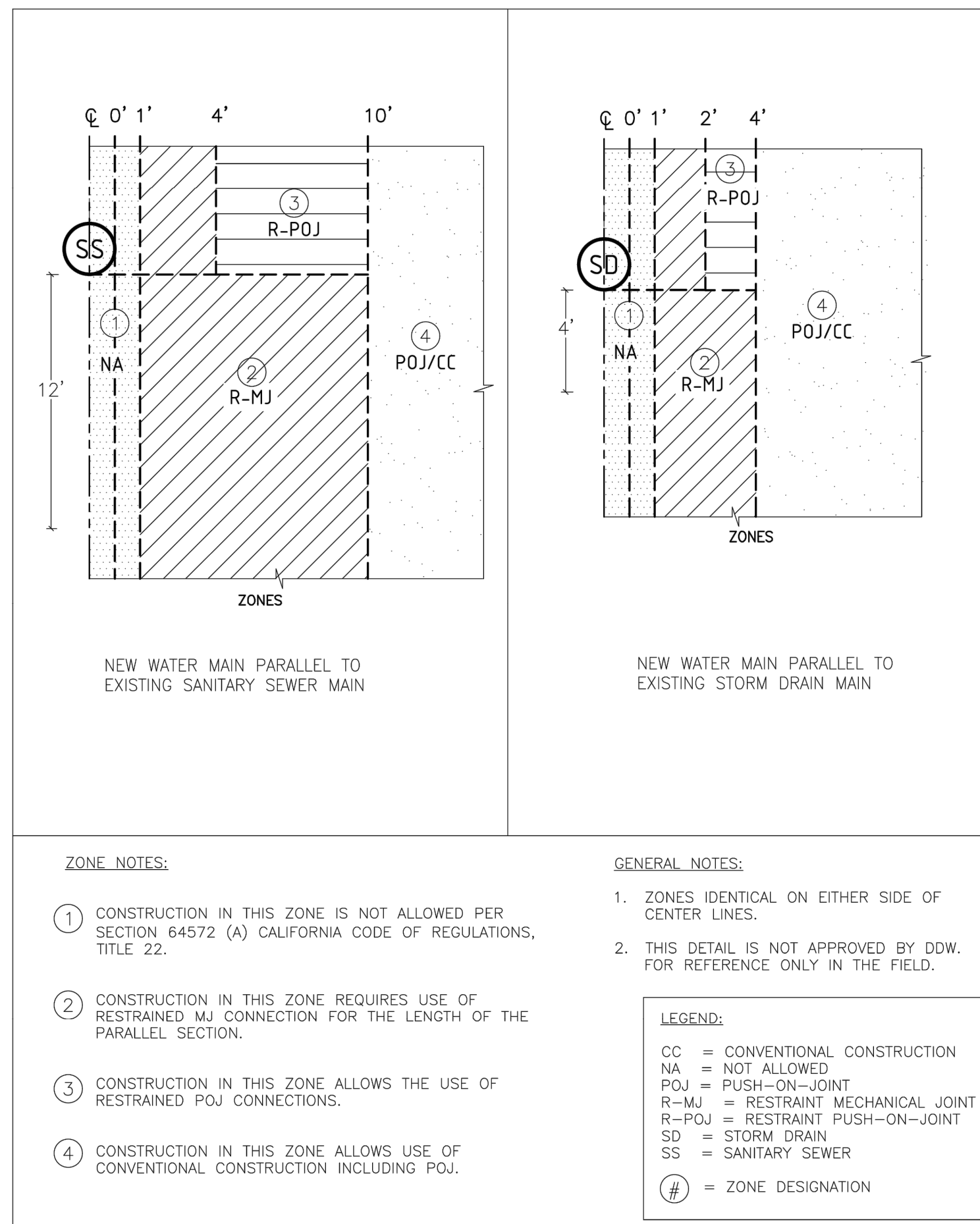
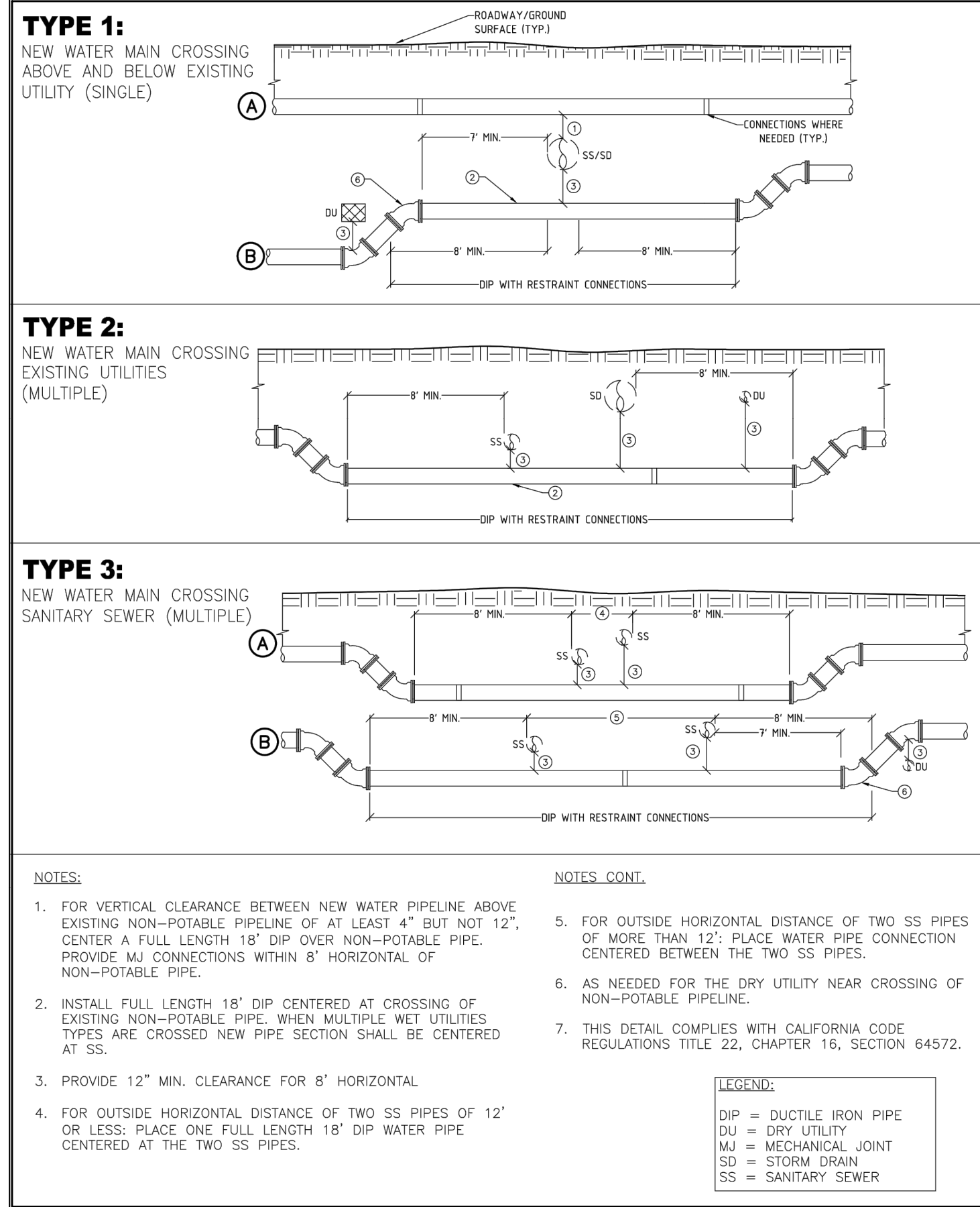
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HISTORIC OLIVEHURST STEEL MAIN REPLACEMENT PROJECT
WESTERN AVE. ALIGNMENT
STA. 15+00 TO STA. 21+25

DWG **C24**
SHEET **17**
OF 24

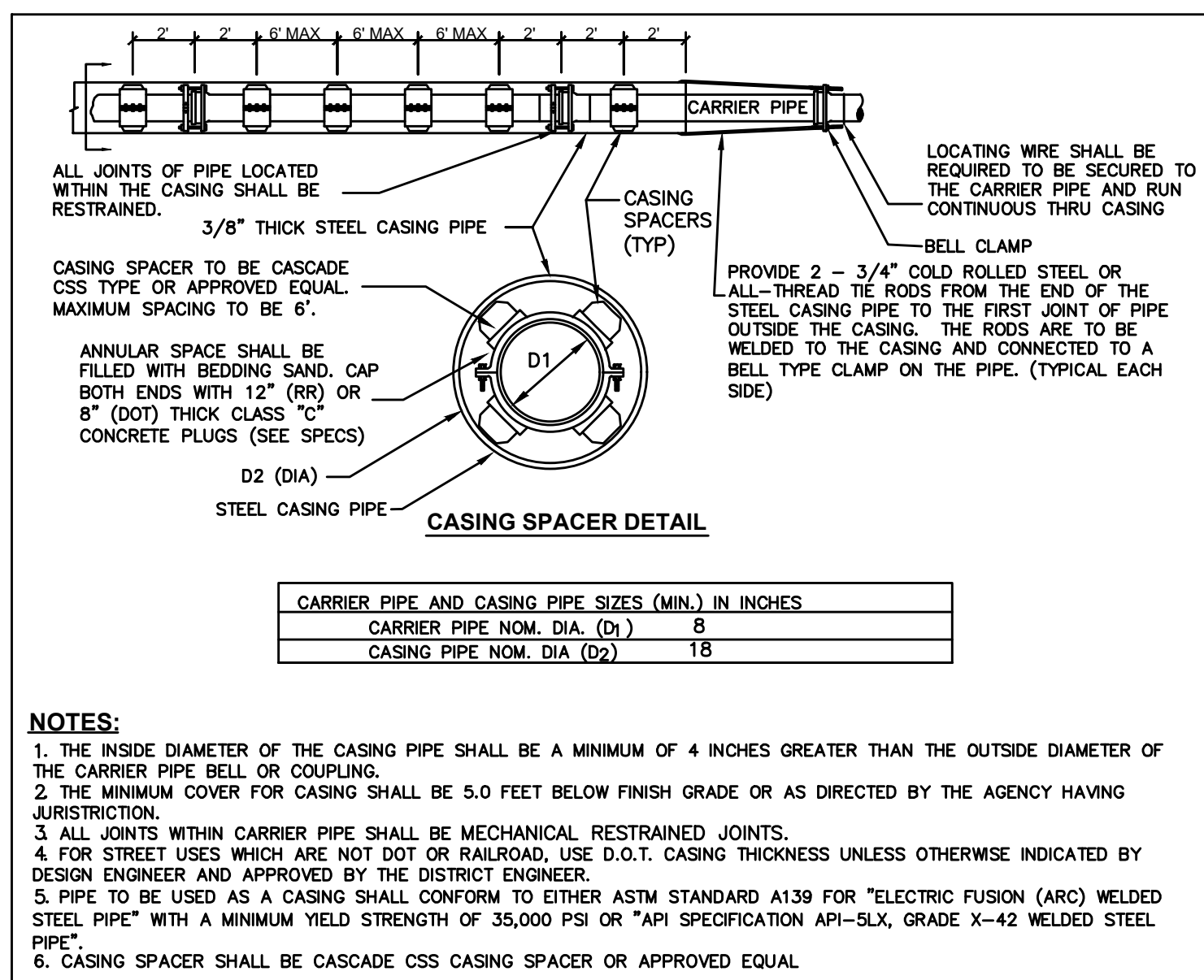


TYPICAL PIPE CAPPING DETAILS 3 TYP

NOTE:
DETAIL 2/TYP IS A GUIDELINE FOR PARALLEL DISTANCE SEPARATION, AND IS NOT AN APPROVED DETAIL FROM DDW. REFERENCE G3 FOR DDW REQUIREMENTS.

CROSSING UTILITIES DETAILS 1 TYP

EXISTING NON-POTABLE UTILITY NEW WATER MAIN PARALLELING 2 TYP



JACK AND BORE CASING DETAIL 4 TYP

20240616.104550 Z:\OPUD-002 HISTORIC WATER INFRASTRUCTURE\DWG - PHASE 1 - CHANGES\DWG\OPUD02-TS AND D.S.D.WG

1	7/3/24	MD	ADDENDUM 1
2	7/19/24	MD	ADDENDUM 2
REV	DATE	BY	DESCRIPTION

SCALE: NA

WARNING 1/2 1

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DRAWN_MATT DOMENICHELLI
CHECKED_JOE DOMENICHELLI

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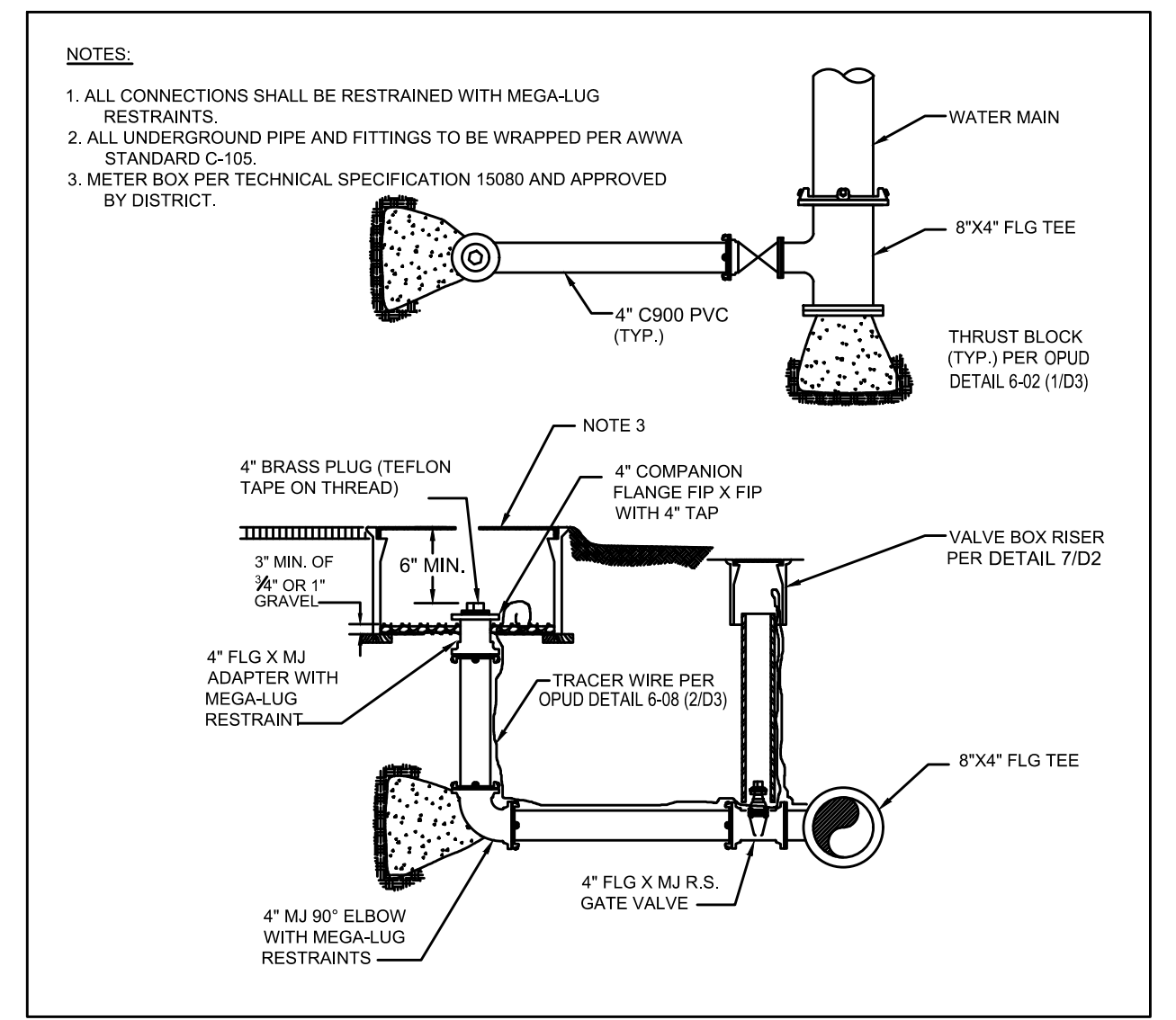
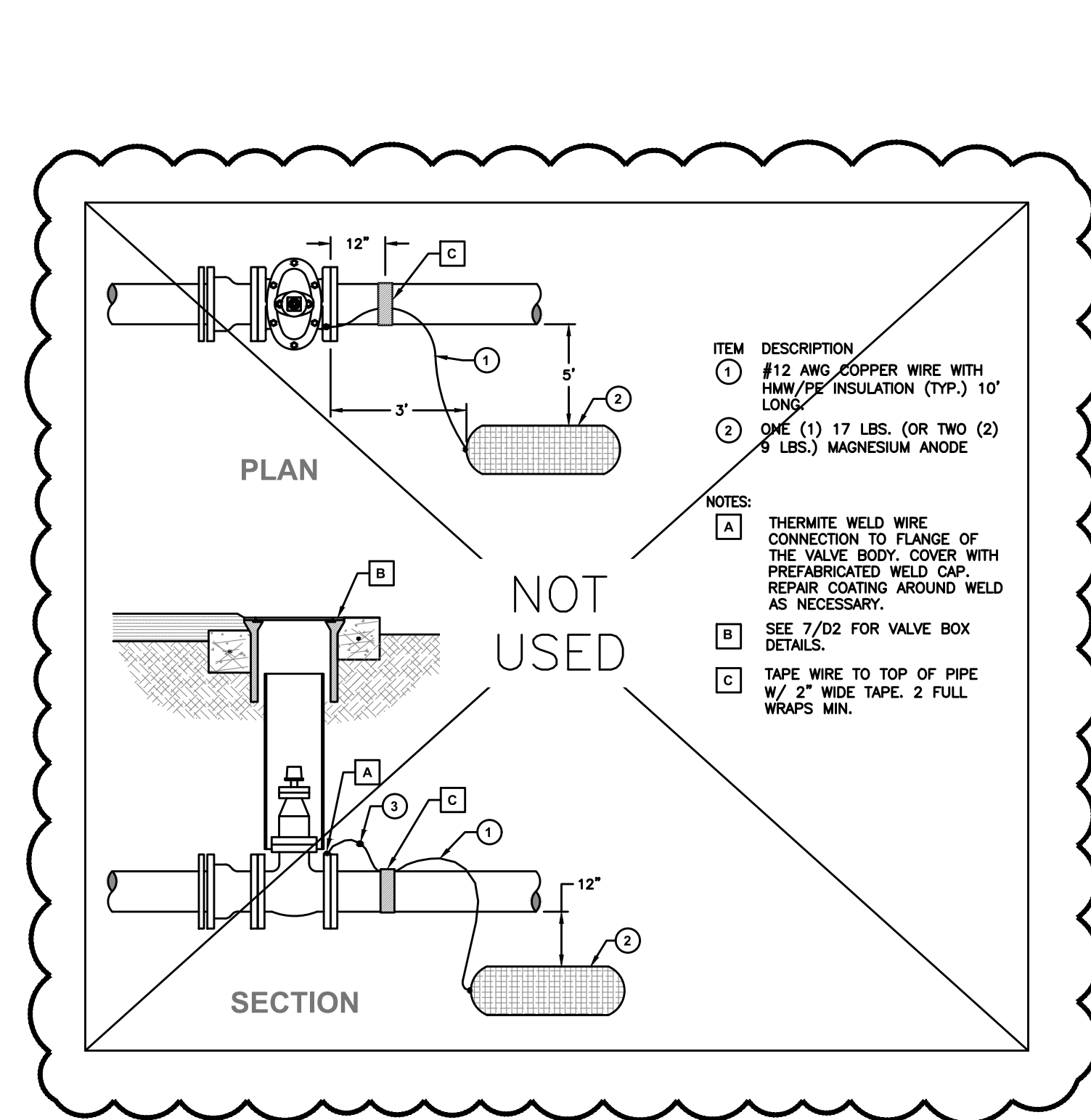
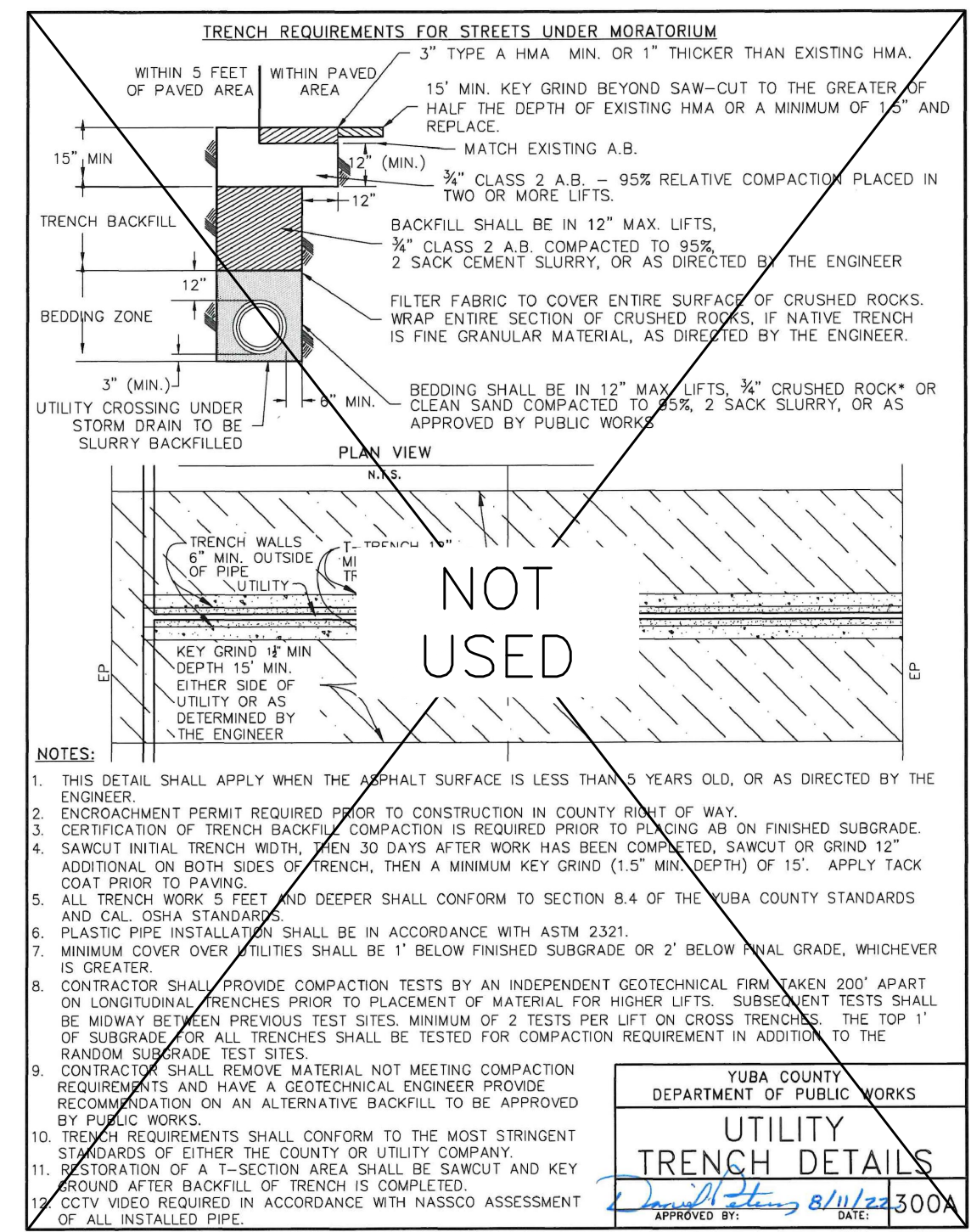
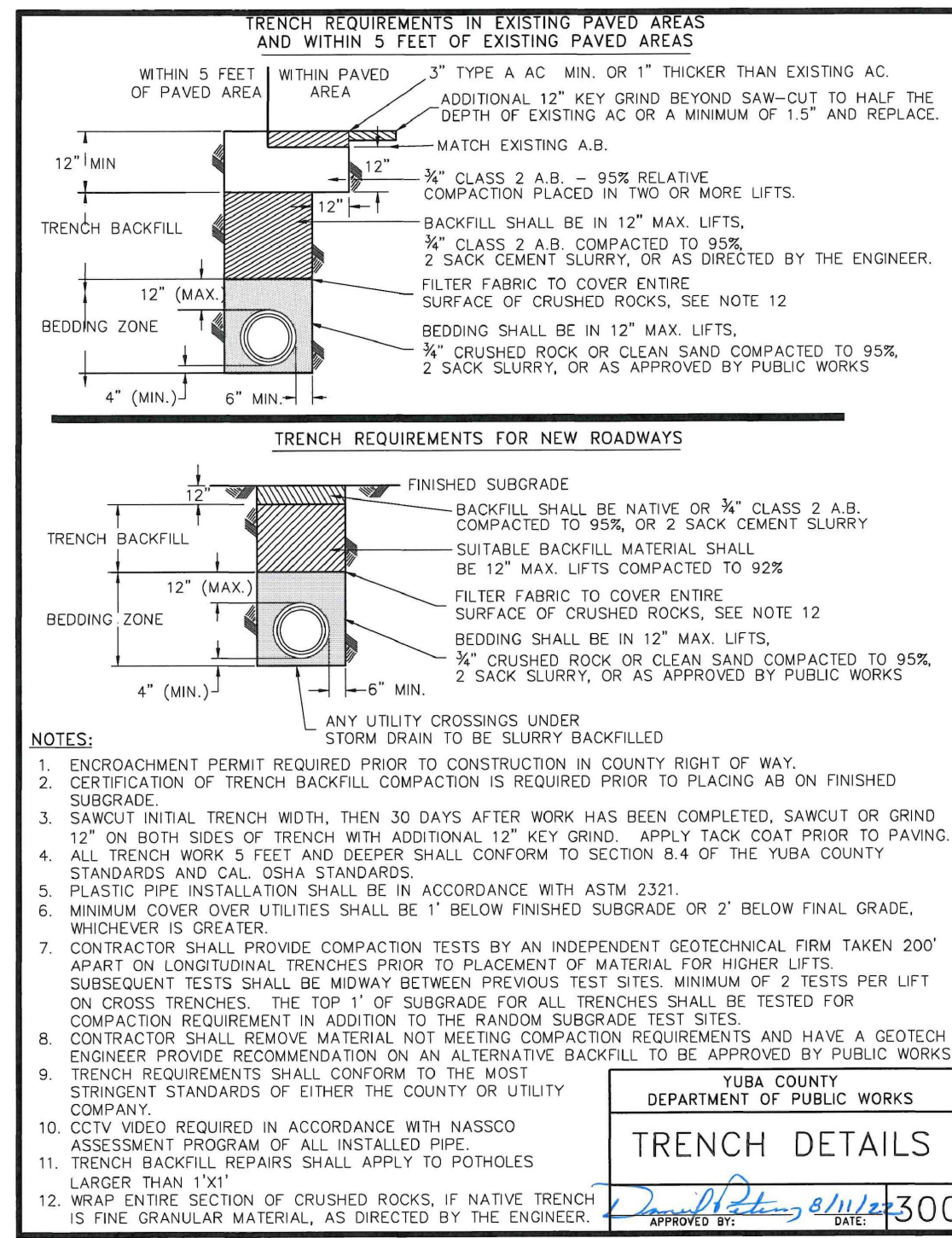
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HISTORIC OLIVEHURST STEEL MAIN REPLACEMENT PROJECT

STANDARD DETAILS 1

DWG D1 SHEET 19 OF 24

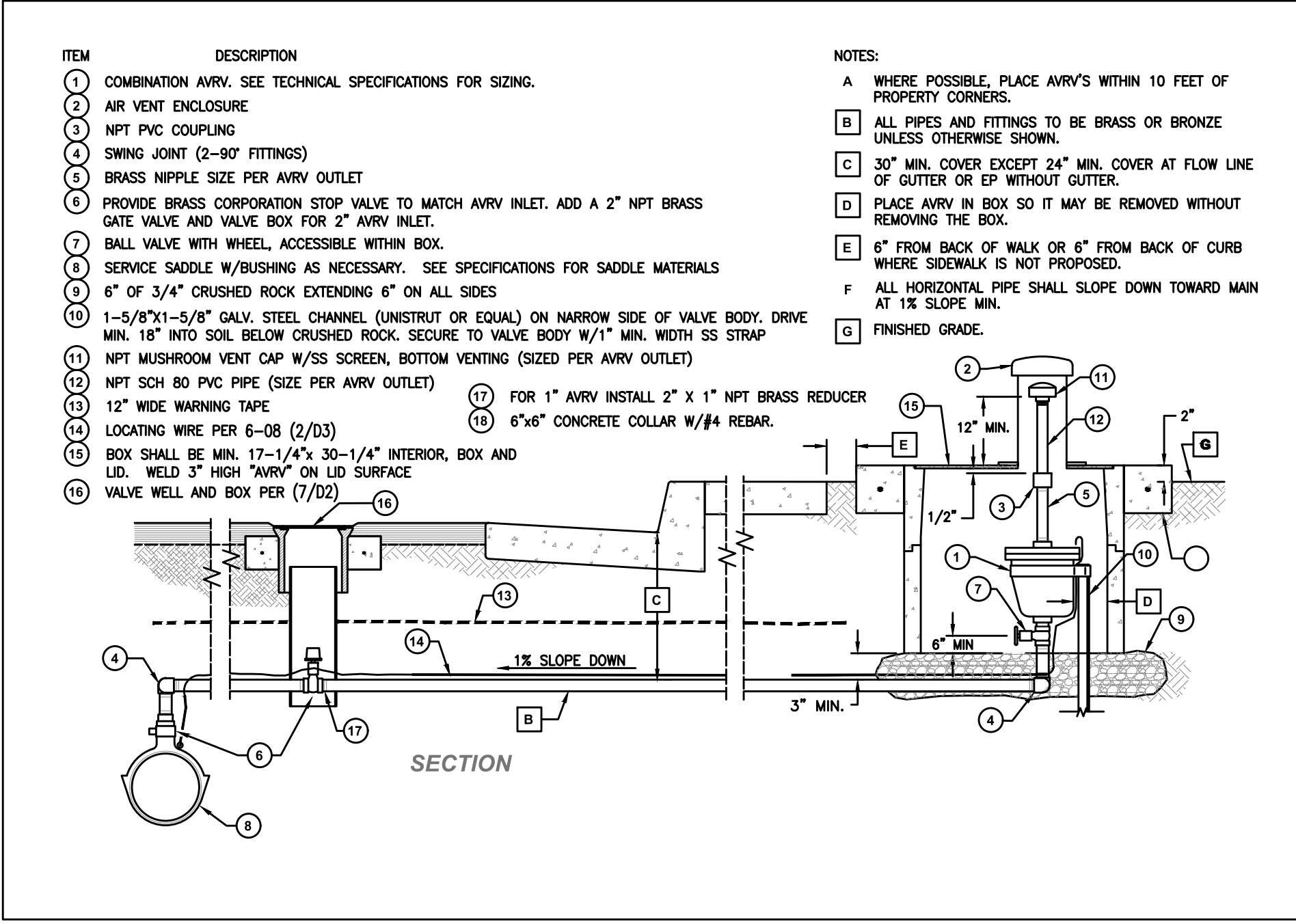


TRENCH DETAIL - STANDARD 1 TYP

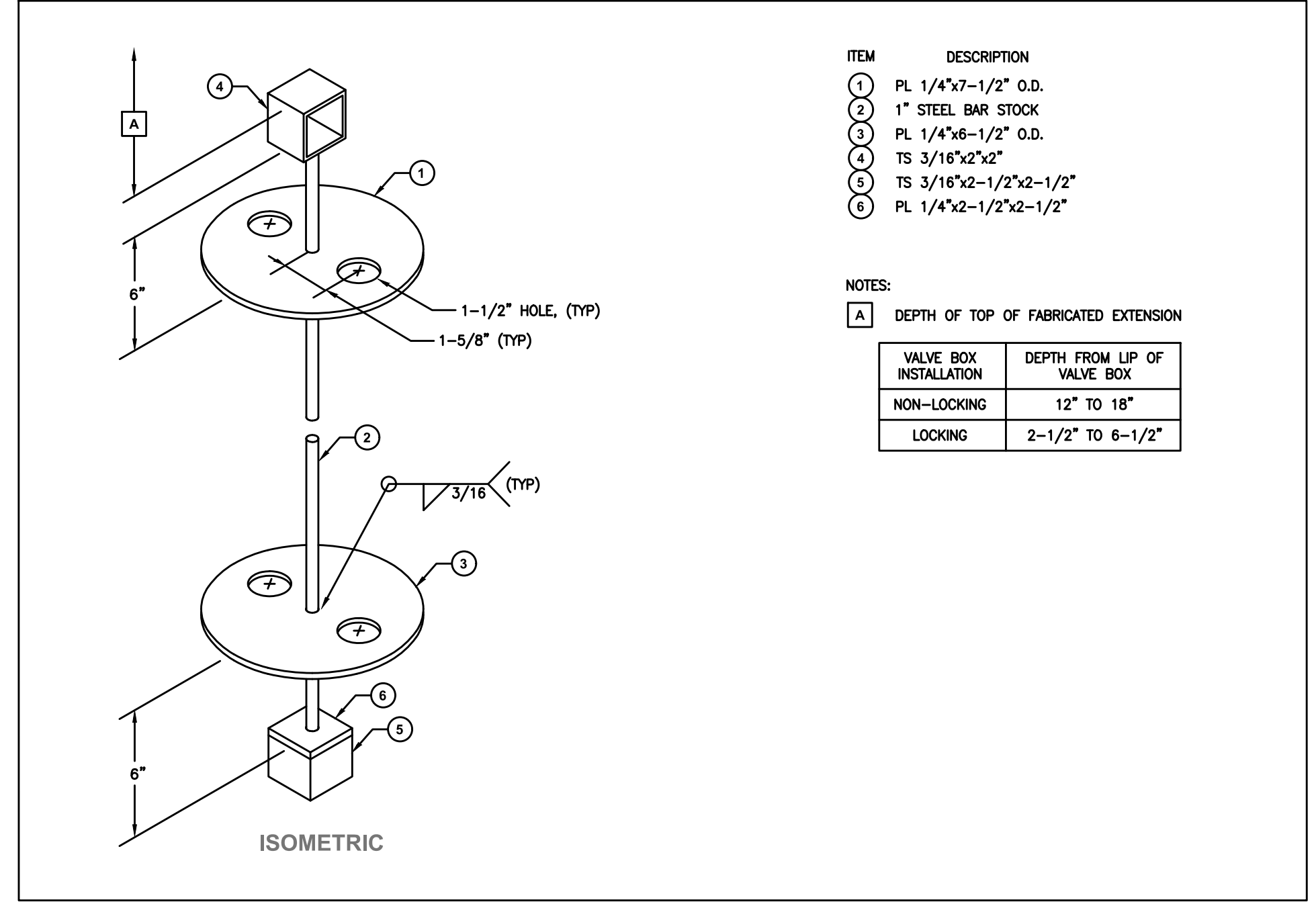
TRENCH DETAIL - MORATORIUM 2 TYP

ANODE DETAIL 3 TYP

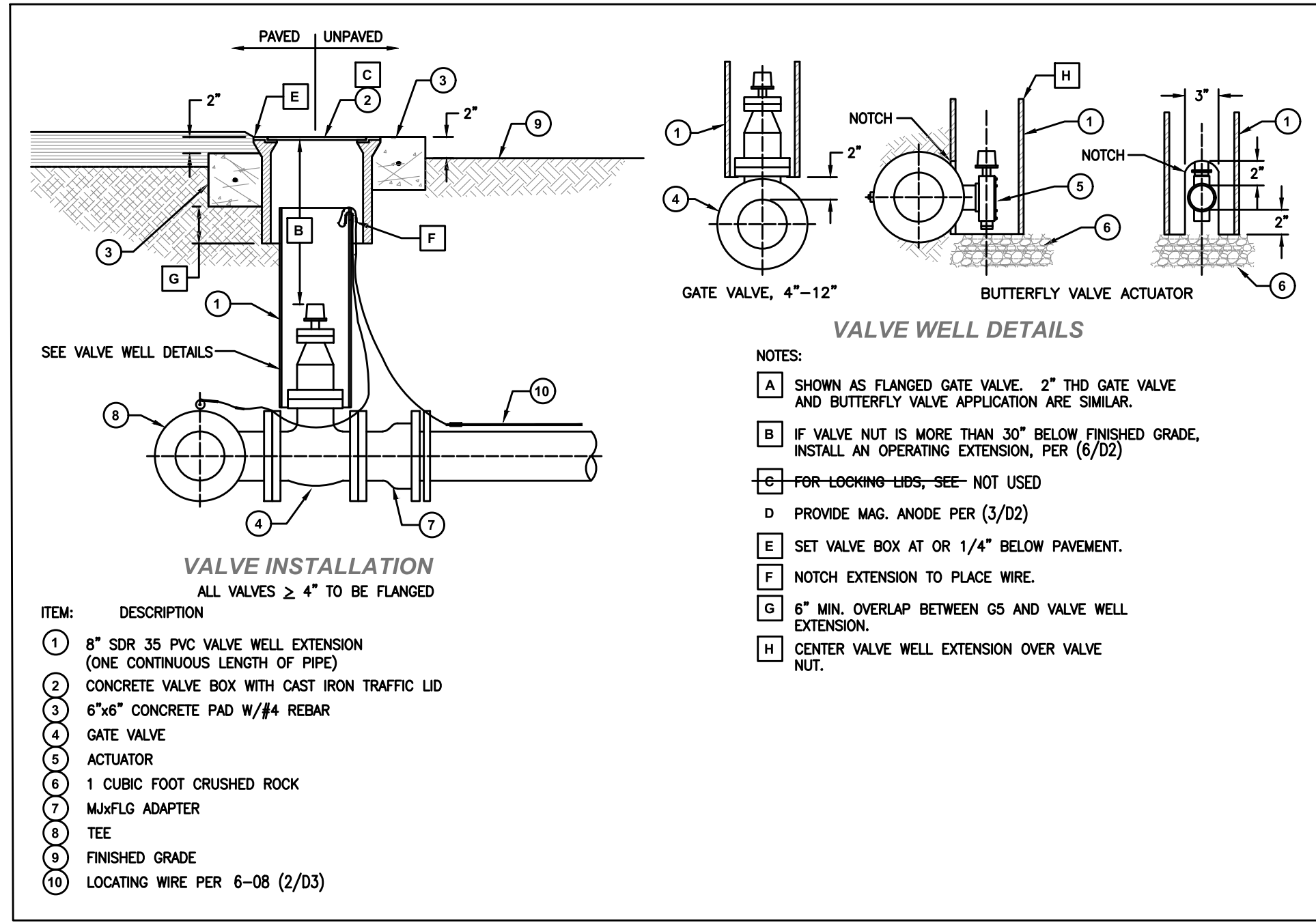
BLOW OFF DETAIL 4 TYP



AIR VACUUM RELEASE VALVE 5 TYP



VALVE OPERATING EXTENSION 6 TYP



VALVE INSTALLATION 7 TYP

20240708.110421 Z:\OPUD-002 HISTORIC WATER INFRASTRUCTURE\DWG - PHASE 1 - CHANGES\DWG\OPUD02-TS AND D.S.D.WG

1	7/3/24	MD	ADDENDUM 1
2	7/19/24	MD	ADDENDUM 2
REV	DATE	BY	DESCRIPTION

SCALE: NA

WARNING: 0 1/2 1

IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE.

DESIGNED: MATT DOMENICHELLI
DRAWN: MATT DOMENICHELLI
CHECKED: JOE DOMENICHELLI

DOMENICHELLI & ASSOCIATES

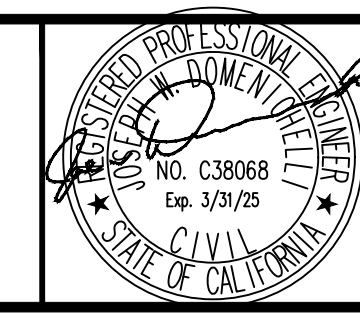
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HISTORIC OLIVEHURST STEEL MAIN REPLACEMENT PROJECT

STANDARD DETAILS 2

DWG D2
SHEET 20
OF 24

MINIMUM REQUIRED BEARING AREA IN TOTAL SQUARE FEET

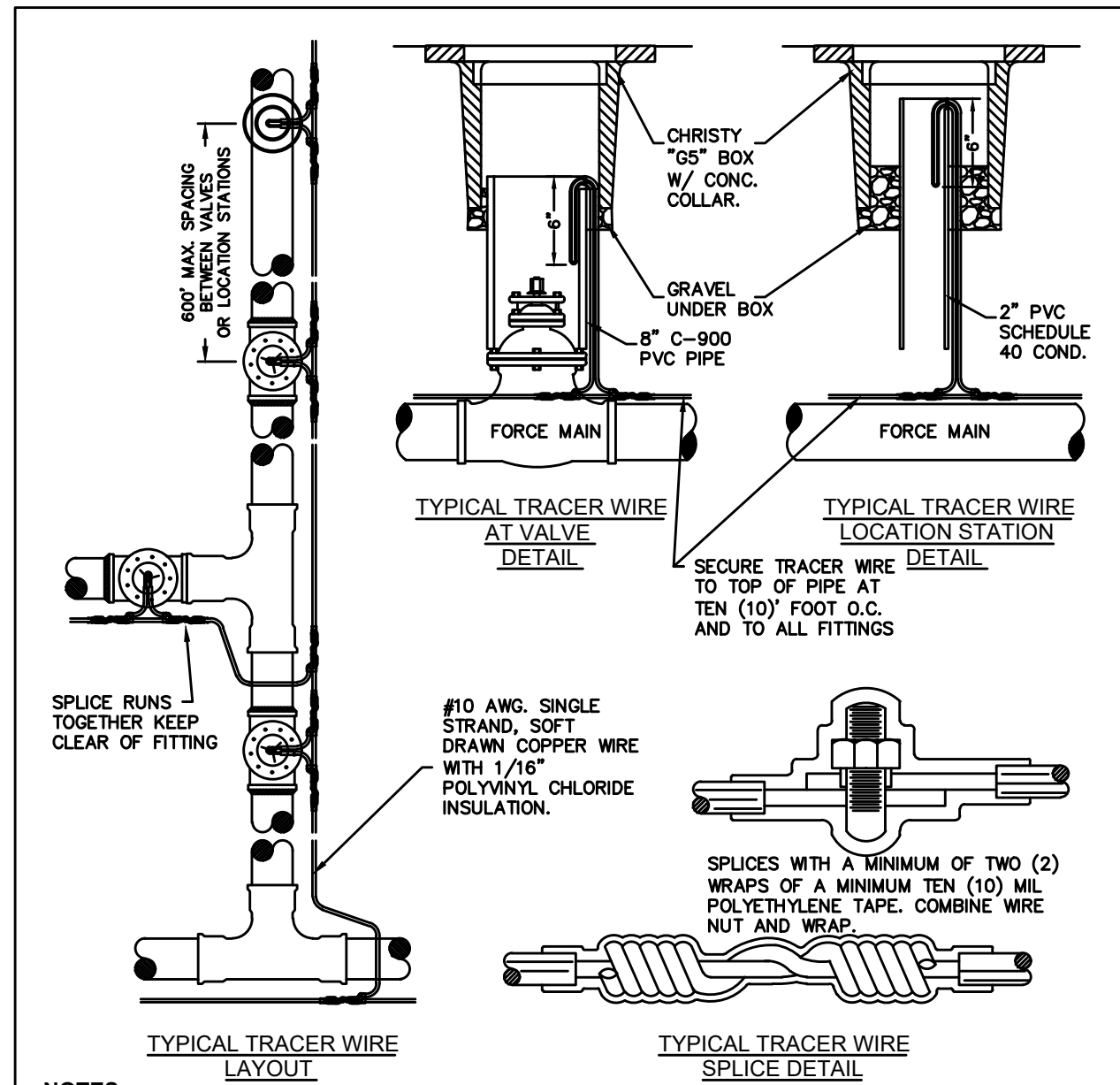
TYPE OF FITTING	90° BEND	45° BEND	22 1/4° BEND 11 1/4° BEND	BEND WITH HANGING RESTRAINT
TYPICAL INSTALLATION				
SIZE OF PIPE				
4"	2	1	1	1 CU. YD.
6"	4	2	1	1 CU. YD.
8"	7	4	2	1.5 CU. YD.
10"	11	6	3	2 CU. YD.
12"	15	8	5	2.5 CU. YD.
18"	32	17	8	3 CU. YD.
TYPICAL INSTALLATION				
SIZE OF PIPE				
4"	2	2 EA	2 EA	2
6"	4	4 EA	4 EA	4
8"	7	7 EA	7 EA	7
10"	11	11 EA	11 EA	11
12"	15	15 EA	15 EA	15
18"	32	32 EA	32 EA	32

- NOTES:**
- THRUST BLOCKS SHALL BE CONSTRUCTED OF CLASS "B" CONCRETE.
 - BEARING AREAS GIVEN ARE FOR CLASS 150 PIPE AT TEST PRESSURE OF 65 P.S.I. IN SOIL WITH 2,000 P.S.F. BEARING CAPACITY. INSTALLATIONS USING DIFFERENT PIPE, TEST PRESSURES, AND/OR SOIL TYPES SHOULD ADJUST AREAS ACCORDINGLY, SUBJECT TO APPROVAL OF DISTRICT ENGINEER.
 - THRUST BLOCKS SHALL BE POURED AGAINST FIRM UNDISTURBED SOIL.
 - PROVIDE A COATING ON ALL BOLTS AND A MINIMUM OF TWO WRAPS OF A 10 MIL POLYETHYLENE ENCASEMENT OF ALL PIPING AND FITTING TO PREVENT CONCRETE FROM DIRECT CONTACT.
 - ALL JOINTS AND BOLTS SHALL BE KEPT CLEAR OF CONCRETE.
 - THRUST BLOCKS SHALL BE PLACED 48 HOURS BEFORE TESTING.
 - ALL PLUGS SHALL BE SECURED WITH THRUST BLOCKS OR JOINT RESTRAINTS.

THRUST BLOCK DETAILS

NTS

1
TYP

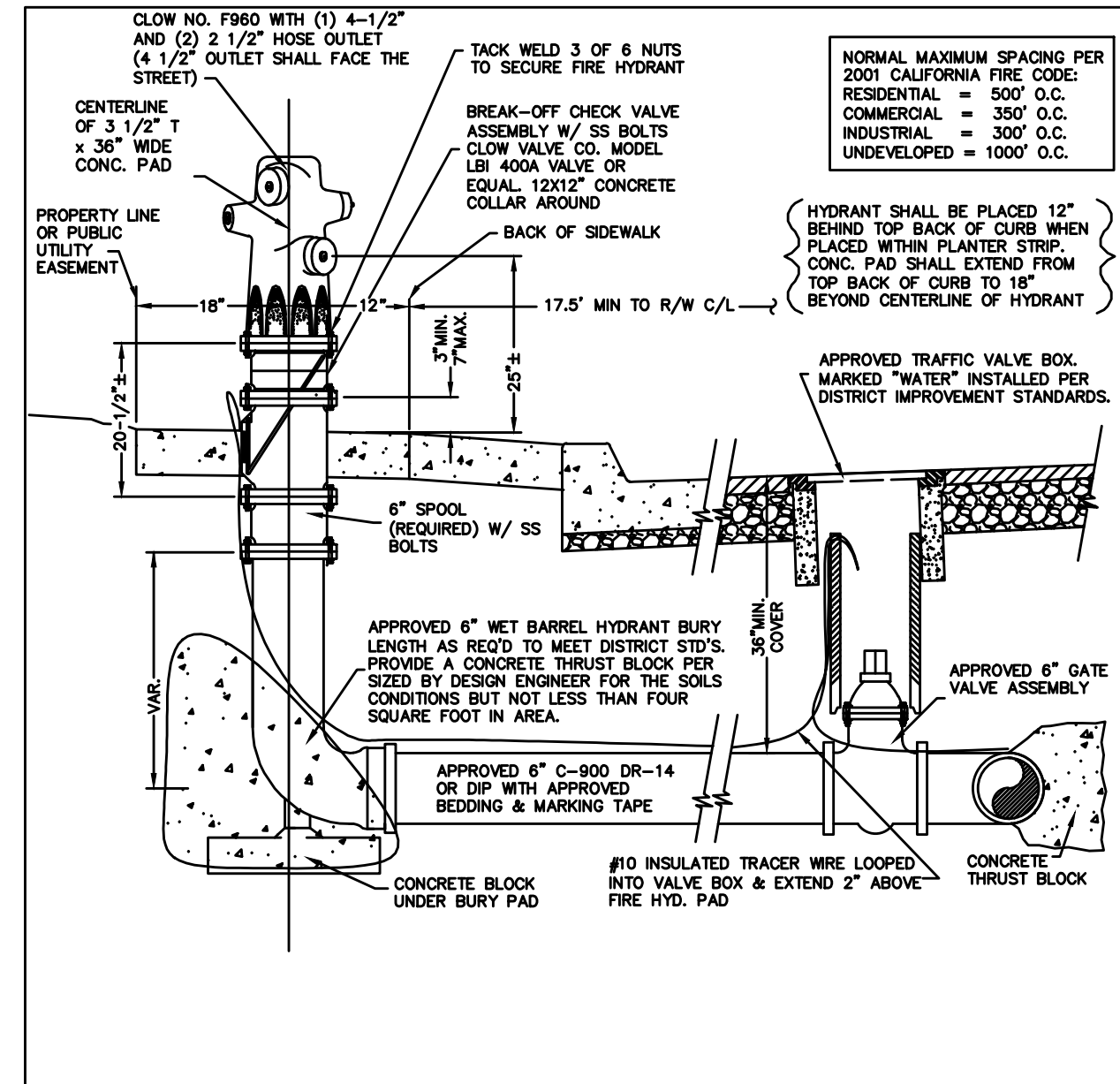


- NOTES:**
- ALL TRACER WIRE SHALL BE #10 AWG. SINGLE STRAND, SOFT DRAWN COPPER WIRE WITH 1/16" POLYVINYL CHLORIDE INSULATION (FOR DIRECT BURIAL USE ONLY).
 - ALL TRACER WIRE SHALL BE CONTINUOUS BETWEEN VALVE BOXES AND TRACER WIRE STATIONS.
 - TRACER / LOCATING WIRE SHALL BE LAID ON TOP OF THE LINE, AND SHALL BE SECURED BY TAPE (OR OTHER APPROVED METHOD) TO THE LINE (OR THE POLYETHYLENE ENCASEMENT IF DUCTILE IRON) AT TEN (10) FOOT MAXIMUM INTERVALS AND TAPPED AT ALL FITTINGS. TAPE SHALL BE TEN (10) MIL POLYETHYLENE.
 - ALL SPLICES SHALL BE TIGHT WRAPPED (A MINIMUM OF 12 TIMES TOTAL) AND SOLDERED OR CLAMPED WITH ONE (1) ELECTRICAL SPLIT BOLT CONNECTOR. COVER ALL SPLICES WITH A MINIMUM OF TWO (2) WRAPS OF A MINIMUM TEN (10) MIL POLYETHYLENE TAPE.
 - THE CONTRACTOR SHALL CONDUCT A CONTINUITY TEST ON ALL SPLICES AND BETWEEN THE WIRE RISER LOOPS.
 - A FINAL CONTINUITY TEST SHALL BE DONE IN THE PRESENCE OF THE DISTRICT.
 - BARE TRACER WIRE SHALL NOT TOUCH ANY VALVES OR FITTINGS.

TRACER WIRE DETAIL

NTS

2
TYP

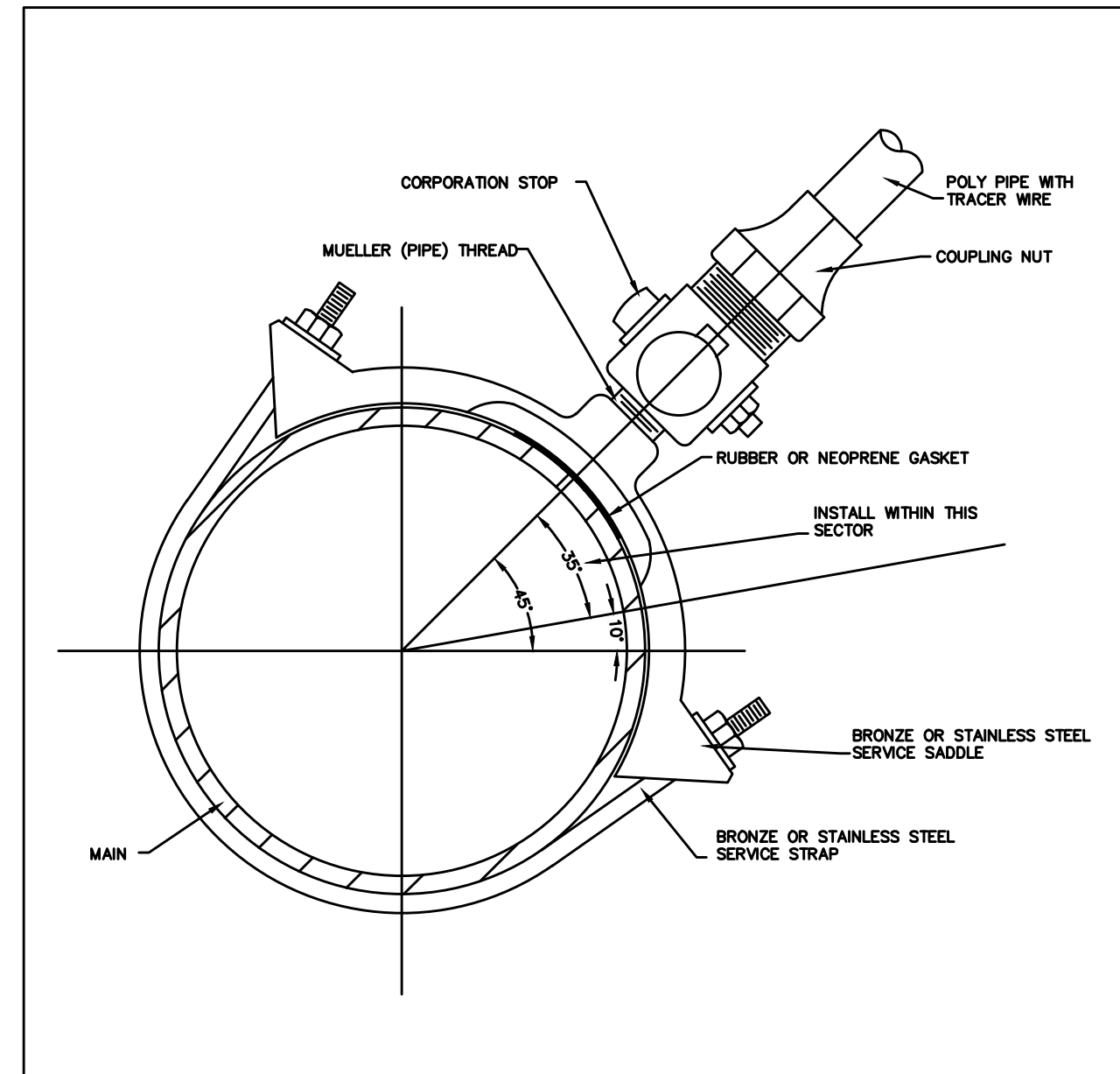


- NOTES:**
- REFLECTIVE PAVEMENT MARKERS SHALL BE PLACED PER STANDARD DETAIL 8-11, UNLESS INSTRUCTED OTHERWISE BY THE DISTRICT.
 - ALL BOLTS, PIPING AND FITTINGS TO BE DUCTILE IRON, CLASS 150 C-900, BRASS, BRONZE, OR STAINLESS STEEL.
 - THE FIRE HYDRANT SHALL BE PAINTED WITH ONE COAT OF A SOUND METAL PRIMER AND TWO COATS OF # 1147 "BRIGHT SAFETY YELLOW".
 - PROVIDE ANODE BAG FOR GATE VALVE PER 3/02.

FIRE HYDRANT DETAIL

NTS

3
TYP

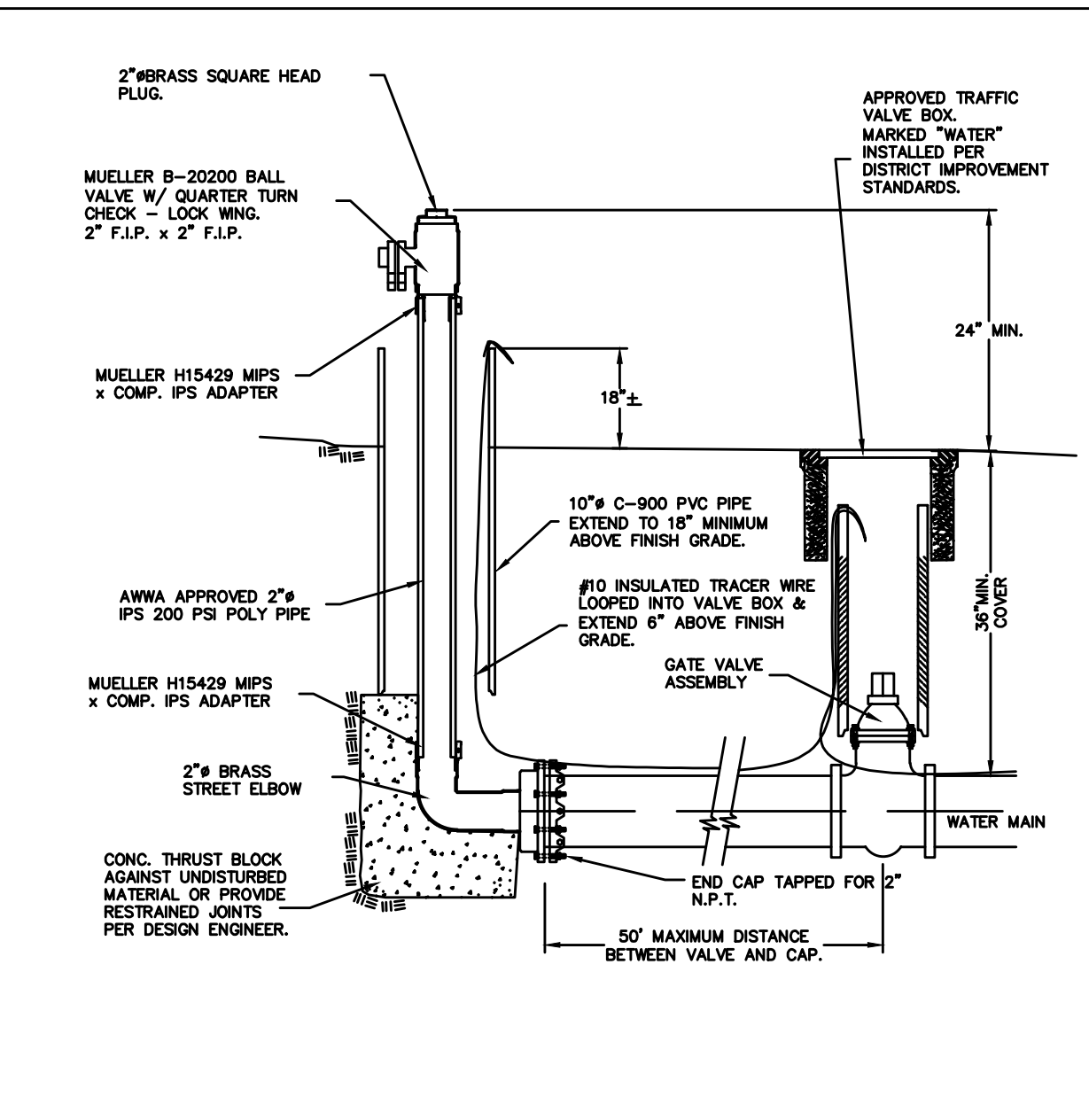


- NOTES:**
- ALL SERVICE MATERIALS AND FITTINGS SHALL BE A.W.W.A. STANDARD, POLY, BRASS, BRONZE OR STAINLESS STEEL. INSTALL MUELLER CO. CORPORATION STOPS.
 - SERVICE TAPS OF THE WATER MAINS SHALL BE DONE TO INSURE THAT CUTTINGS, FILINGS AND PLUGS DO NOT ENTER THE WATER MAINS.
 - 8 MIL POLYETHYLENE WRAP WITH 10 MIL TAPE REQUIRED FOR SADDLE AND CORP STOP.

SERVICE SADDLE DETAIL

NTS

4
TYP

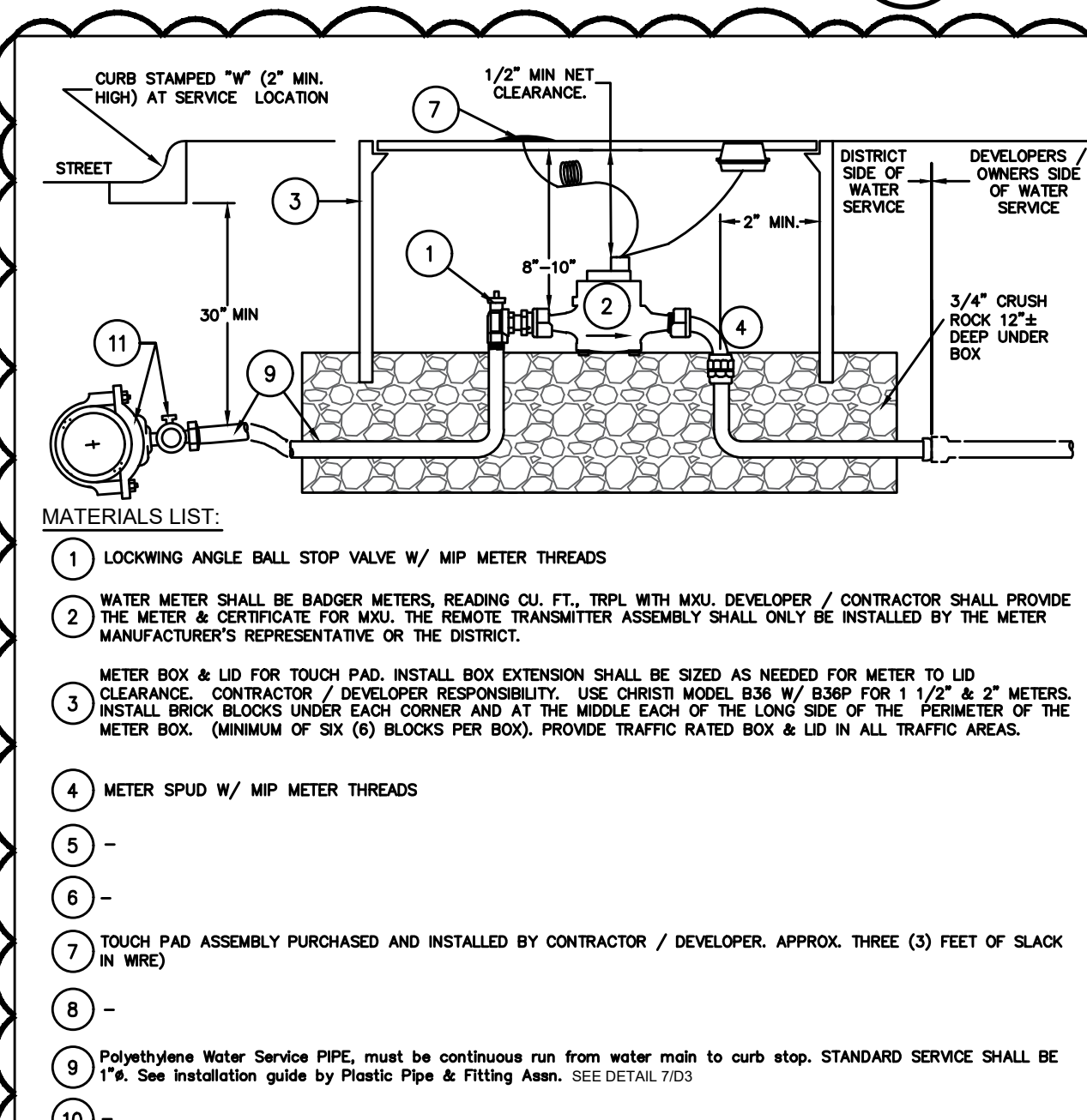


- NOTES:**
- PAINT BLOWOFF ASSEMBLY AND RISER PIPE WITH A BRIGHT SAFETY ORANGE COLOR AND PROVIDE 2" WIDE WHITE REFLECTIVE TAPE AROUND 4" FROM TOP OF RISER.
 - THRUST BLOCKS SHALL BE POURED AGAINST FIRM UNDISTURBED SOIL.
 - PROVIDE A COATING ON ALL BOLTS AND A MINIMUM OF TWO WRAPS OF A 8 MIL POLYETHYLENE ENCASEMENT OF ALL PIPING AND FITTING TO PREVENT CONCRETE FROM DIRECT CONTACT.
 - ALL JOINTS AND BOLTS SHALL BE KEPT CLEAR OF CONCRETE.
 - TEMPORARY BLOWOFFS MUST BE PUT IN BOX TO PREVENT TAMPERING.

TEMPORARY 2" BLOWOFF

NTS

5
TYP



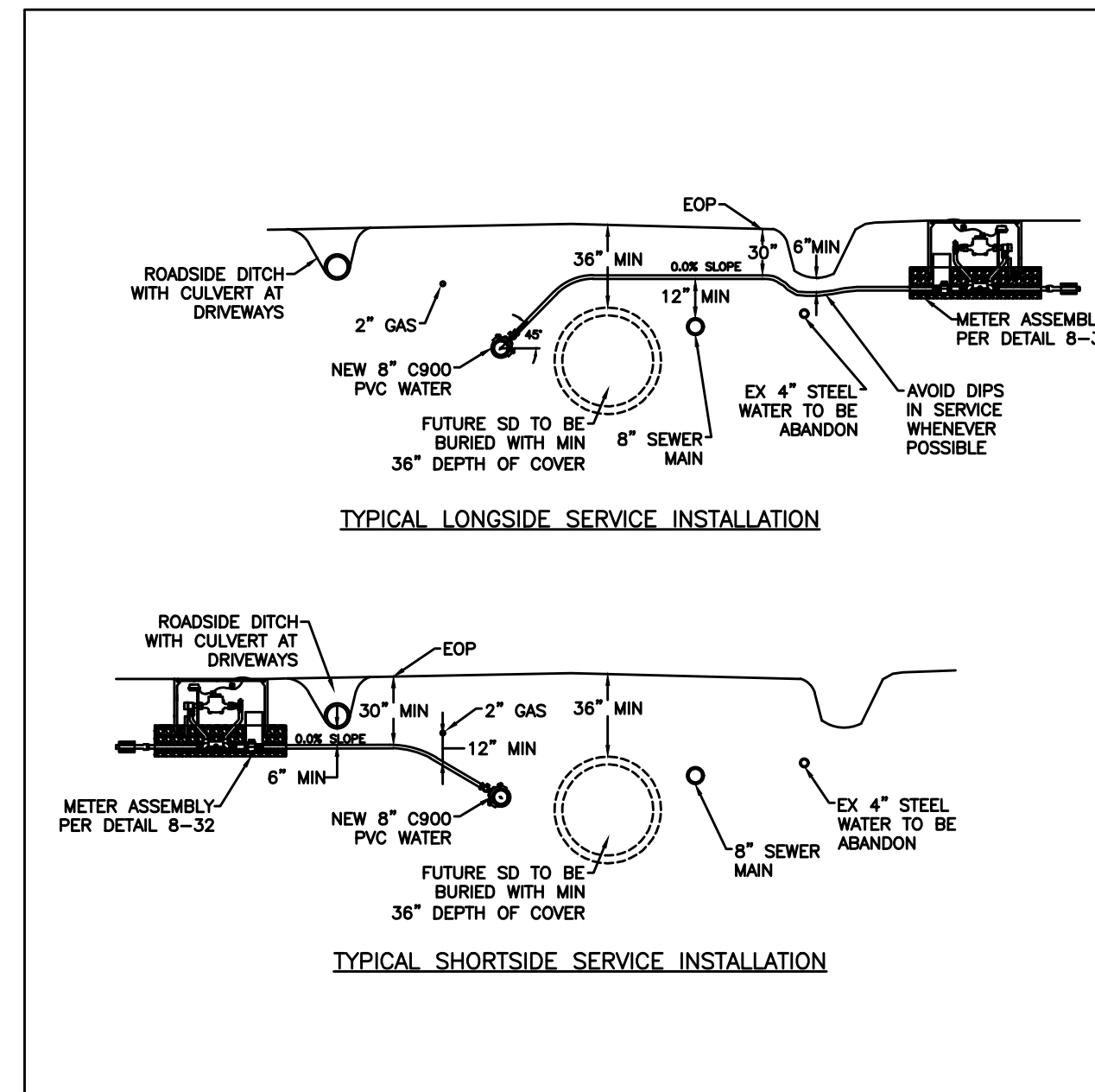
- MATERIALS LIST:**
- LOCKING ANGLE BALL STOP VALVE W/ MIP METER THREADS
 - WATER METER SHALL BE BADGER METERS, READING CU. FT. TRPL WITH MUX. DEVELOPER / CONTRACTOR SHALL PROVIDE THE METER & CERTIFICATE FOR MUX. THE REMOTE TRANSMITTER ASSEMBLY SHALL ONLY BE INSTALLED BY THE METER MANUFACTURER'S REPRESENTATIVE OR THE DISTRICT.
 - METER BOX & LID FOR TROUGH PAD. INSTALL BOX EXTENSION SHALL BE SIZED AS NEEDED FOR METER TO LID CLEARANCE. CONTRACTOR / DEVELOPER RESPONSIBILITY. USE CHRISTI MODEL B36 W/ B36P FOR 1 1/2" & 2" METERS. INSTALL BRICK BLOCKS UNDER EACH CORNER AND AT THE MIDDLE EACH OF THE LONG SIDE OF THE PERIMETER OF THE METER BOX. (MINIMUM OF SIX (6) BLOCKS PER BOX). PROVIDE TRAFFIC RATED BOX & LID IN ALL TRAFFIC AREAS.
 - METER SPUD W/ MIP METER THREADS
 -
 -
 - TOUGH PAD ASSEMBLY PURCHASED AND INSTALLED BY CONTRACTOR / DEVELOPER. APPROX. THREE (3) FEET OF SLACK IN WIRE
 -
 - Polyethylene Water Service PIPE, must be continuous run from water main to curb stop. STANDARD SERVICE SHALL BE 1". See installation guide by Plastic Pipe & Fitting Assn. SEE DETAIL 7/03
 -
 -
 - MUELLER-BRONZE SERVICE SADDLES - H13000 SERIES, BR28 SERIES, WITH MUELLER BRONZE CORPORATION BALL VALVE.

- NOTES:**
- ALL BOLTS, PIPING AND FITTINGS TO BE BRASS, BRONZE, POLY, OR STAINLESS STEEL.

1" WATER SERVICE

NTS

6
TYP

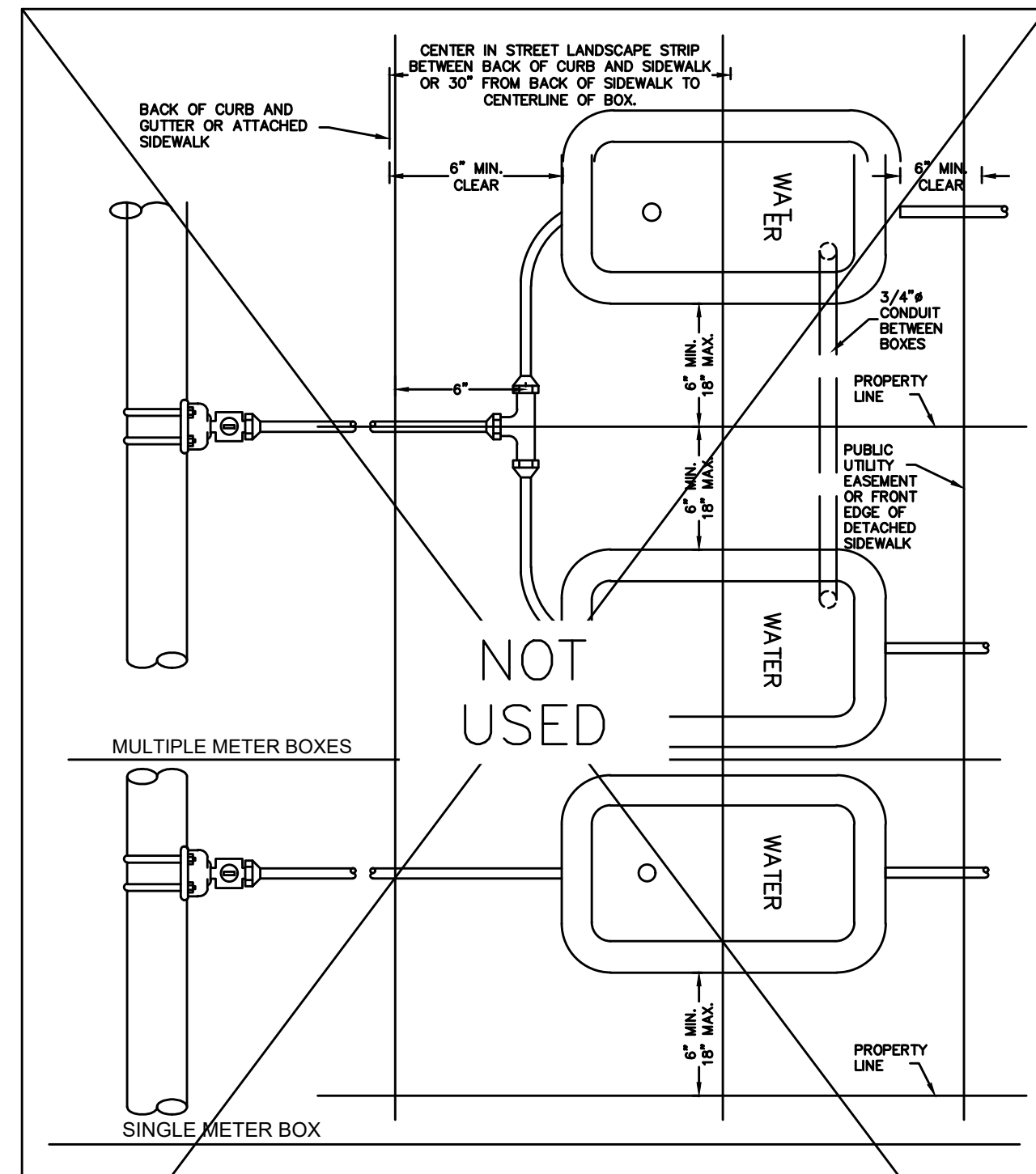


- NOTES:**
- SERVICE TO BE POLYETHYLENE PIPE PER SPEC SECTION 15080 - 2.028.
 - INSTALL CONTINUOUS RUN FROM MAIN TO CURB STOP.
 - INSTALL SADDLE AT 45 DEGREES FOR LONGSIDE INSTALLATION TO ACHIEVE MINIMUM DEPTH OF BURY.
 - LONGSIDE INSTALLATION BURY DEPTH 30 INCHES AT EOP AND MAINTAIN ZERO SLOPE BACK TO BEND RADII.
 - SHORTSIDE INSTALLATION SHALL MAINTAIN POSITIVE SLOPE TO METER BOX.
 - AVOID HIGH POINTS IN SERVICE WHEN POSSIBLE. MINIMUM DEPTH UNDER ROADSIDE DITCH 6".
 - MAINTAIN 12" SEPARATION FROM EXISTING UTILITIES.

TYPICAL SERVICE INSTALLATION

NTS

7
TYP



- NOTES:**
- FOR IMPROVEMENT STANDARD DETAILS FOR METER BOXES FOR ADDITIONAL REQUIREMENTS AND MATERIALS.
 - BOXES REQUIRE MINIMUM OF 5' SEPARATION (CENTER TO CENTER) FROM HYDRANTS, STREETLIGHTS, TRANSFORMERS, ETC.

SINGLE SERVICE DUAL METER

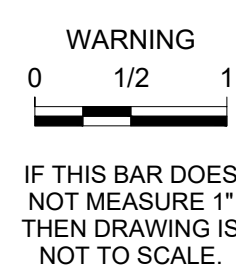
NTS

8
TYP

20240712.144411 Z:\OPUD-002 HISTORIC WATER INFRASTRUCTURE\DWG - PHASE 1 - CHANGES\DWG\OPUD02-TS AND D.S.D.WG

1	7/3/24	MD	ADDENDUM 1
2	7/19/24	MD	ADDENDUM 2
REV	DATE	BY	DESCRIPTION

SCALE:
NA



DESIGNED MATT DOMENICHELLI
DRAWN MATT DOMENICHELLI
CHECKED JOE DOMENICHELLI

DOMENICHELLI & ASSOCIATES

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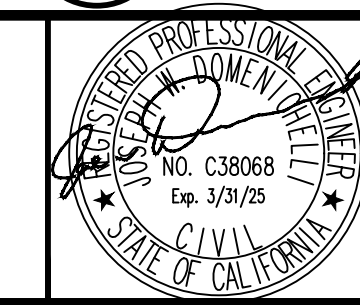
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HISTORIC OLIVEHURST STEEL MAIN REPLACEMENT PROJECT

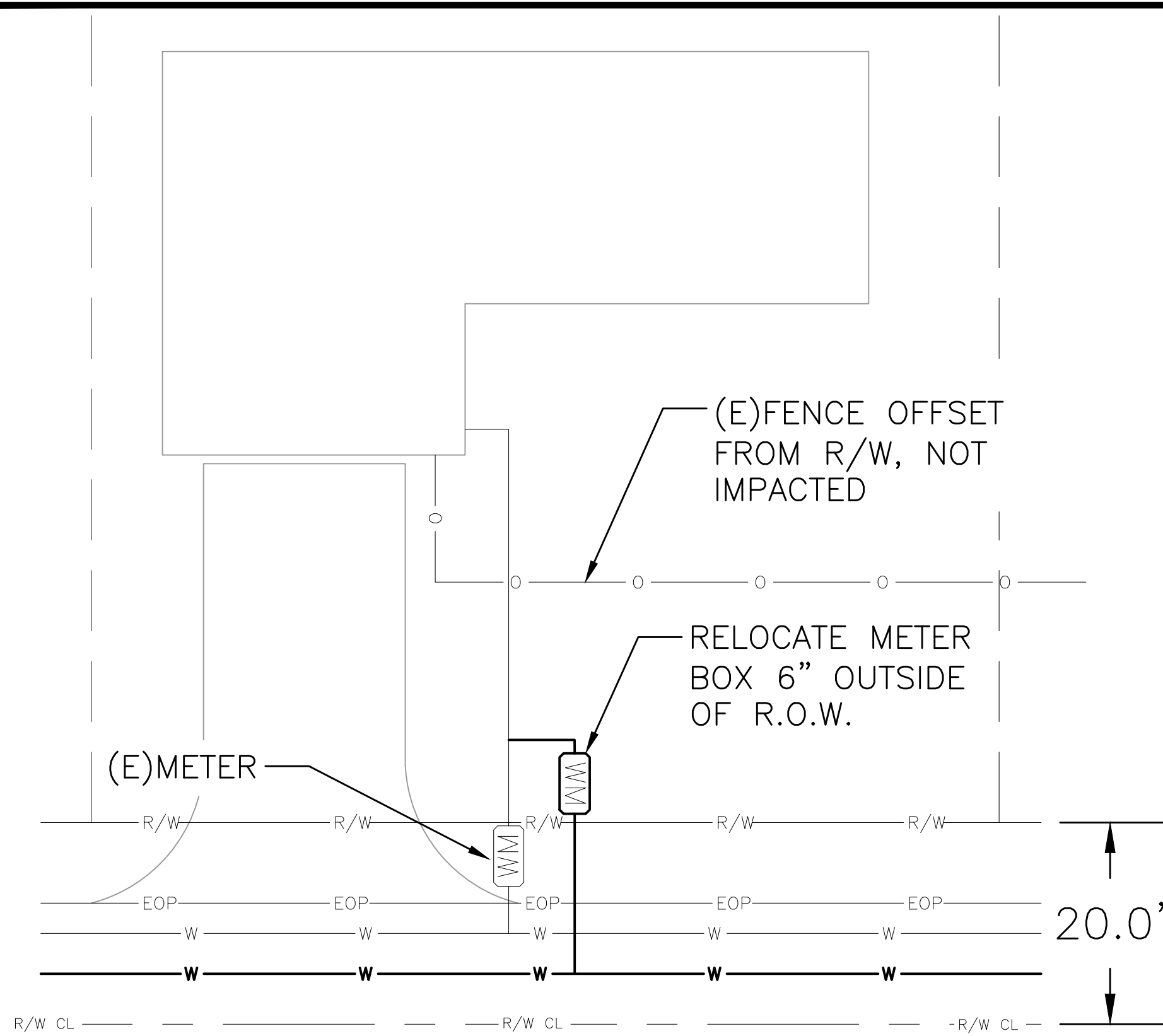
STANDARD DETAILS 3

2

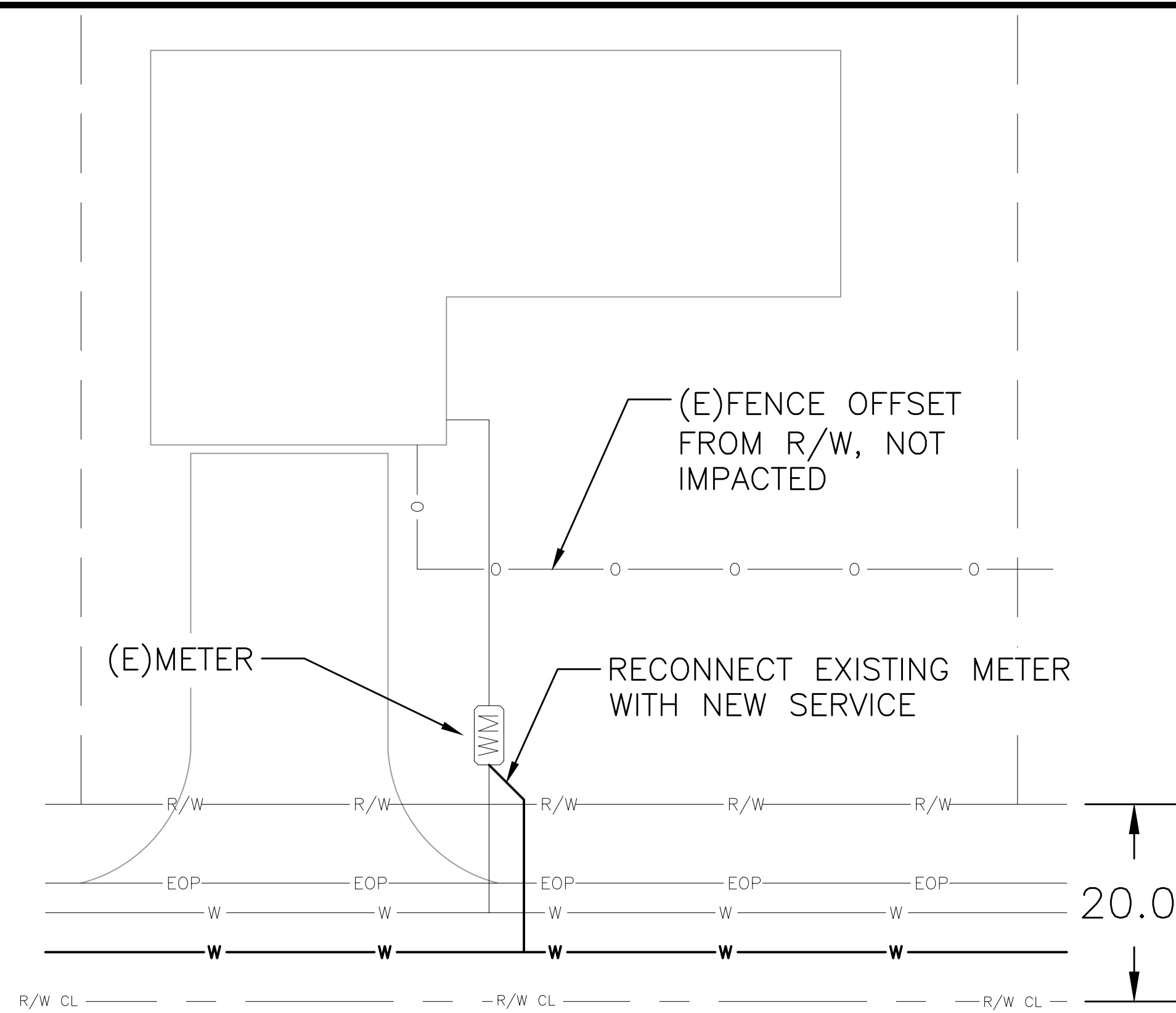
DWG
D3
SHEET
21
OF 24

GENERAL NOTES

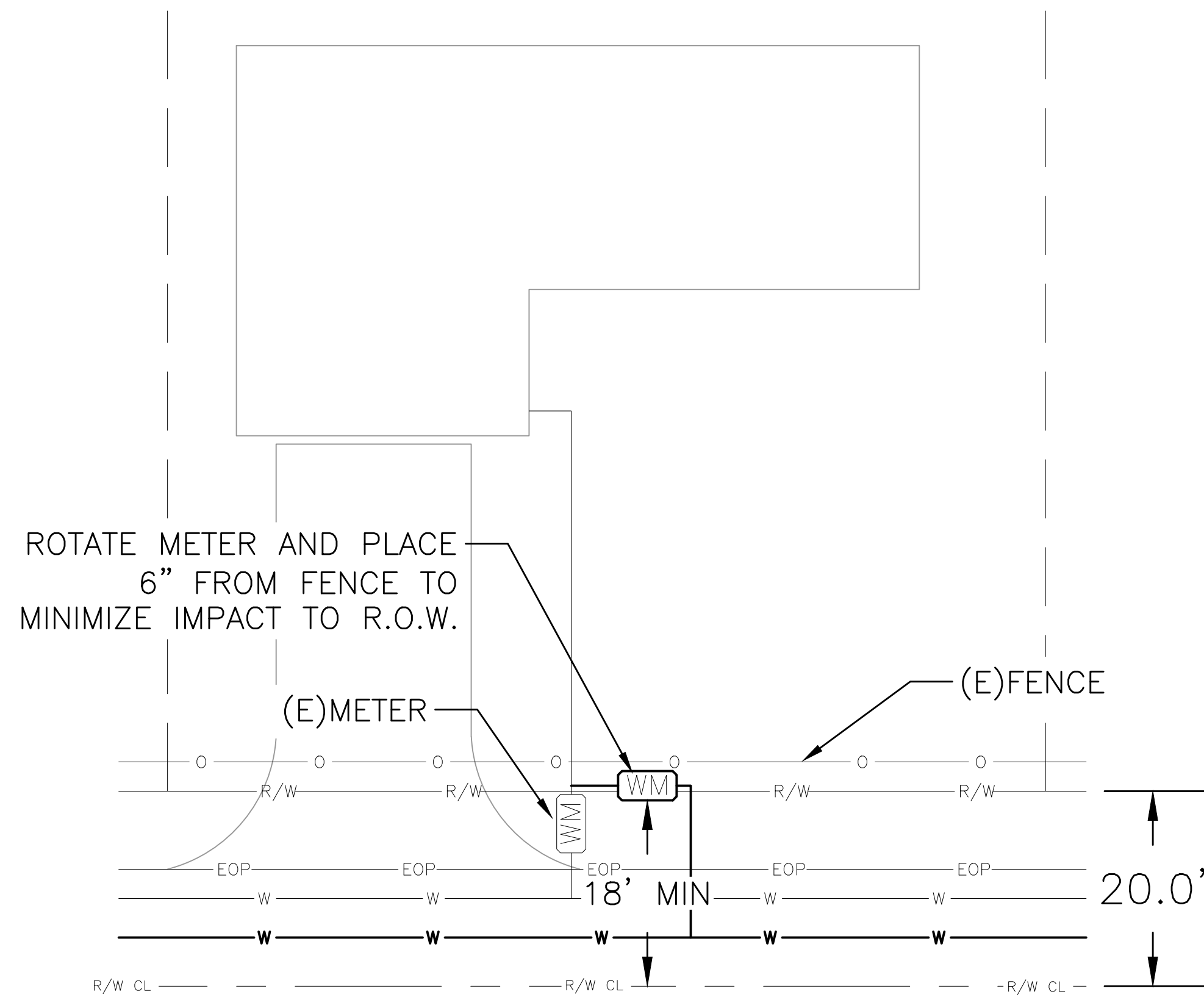
1. WHEN THE EXISTING METER IS LOCATED INSIDE THE R.O.W. RELOCATE THE METER BOX 6" OUTSIDE THE R.O.W. (DETAIL 1).
2. WHEN THE EXISTING METER IS LOCATED OUTSIDE OF THE R.O.W. RECONNECT WITH NEW SERVICE (DETAILS 2 & 4).
3. WHEN THE EXISTING METER IS LOCATED INSIDE THE R.O.W. AND A FENCE IS PRESENT AT OR BEYOND THE R.O.W. AVOID MOVING THE METER BEHIND THE FENCE. ROTATE THE METER BOX AND PLACE METER BOX 6" FROM THE FENCE TO MINIMIZE ENCROACHMENT INTO THE R.O.W. (DETAIL 3).
4. WHEN THE EXISTING METER IS LOCATED INSIDE THE R.O.W. AND A FENCE IS ALSO INSIDE THE R.O.W. OBSTRUCTING THE RELOCATION, EXISTING BOX TO REMAIN, RECONNECT WITH NEW SERVICE (DETAIL 5).
5. ALL RELOCATED METER BOXES MUST BE MINIMUM 18' FROM R.O.W. CENTERLINE.
6. ROAD CENTERLINE DOES NOT ALIGN WITH R.O.W. CENTERLINE. R.O.W. CENTERLINE AND R.O.W. LINES TO BE CLEARLY MARKED BY CONTRACTOR FOR THE PURPOSE OF METER LOCATION INSPECTION.



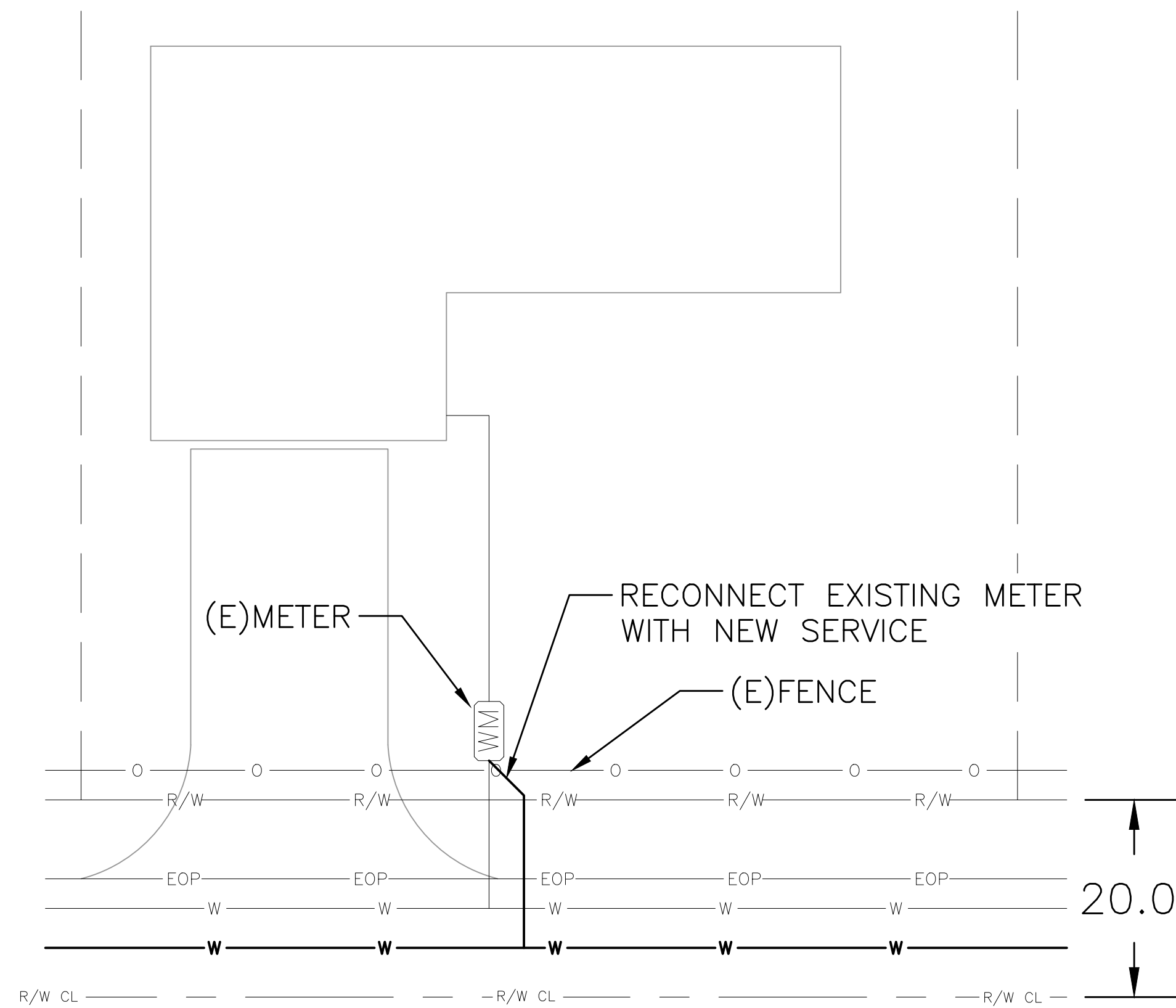
RELOCATE METER OUTSIDE ROW 1
NTS TYP



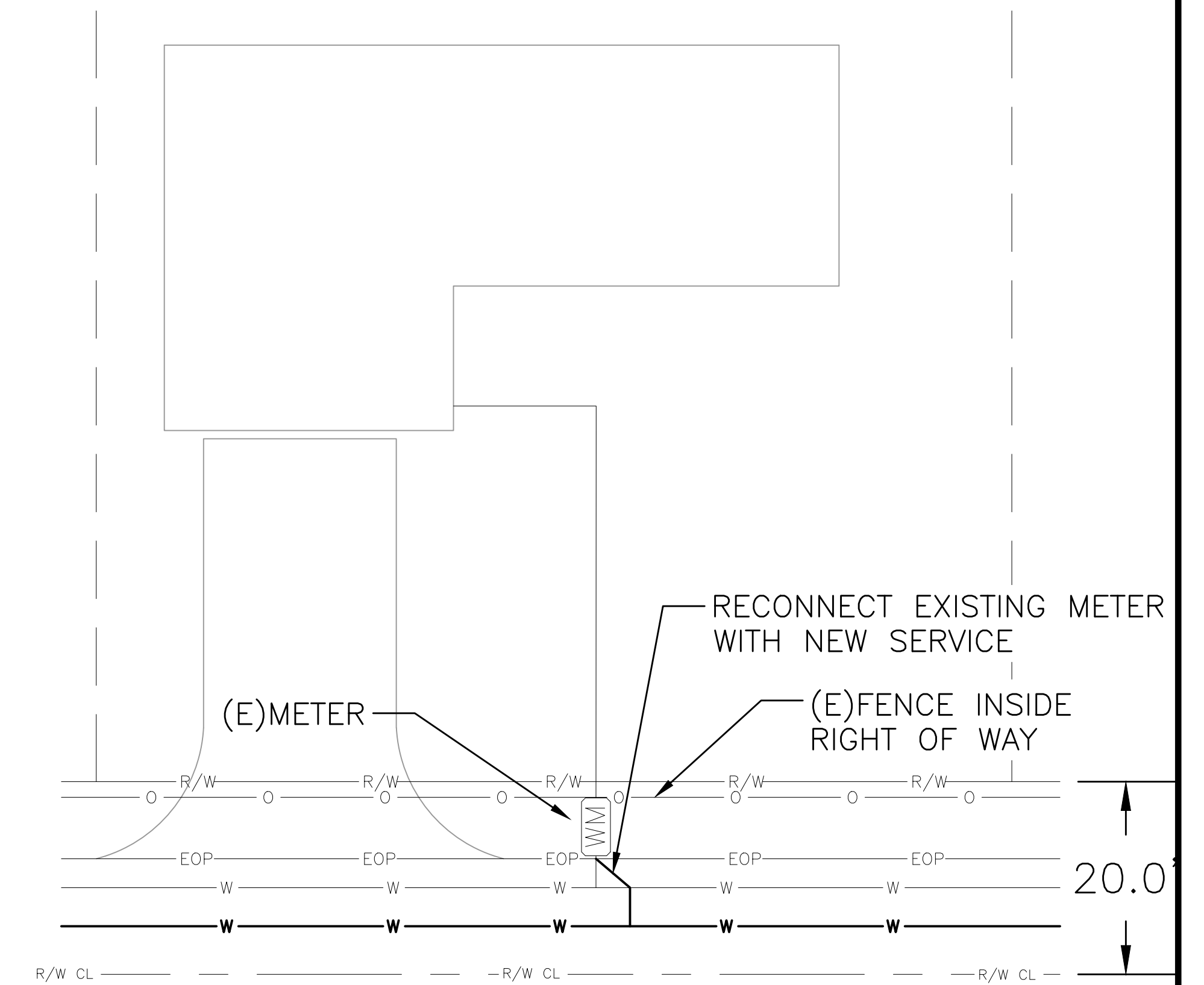
RECONNECT METER OUTSIDE ROW 2
NTS TYP



RELOCATE METER AT FENCE 3
NTS TYP



RECONNECT METER BEHIND FENCE 4
NTS TYP



METER CANT BE RELOCATED 5
NTS TYP

20240616.104550 Z:\OPUD-002 HISTORIC WATER INFRASTRUCTURE\DWG - PHASE 1 - CHANGES\DWG\OPUD02-TS AND DS.DWG

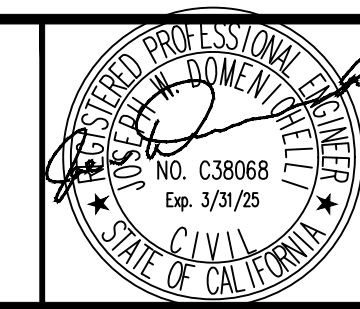
1	7/3/24	MD	ADDENDUM 1
2	7/19/24	MD	ADDENDUM 2
REV	DATE	BY	DESCRIPTION

SCALE:	WARNING
NA	0 1/2 1
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DESIGNED MATT DOMENICHELLI
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CHECKED JOE DOMENICHELLI

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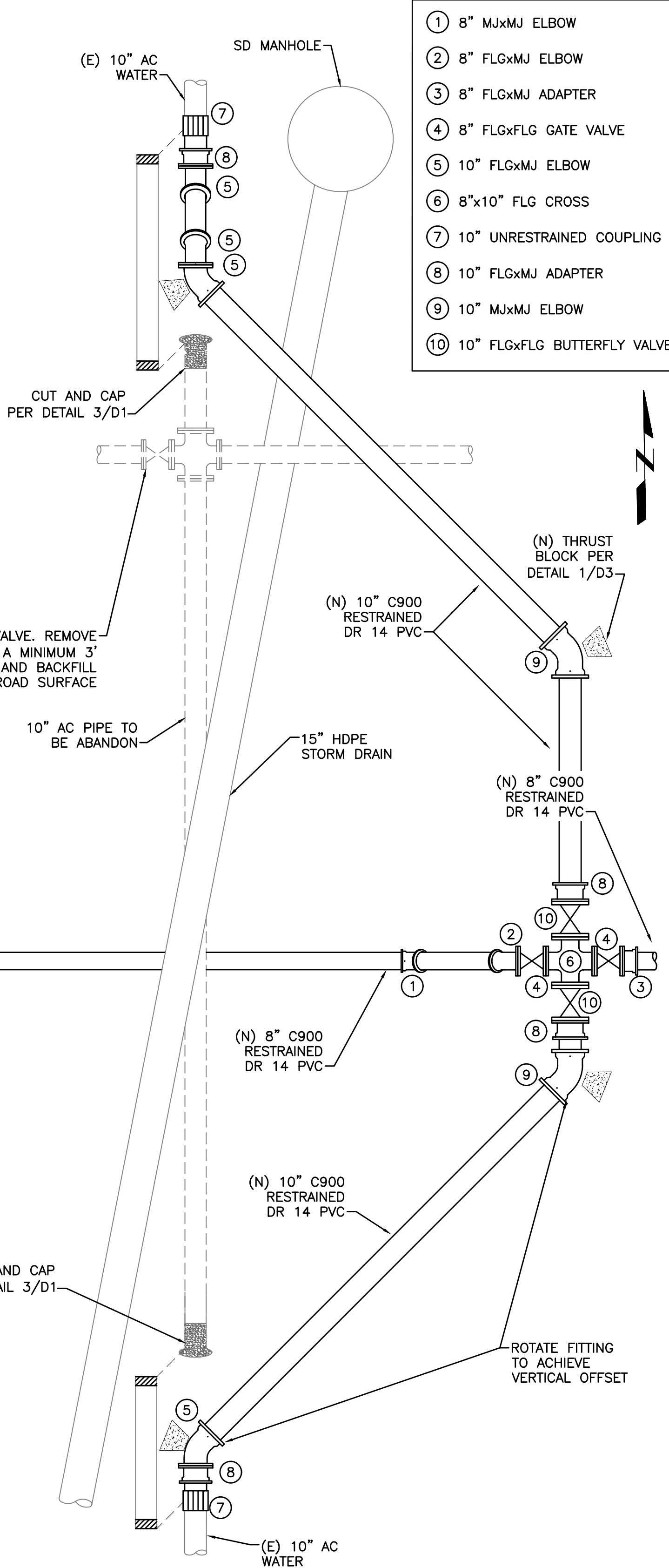


HISTORIC OLIVEHURST STEEL MAIN REPLACEMENT PROJECT
NEW SERVICE AND METER DETAILS 2

DWG D4
SHEET 22
OF 24

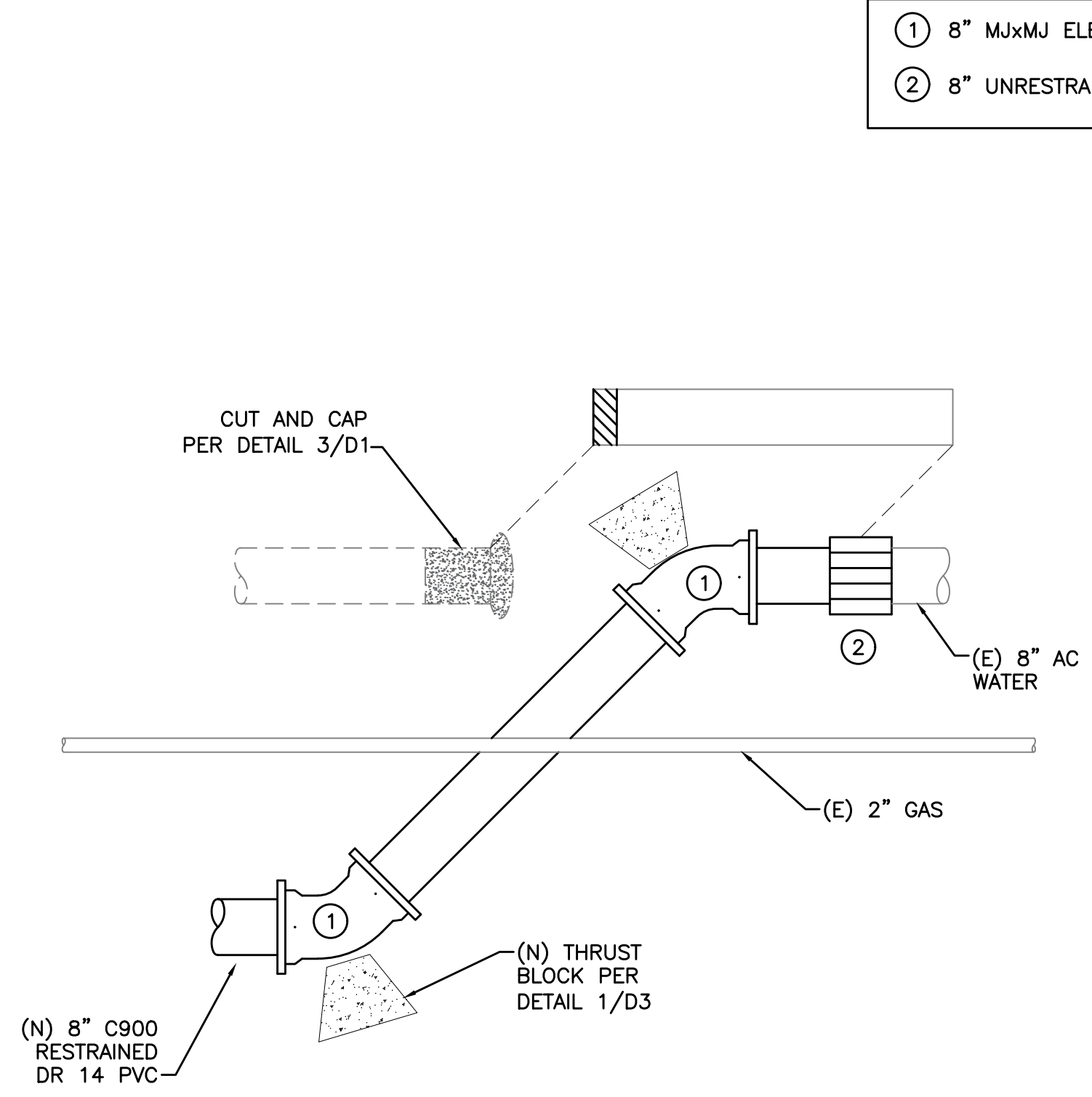
GENERAL NOTES (APPLICABLE TO ALL DETAILS):

1. NOT ALL UTILITIES BEING CROSSED OR IN THE VICINITY OF THE TIE-IN ARE SHOWN. CONTRACTOR MUST POTHOLE ALL UTILITIES AND NOTIFY THE ENGINEER OF ANY CONFLICTS.
2. ALL MJ FITTINGS ARE TO BE FULLY RESTRAINED WITH MEGALUGS. ALL PVC PIPE TO BE CLASS 305 (DR14).
3. CONTRACTOR TO POTHOLE AND VERIFY (E) PIPE DIAMETER, (E) PIPE MATERIAL AND EXISTING CONFIGURATION PRIOR TO ORDERING MATERIALS FOR TIE-INS AND ABANDONMENTS.
4. CONNECTION TO ACP (IF PRESENT) WILL REQUIRE A NON-RESTRAINED PIPE COUPLING AND ADDITIONAL THRUST BLOCKS NOT SHOWN. CONTRACTOR TO COORDINATE WITH CITY INSPECTOR.
5. FOR THE PURPOSE OF BIDDING, CONTINUATION OF NEW PVC TO THE EXTENT OF THE RESTRAINED LENGTH (NOT SHOWN) IS TO BE CONSIDERED PART OF EACH DETAIL. SEE M&P DESCRIPTIONS.



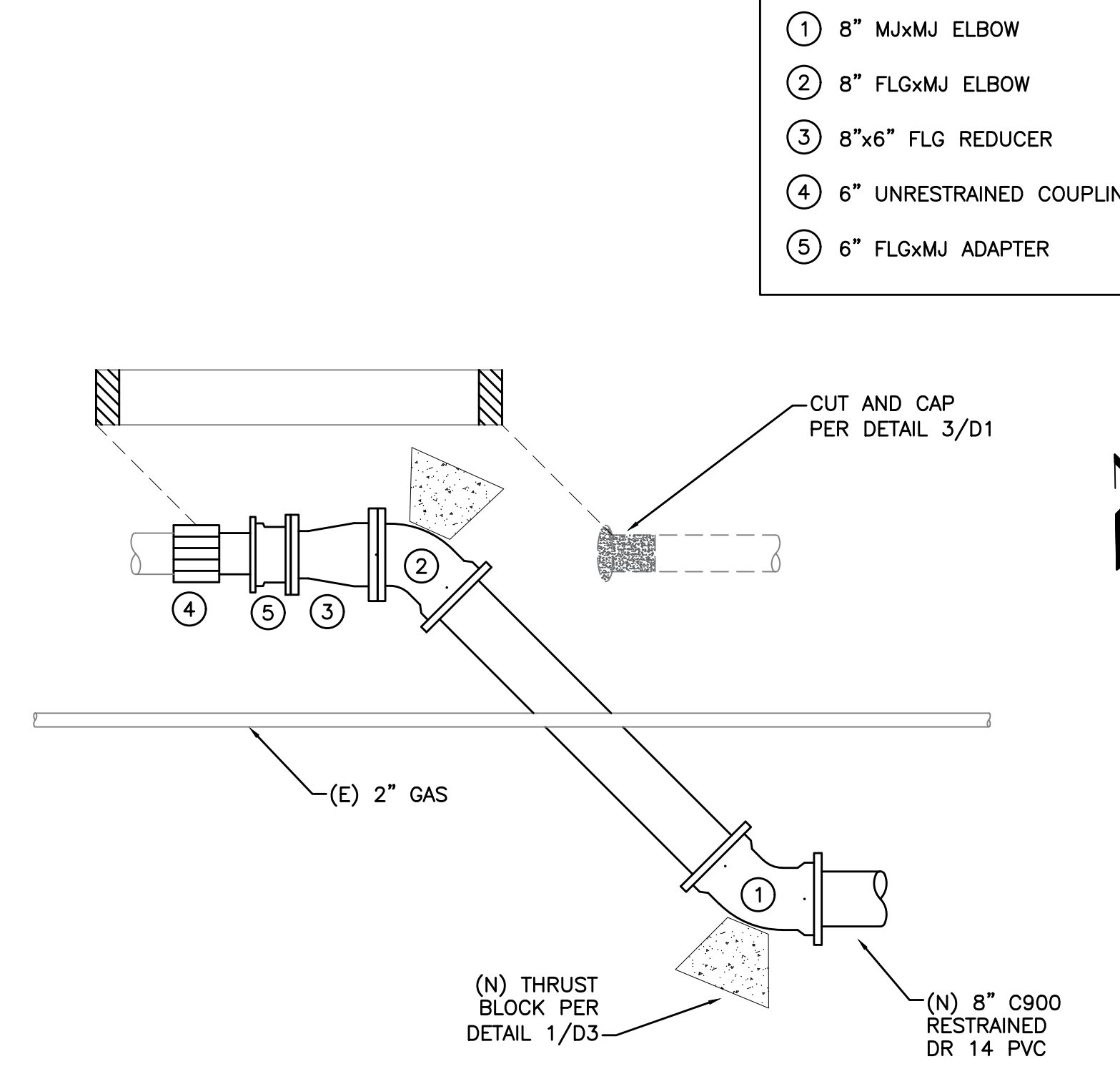
- 1 8" MJxMJ ELBOW
- 2 8" FLGxMJ ELBOW
- 3 8" FLGxMJ ADAPTER
- 4 8" FLGxFLG GATE VALVE
- 5 10" FLGxMJ ELBOW
- 6 8"x10" FLG CROSS
- 7 10" UNRESTRAINED COUPLING
- 8 10" FLGxMJ ADAPTER
- 9 10" MJxMJ ELBOW
- 10 10" FLGxFLG BUTTERFLY VALVE

8TH AVE. AND OLIVEHURST TIE-IN AT STA 13+95
 DETAIL $\frac{1}{C16}$
 NOT TO SCALE



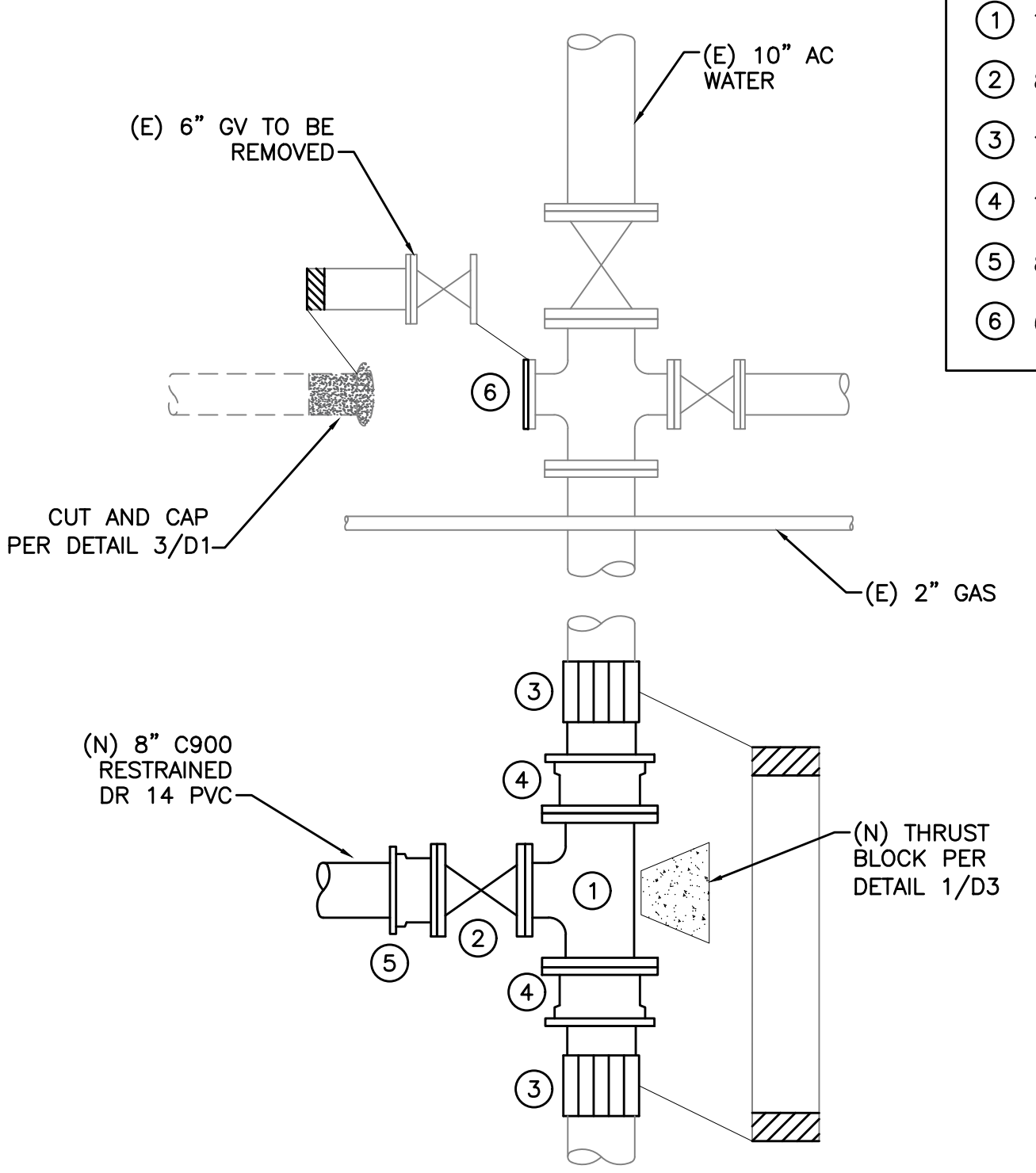
- 1 8" MJxMJ ELBOW
- 2 8" UNRESTRAINED COUPLING

8TH AVE. TIE-IN AT STA 24+06
 DETAIL $\frac{2}{C17}$
 NOT TO SCALE



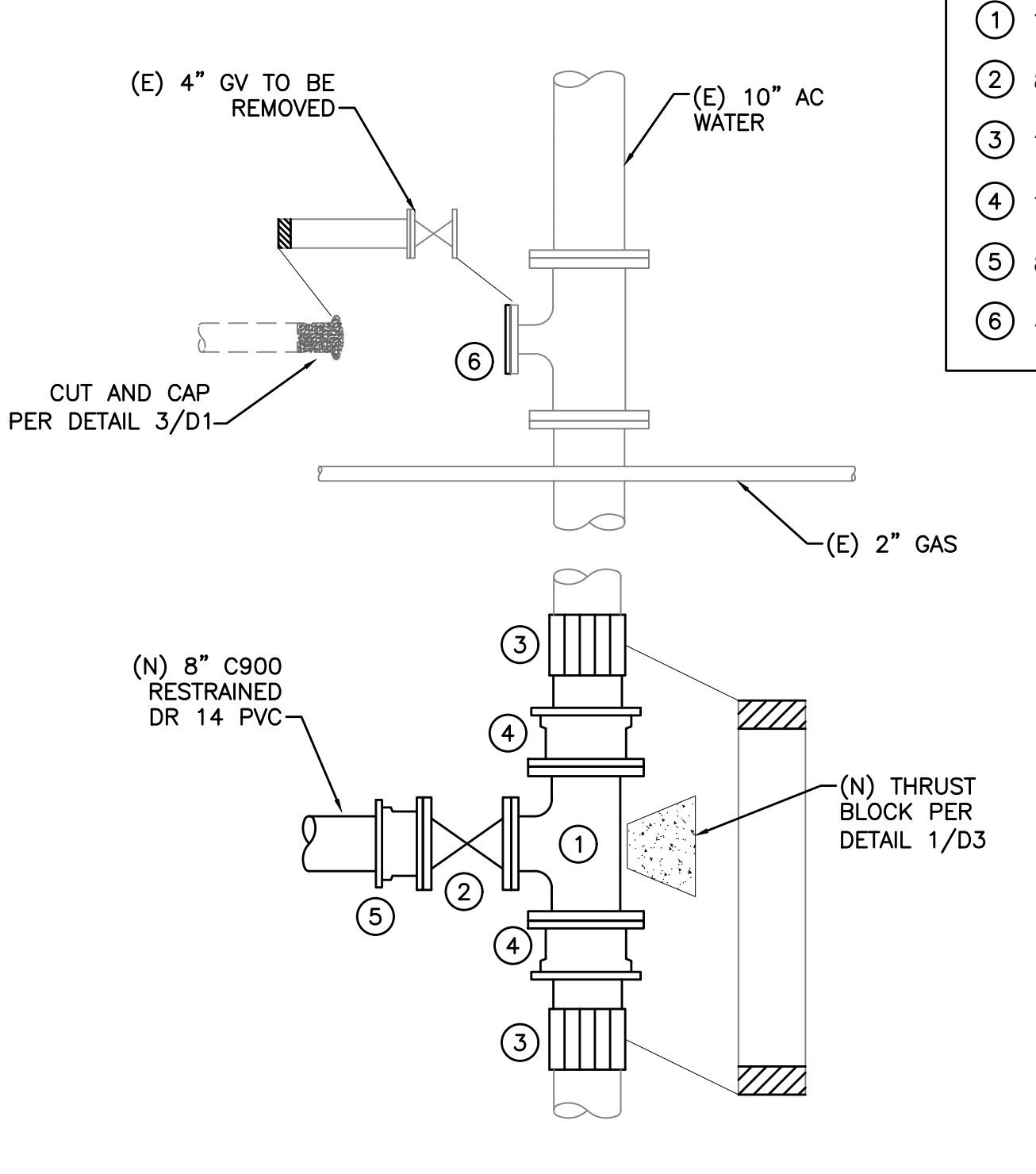
- 1 8" MJxMJ ELBOW
- 2 8" FLGxMJ ELBOW
- 3 8"x6" FLG REDUCER
- 4 6" UNRESTRAINED COUPLING
- 5 6" FLGxMJ ADAPTER

9TH AVE. TIE-IN AT STA 1+00
 DETAIL $\frac{3}{C18}$
 NOT TO SCALE



- 1 10"x8" FLG TEE
- 2 8" FLGxFLG GATE VALVE
- 3 10" UNRESTRAINED COUPLING
- 4 10" FLGxMJ ADAPTER
- 5 8" FLGxMJ ADAPTER
- 6 6" BLIND FLANGE

9TH AVE. TIE-IN AT STA 14+23
 DETAIL $\frac{4}{C19}$
 NOT TO SCALE



- 1 10"x8" FLG TEE
- 2 8" FLGxFLG GATE VALVE
- 3 10" UNRESTRAINED COUPLING
- 4 10" FLGxMJ ADAPTER
- 5 8" FLGxMJ ADAPTER
- 6 4" BLIND FLANGE

10TH AVE. TIE-IN AT STA 13+82
 DETAIL $\frac{5}{C21}$
 NOT TO SCALE

20240616.104550 Z:\OPUD-002 HISTORIC WATER INFRASTRUCTURE\DWG - PHASE 1 - CHANGES\DWG\OPUD02-TS AND DS.DWG

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REV	DATE	BY	DESCRIPTION

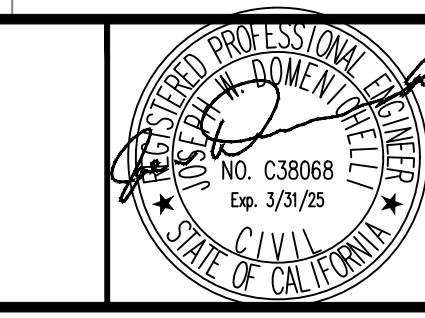
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WARNING
 0 1/2 1
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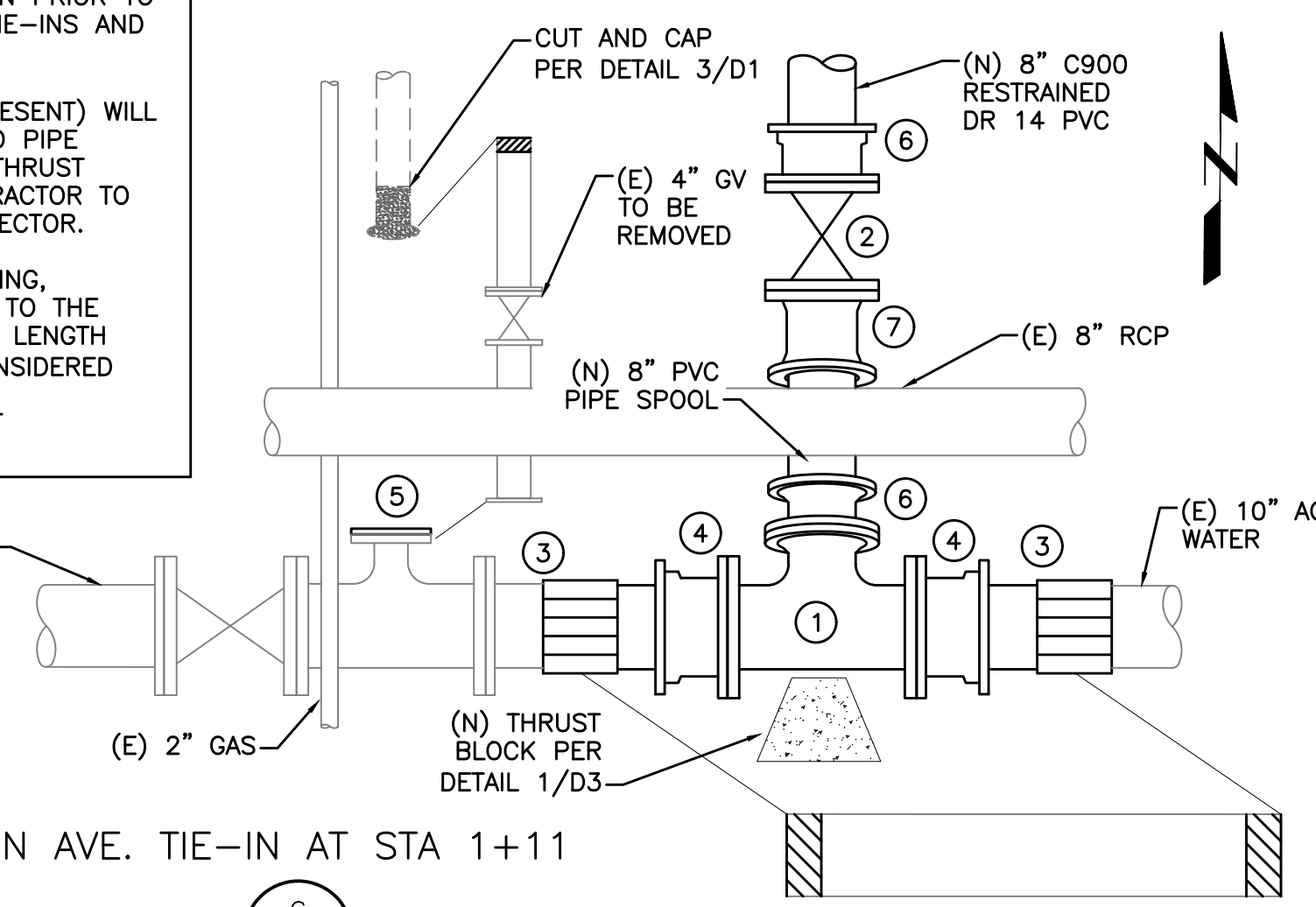
HISTORIC OLIVEHURST STEEL MAIN REPLACEMENT PROJECT
 TIE-IN DETAILS 1

DWG T1
 SHEET 23
 OF 24

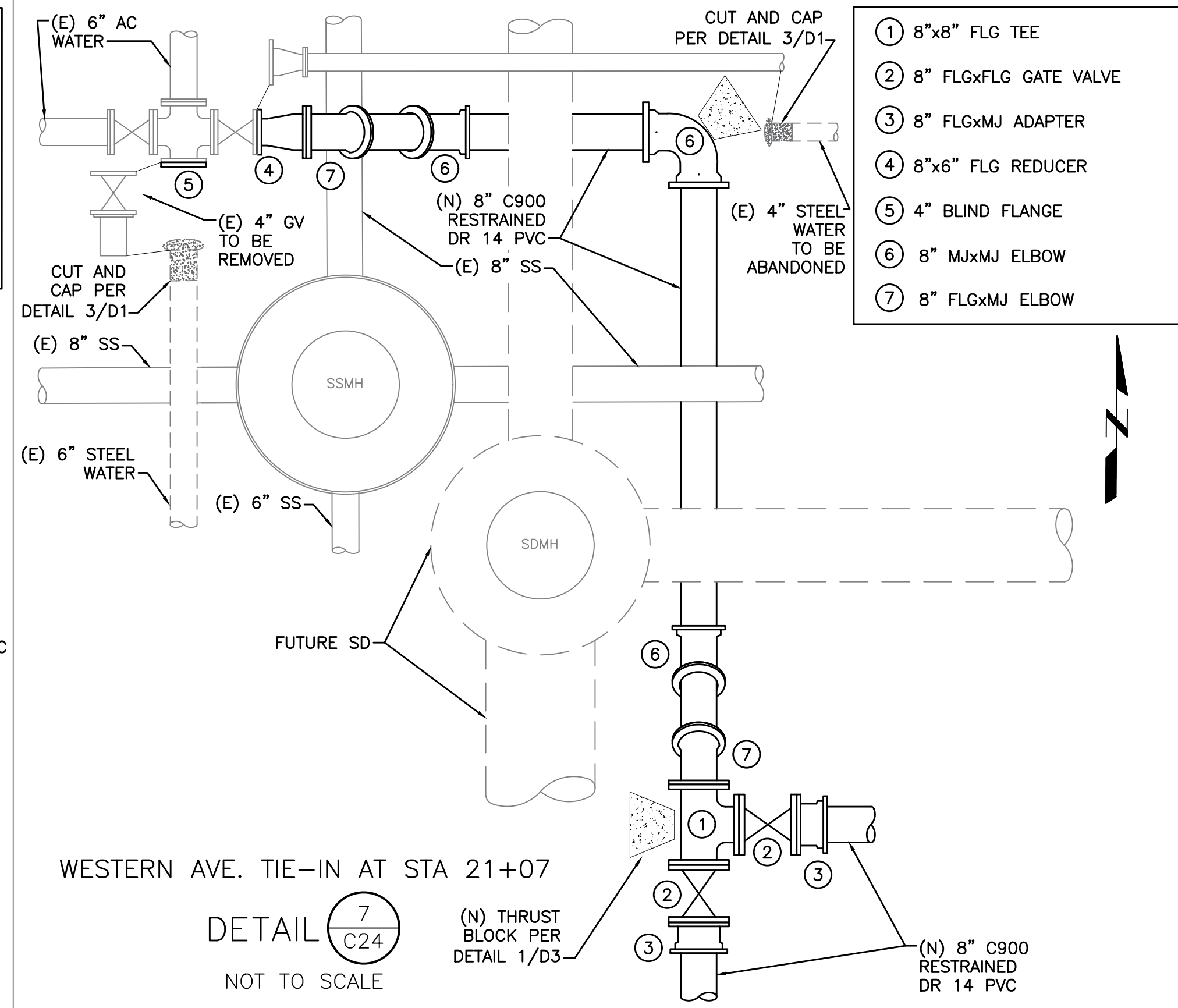
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2. ALL MJ FITTINGS ARE TO BE FULLY RESTRAINED WITH MEGALUGS. ALL PVC PIPE TO BE CLASS 305 (DR14).
3. CONTRACTOR TO POTHOLE AND VERIFY (E) PIPE DIAMETER, (E) PIPE MATERIAL AND EXISTING CONFIGURATION PRIOR TO ORDERING MATERIALS FOR TIE-INS AND ABANDONMENTS.
4. CONNECTION TO ACP (IF PRESENT) WILL REQUIRE A NON-RESTRAINED PIPE COUPLING AND ADDITIONAL THRUST BLOCKS NOT SHOWN. CONTRACTOR TO COORDINATE WITH CITY INSPECTOR.
5. FOR THE PURPOSE OF BIDDING, CONTINUATION OF NEW PVC TO THE EXTENT OF THE RESTRAINED LENGTH (NOT SHOWN) IS TO BE CONSIDERED PART OF EACH DETAIL. SEE MEASUREMENT AND PAYMENT DESCRIPTIONS.

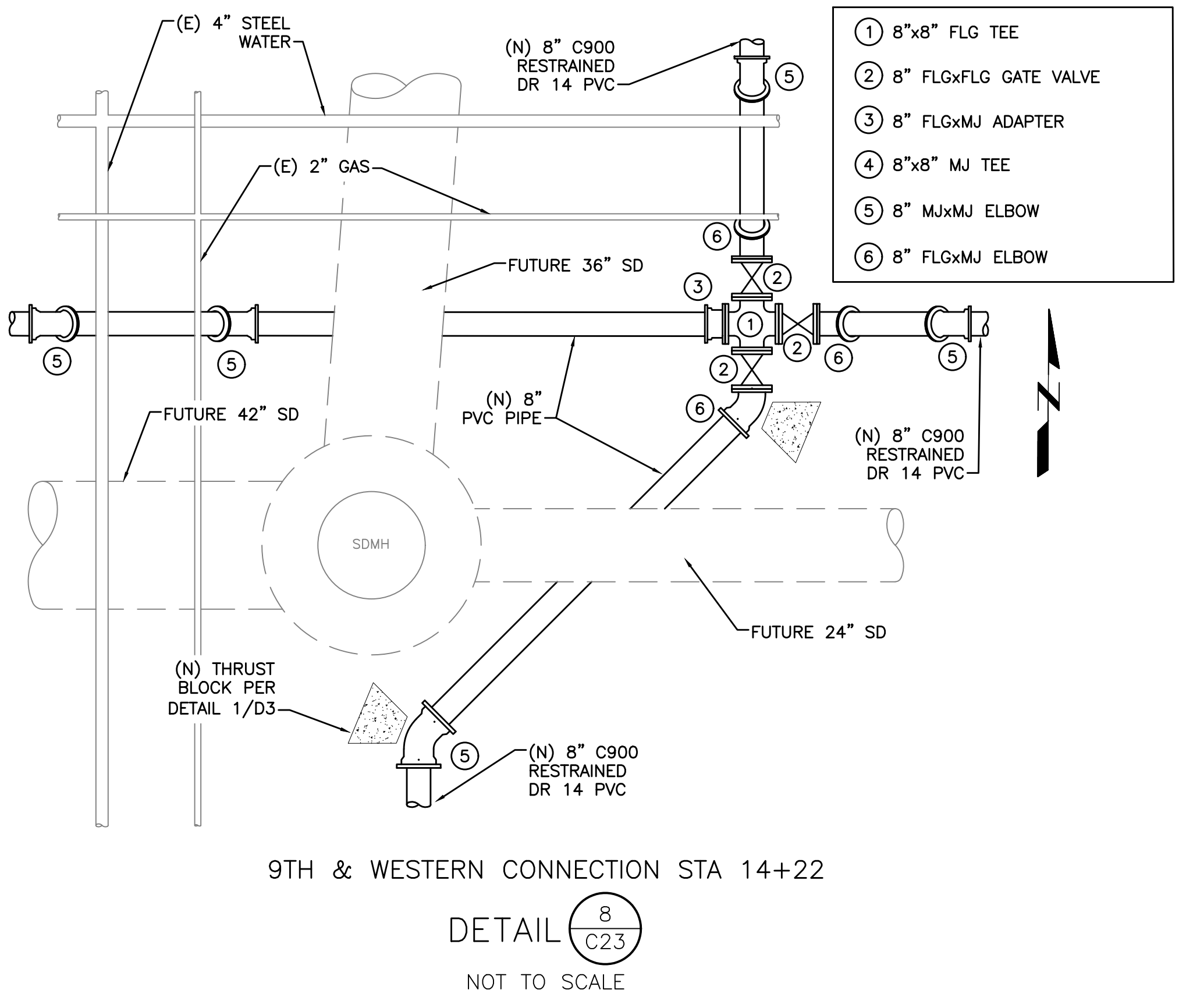
- 1 10"x8" FLG TEE, ROTATED
- 2 8" FLGxFLG GATE VALVE WITH FLGxMJ ADAPTERS
- 3 10" UNRESTRAINED COUPLING
- 4 10" FLGxMJ ADAPTER
- 5 4" BLIND FLANGE
- 6 8" FLGxMJ ADAPTER
- 7 8" FLGxMJ 11.25' BEND



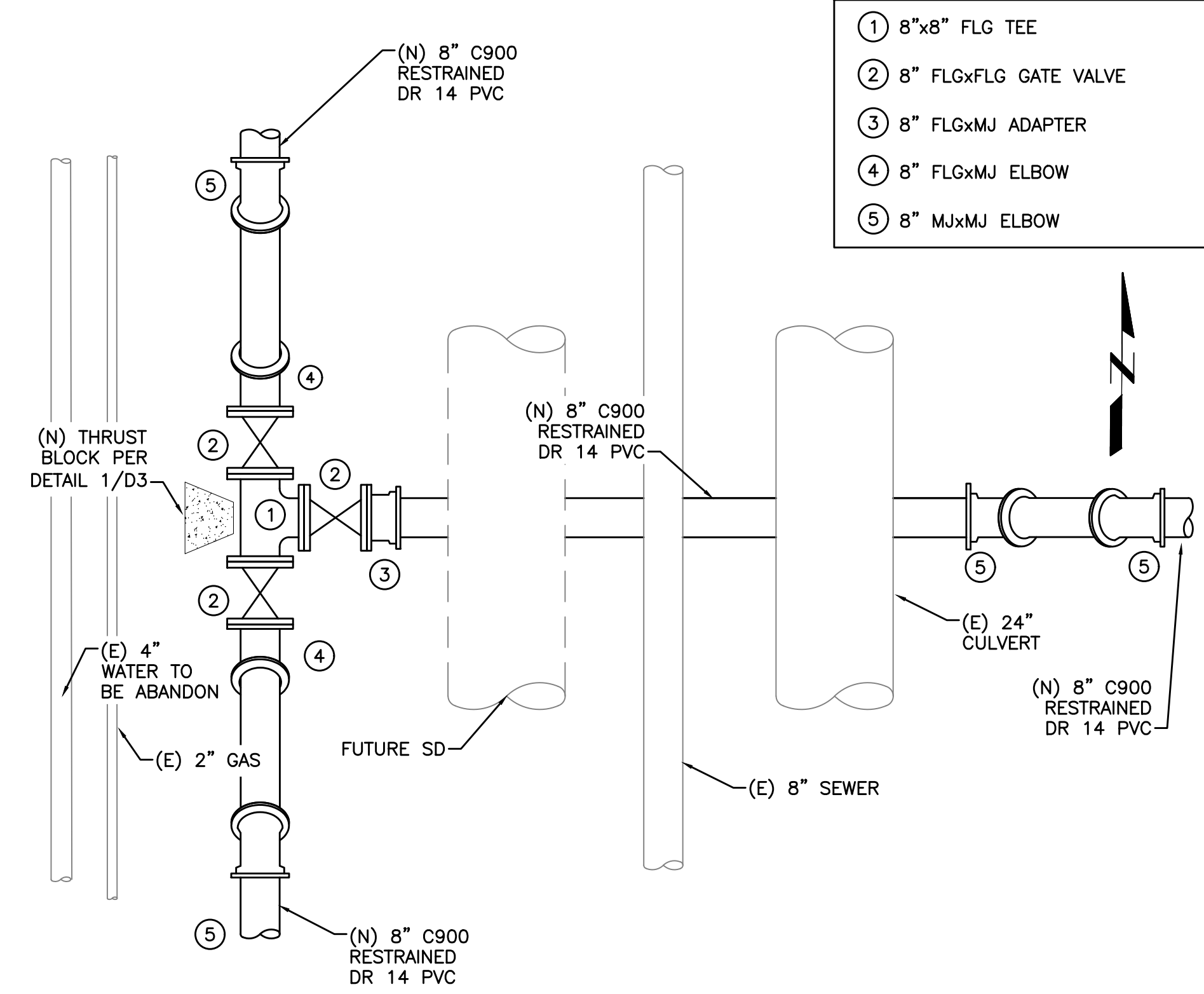
WESTERN AVE. TIE-IN AT STA 1+11
 DETAIL **6**
 C22
 NOT TO SCALE



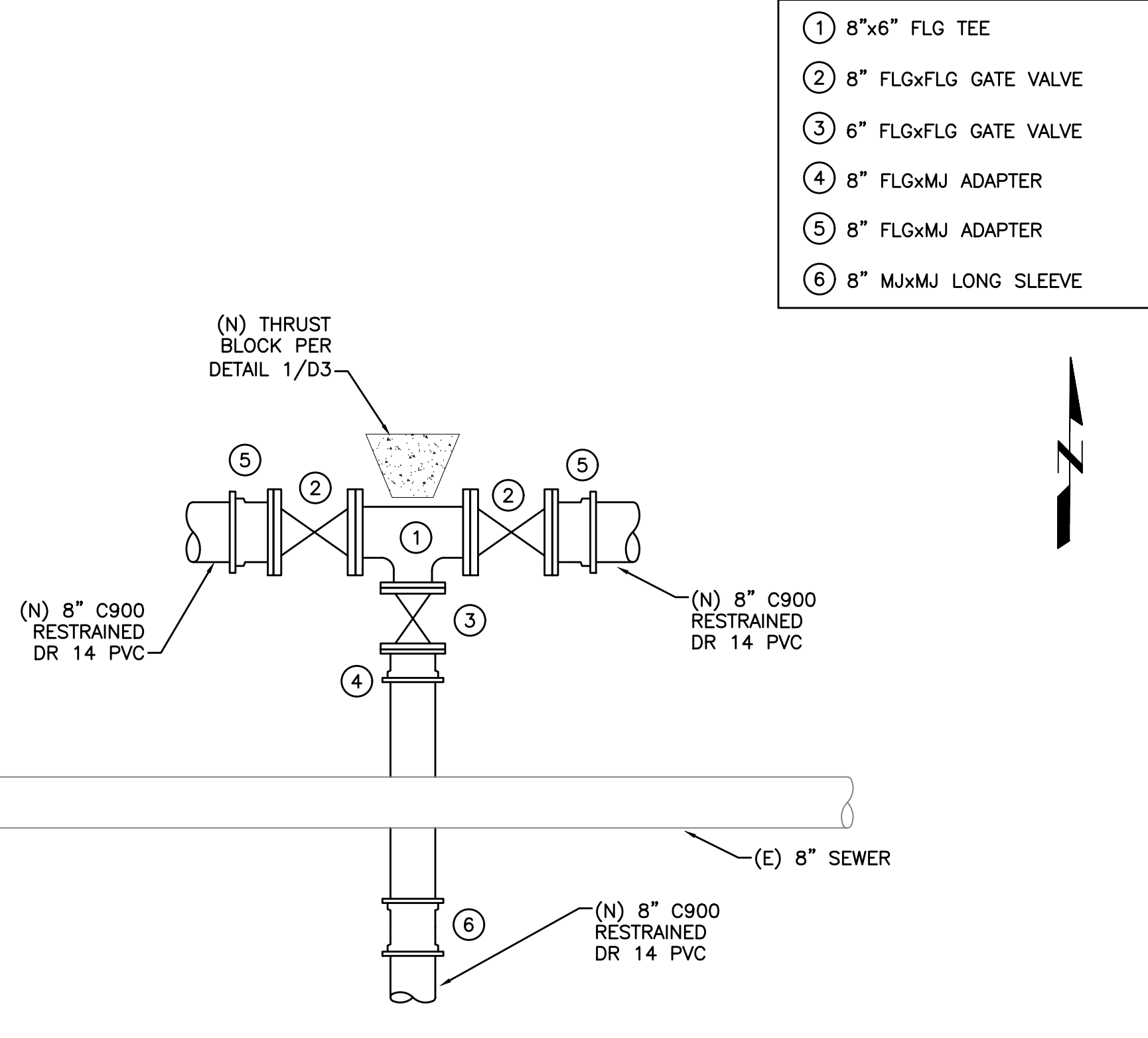
WESTERN AVE. TIE-IN AT STA 21+07
 DETAIL **7**
 C24
 NOT TO SCALE



9TH & WESTERN CONNECTION STA 14+22
 DETAIL **8**
 C23
 NOT TO SCALE



10TH & WESTERN CONNECTION STA 7+58
 DETAIL **9**
 C22
 NOT TO SCALE



8TH AVE & PRIVATE RD CONNECTION STA 23+80
 DETAIL **10**
 C25
 NOT TO SCALE

NOT USED
 DETAIL **11**
 NOT TO SCALE

Z:\OPUD-002 HISTORIC WATER INFRASTRUCTURE\DWG - PHASE 1 - CHANGES\DWG\OPUD02-TS AND DS.DWG

1	7/3/24	MD	ADDENDUM 1
2	7/19/24	MD	ADDENDUM 2
REV	DATE	BY	DESCRIPTION

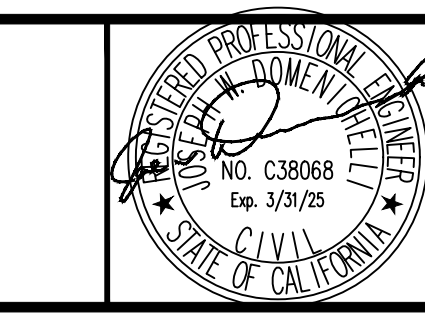
SCALE: NA

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HISTORIC OLIVEHURST STEEL MAIN REPLACEMENT PROJECT

TIE-IN DETAILS 2

APPENDICES

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Olivehurst PUD Improvement Standards and Standard Details

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**IMPROVEMENT STANDARDS,
AND
STANDARD DETAILS
FOR
OLIVEHURST PUBLIC UTILITY DISTRICT**

1970 9th Avenue
Olivehurst, California
530-743-4657, fax 530-743-3023

May 2021

Other Applicable Specifications and Details:

- 1. County of Sacramento Improvement Standards & Standard Construction Specifications, (latest revision).**
- 2. State of California, Department of Transportation, Standard Specifications, (1999 Edition).**

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IMPROVEMENT STANDARD

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SECTION 1

ABBREVIATIONS and DEFINITIONS

- 11 **GENERAL:** These Improvement Standards and Standard Details provide standards to be applied to improvements and private works to be dedicated to and accepted by Olivehurst Public Utility District for maintenance and / or operation. All improvement work shall be done in accordance with the appropriate provisions of these Specifications entitled **Improvement Standards and Standard Details** for Olivehurst Public Utility District.
- 12 **OMISSIONS:** Any items or situations not included in these Improvement Standards and Standard Details shall be designed in accordance with accepted engineering practice, the County of Sacramento Improvement Standards & Standard Construction Specifications, (latest revision), and State of California, Department of Transportation, Standard Specifications, (1999 Edition).
- ◆ **In the case of any and all discrepancies between these Improvement Standards and Standard Details, County of Sacramento Improvement Standards & Standard Construction Specifications, Caltrans Standard Specifications, and the designed construction documents, the District Engineer shall decide the appropriate action.**
- 13 **ABBREVIATIONS:** Whenever the following items, titles, or abbreviations are used in these Specifications, or in any document or instrument where these Specifications govern, the intent and meaning shall be as herein defined. Working titles having a masculine gender, such as "workman" and "journeyman" and the pronoun "he", are utilized in the specifications for sake of brevity, and are intended to refer to persons of either gender.

AAN	American Association of Nurserymen
AASHTO	American Association of State Highway and Transportation Officials
AC	Asphaltic Concrete
ACI	American Concrete Institute
AISC	American Institute of Steel Construction
AISI	American Iron and Steel Institute
ARV	Air Relief Valve
ASA	American Standards Association
ASME	American Society of Mechanical Engineers
ASTM	American Society for Testing and Materials
AVV	Air Vacuum Valve
AWG	American Wire Gage
AWS	American Welding Society
BBO	Bottom Blow Off
Backflow	Back Prevention Device and/or Assembly
BO	Blow Off
Cal-OSHA	California Occupational Safety and Health Administration
Caltrans	California Department of Transportation
CFM	Cubic Feet Per Minute
CL	Centerline
CSI	Construction Specifications Institute
CY	Cubic Yards
DI	Drain Inlet
D.O.T.	Department of Transportation (CA)
EA	Each

EP	Edge of Pavement
FH	Fire Hydrant
FM	Force Main
FPS	Feet Per Second
FS	Federal Specifications
Hg	Inches of Mercury
Inv	Invert
ISA	International Society of Arboriculture
LB	Pounds
LF	Linear feet
LS	Lump Sum
NBFU	National Board of Fire Underwriters
NCPI	National Clay Pipe Institute
NEC	National Electrical Code
NEMA	National Electrical Manufacturers Association
NFPA	National Fire Protection Association
NSF	National Sanitation Foundation
OPUD	Olivehurst Public Utility District
OSHA	Occupational Safety and Health Act
PCC	Portland Cement Concrete
psf	Pounds per Square Foot
psi	Pounds per Square Inch
SD	Storm Drain
SF	Square Foot / Feet
SS	Sanitary Sewer
STA	Station
Title 8	Title 8 (Construction Safety Orders) of the California Code of Regulations
Title 17	Title 17 California Administrative Code
Title 19	Title 19 (Public Safety) of the California Code of Regulations
Title 24	Title 24 (Building Standards) of the California Code of Regulations
TBC	Top Back of Curb
Typ.	Typical
WV	Water Valve

14 DEFINITIONS: Whenever in these said **Improvement Standards** and **Standard Details**, the following terms are used, they shall be understood to mean and to refer to the following:

"Agency": Shall mean the District or another governing body or agency having jurisdiction over the specific partition of the work or project.

"Calendar Day": Every day shown on the calendar. When the Contract Time is stated in Calendar Days, every day will be charged toward the Contract Time.

"Construction Specifications": Specification provided by the Design Engineer of Record.

"Construction Acceptance": Acceptance of only a specific portion of the Improvement project as meeting the District requirements. Upon Construction Acceptance and approval by the District, limited usage of specified systems and / or equipment may begin. (Refer to Final Acceptance)

"Consulting Engineer", "Design Engineer", or "Engineer of Record": A person or persons, firm, partnership, joint venture, corporation, or combination thereof, possessing a current California Registration as a Professional Engineer (or Architect), of the appropriate branch of design for the to be work submitted, who is placing their stamp and signature on any and all of the project construction documents or authorized representative thereof, acting in the capacity of who prepares or submits improvement plans and specifications to OPUD for approval. The Consulting Engineer shall issue directions to the Contractor only through the District.

"Contract": The written agreement signed by an Agency, Developer, and / or the Contractor covering the Work and the furnishing of labor, materials, tools, and equipment in the construction of the Work. The Contract shall include but not be limited to; Notice to Contractors, Bid, Plans, Specifications, Special Provisions, contract bonds, and any project-specific specifications or documents; also any and all supplemental agreements, amending or extending the Work contemplated and that which may be required to complete the Work in a substantial and acceptable manner. Supplemental agreements are written agreements covering alterations, amendments, or extensions to the Contract and include Contract Change Orders.

"Contractor": The person or persons, firm, partnership, corporation, or combination thereof, who have entered into a contract with any Agency, and / or Developer, as a party or parties of the second part or his or her or their legal representatives, and is properly licensed and responsible for performing the specified Contract work.

"County", or "Department of Public Works": The County of Yuba

"Developer": Any person or persons, firms, partnership, corporation or, combination thereof, financially responsible for the Work involved.

"Development": The act, process, or result of any land grading, utility installation, street or building construction on any property.

"District", "The District", or "OPUD": Shall mean the **Olivehurst Public Utilities District** or authorized representative thereof.

"District Engineer" or "Engineer": The District authorized District's Engineer or authorized representative thereof.

"Division of Highways", or "Department of Transportation": State of California, Department of Transportation or Caltrans.

"Final Acceptance": Acceptance of the Improvement Project as being fully completed; the Contractor shall file with the District a Notice of Completion and the District Engineer shall develop a list of comments. All final comments made by the District to the improvement project must be addressed and all required documents, product, files, and information have been received, approved and accepted by the District upon which time the specific guarantees and warranty periods shall begin. (Refer to Construction Acceptance)

"Inspector" or "Field Inspector": The person or persons authorized to act as agent(s) for the District in the inspection of the Work. The District Engineer or authorized representative thereof.

"Laboratory": The testing agency or testing firm which has a current certification issued by the State of California to perform the required designated test procedure, shall provide the District with a copy of the results and is accepted by the District.

"Plans": The plans, drawings, profiles, cross sections, Working Drawings, and Supplemental Drawings, or reproductions thereof, approved and signed by the Agency, which show locations, character, dimensions and details of the Work. All Plans used during construction shall be subject to review and approval by signature of an authorized representative of OPUD.

"Project": Shall mean the Work.

"Record Drawings", "As Built Drawings", or "As Built Plans": Shall mean the Final Construction Documents prepared by the Design Engineer that document changes to, additions to, or deductions from the

Documents, and which represent the Work as constructed. These plans are a requirement for final acceptance of the new utilities.

"Red Noted Drawings", "Red Noted Documents", or "Red Noted Plans": Shall mean Construction Documents marked up in red pen and / or pencil by the Contractor that document changes to, additions to, or deductions from the Documents, and which represent the Work as constructed. These plans are a requirement for final acceptance of the new utilities.

"Sac County", "Sac County Standards", "Sacramento County Standards": County of Sacramento Improvement Standards & Standard Construction Specifications, (latest revision).

"Soils Engineer", or "Geotechnical Engineer": A current California Registered Professional Geotechnical Engineer, who is placing their stamp and / or signature on any of the project soils and / or compaction testing, acting in the capacity of who prepares or submits soils documentation. The Geotechnical Engineer shall issue directions to the Contractor only through OPUD.

"Standard Details": Detail drawings contained in this Improvement Standards and Standard Details Manual, (information that is not shown in these OPUD Standard Details are subject to the current adopted County of Sacramento Improvement Standards and Standard Construction Specifications. Contact the District Engineer for any items requiring clarification).

"Standard Improvements", "Standard Specifications": Specifications contained in this Improvements Standard and Standard Details Manual, (information that is not shown in these OPUD Standard Improvements are subject to the County of Sacramento Improvement Standards and Standard Construction Specifications, (latest revision), State of California, Department of Transportation, Standard Specifications, (1999 Edition). Contact the District Engineer for any and all required clarifications).

"State": California

"State Specifications": California Standard Specifications, Caltrans.

"SubContractor": A properly licensed party under contract to and responsible to the Contractor for performing a specified part of the Work; or a properly licensed party under contract and responsible to a Subcontractor of the Contractor.

"Work": All actions which Contractor is contractually required to do as specified, indicated, shown, contemplated, or implied in the Contract to construct the Work, including all alterations, amendments, or extensions made by Contract Change Order or other written orders or directives of the Agency. Unless specified otherwise in the Contract, the Work includes furnishing all materials, supplies, equipment, tools labor, transportation, supervision, and all incidentals necessary to complete the Work.

"Working Day": Any day except: (a) Saturdays, Sundays and Legal Holidays; (b) days on which the Contractor is specifically required by the special provisions or by law to suspend construction operations; or (c) days on which the Contractor is prevented from proceeding with current controlling operation or operations of Work for at least five (5) hours per day due to inclement weather, or conditions resulting immediately therefrom.

"Working Drawings": Working drawings detail a particular item of work and the manner in which it is to be accomplished or performed. Working drawings are drawings, which have been reviewed and have approval by signature of an authorized representative of OPUD.

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SECTION 2

WATER USAGE, WATERING, AND DUST CONTROL

- 2.1 **WATER:** All water used in construction shall conform to Section 17, "Watering" of the State Specifications, these Improvement Standards, and all applicable adopted Federal, State, and Local Codes and Regulations.
- ◆ **An authorized representative of the District shall perform the operation of all valves and fire hydrants on the District water systems.** Fire hydrants shall be accessible and usable at all times by the Fire Department.
 - ◆ **The Olivehurst Public Utility District** main office is located at 1970 9th Ave., Olivehurst, California, 95961, Phone 530-743-4657, Fax 530-743-3023.
- 2.11 No water of any amount is to be obtained from the District's Water Facilities / System without first obtaining a written arrangement / agreement with the District. All arrangements for the obtaining of water for use in construction, and / or development shall be made by the Contractor / Developer and shall be submitted in a written request to the District, which shall include all of the following information;
- A. Proposed point of connection.
 - B. Proposed equipment to be installed for the drawing of the water including, but not limited to, the meter model, serial number, units of measure, and the beginning reading of the meter for each meter to be used. **Note:** The Contractor / Developer is required to provide their own water meter, which shall be approved by the District prior to being installed.
 - C. Proposed dates and times for use.
 - D. Contact Persons with day and night phone numbers for any emergency.
 - E. All District fees, deposits and permits shall be paid in full prior to any connection.
 - F. All water storage tanks (including, but not limited to water trucks and sweepers equipment) shall be inspected by the District for compliance and must have an OPUD Hydrant Use Permit.
- ◆ All proposals are subject to all District standards, conditions and requirements including method of payment.
 - ◆ For special arrangements / agreement other than for a metered connection, a special rate set by the District shall apply.
- 2.12 All arrangements including, but not limited to fire hydrant connection, shall be equipped with a District accepted back flow prevention device. All Back Flow devices shall be annually certified by a District approved company and shall have a tag attached to the device by the District (contact the District for applicable fees). A back flow device shall be required for all connections and equipment.
- 2.13 All back flow devices both temporary and permanent shall have an annual certification on file with the District. Any back flow device which has an expired certification shall have service terminated and /or shall be re-certified by the District, the device owner shall be responsible for paying all associated costs.
- 2.14 The air-gap separation shall be at least double the diameter of the supply pipe, measured vertically from the flood rim of the receiving vessel to the supply pipe. In no case shall the air-gap separation be less than two (2) inches for any pipe smaller than one (1) inch in diameter.
- ◆ **Title 17, Chapter V, Section 7583-7622, California Administrative Code regarding cross-connections and back flow prevention.**

- ◆ **WRITTEN PROOF OF ANY AND ALL ARRANGEMENT WITH THE DISTRICT SHALL BE AVAILABLE FOR REVIEW BY ANY DISTRICT REPRESENTATIVE AT ANY AND ALL TIMES. ALL ARRANGEMENTS ARE SUBJECT TO ADDITIONAL REQUIREMENTS AND / OR RE-REVIEW BY THE DISTRICT AND MAY BE TERMINATED AT ANY TIME.**

215 Fire hydrants shall only be opened and closed by the use of wrenches designed to operate said hydrants. The Contractor shall not leave any hose and / or equipment attached and all caps shall be reinstalled after each and every time water has been drawn from the system. The only exception is when an approved meter and / or back flow device has been installed per the written agreement with the District. The fire hydrant and work area adjacent thereto, along with twenty (20) feet each direction from the centerline of the fire hydrant along the street right a way shall be kept clear for emergency use by any Fire Department representative.

216 All connection to any of the individual water service Curb Stop Valves and / or Meter Setter assemblies shall be approved by the District prior to any attachment and shall have all required back flow prevention devices installed during each and every time water is to be drawn from the system. Any and all connections that are leaking, damaged, altered, or have been tampered with shall have the valve closed and a District locking device installed.

2.2 **DUST CONTROL:** Dust Control measures shall be taken in conformance to Section 10, "Dust Control" of the State Specifications and these Improvement Standards. Contractor shall water the construction site at sufficient intervals to preclude the nuisance of dust caused by the Contractor's operations and / or wind and / or traffic as directed by the Agency having jurisdiction.

2.3 **ENVIRONMENTAL PROTECTION:** During the progress of the work, keep all work areas occupied by the Contractor in a neat and clean condition and protect the environment both onsite and offsite, throughout and upon completion of the construction project. Contractor shall not dispose of any chlorinated water and / or contaminated water and / or any materials into any waterway, drainage system, wetland, or other protected area. Contractor shall meet all requirements as directed by an authorized representative of the District and / or as directed by the Agency having jurisdiction.

- **DIRECT CONNECTION AND/OR UNAUTHORIZED CONNECTION TO ANY PART OF THE OLIVEHURST PUBLIC UTILITY DISTRICT WATER SUPPLY SYSTEM WILL NOT BE PERMITTED. ANY AND ALL UNAUTHORIZED EQUIPMENT SO INSTALLED SHALL BE SUBJECT TO CONFISCATION AND REVOKED WATER PRIVILEGES.**
- **REMOVAL AND / OR UNAUTHORIZED TAMPERING WITH ANY OF THE DISTRICT'S EQUIPMENT AND / OR FACILITIES WILL NOT BE TOLERATED AND IS SUBJECT TO ANY AND ALL APPLICABLE FINES AND PENALTIES.**

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SECTION 3

SAFETY - PRECAUTIONS

- 31 PRESERVATION OF PROPERTY:** Due care shall be exercised to avoid injury to existing improvements, utility facilities, adjacent property, and roadside trees and shrubbery that are not to be removed or relocated.
- 311** Trees and shrubbery that are not to be removed, and pole lines, fences, signs, markers and monuments, buildings and structures, conduits, pipe lines under or above ground, sewer and water lines, all facilities, and any other improvements or facilities within or adjacent to the work shall be protected from injury or damage, and if ordered by the Engineer, the Contractor shall provide and install suitable safeguards to protect such objects from injury or damage. If such objects are injured or damaged by the Contractor's operations, they shall be replaced or restored at the Contractor's expense, to conditions equivalent to, when the Contractor entered upon the work, or equivalent to the requirements of the Specifications accompanying the contract, if any such objects are part of the work being performed under the contract. The Engineer may make or cause to be made such temporary or permanent repairs as are necessary to restore to service any damaged facility. The cost of such repairs shall be borne by the Contractor and when applicable shall be deducted from any and all monies due and/or to become due to the Contractor under the contract.
- 32 OBSTRUCTIONS:** The location of underground utilities shown on any of the Plans represent the best information available to the District, as well as other Agencies, but should be considered as being approximate only. Utilities may exist that are not as shown on the Plans. The exact locations of all existing underground facilities and improvements within the construction area shall be ascertained by the Contractor before using equipment that may damage such facilities or interfere with their service. The Contractor shall be held liable to the owners of such facilities for any damage or interference with service resulting from the Contractor's operations.
- 33 INTERRUPTION OF SERVICE:** No valves or other controls on existing utility systems shall be operated for any purpose by the Contractor without prior approval of the District Engineer, (Section 2 of these Improvement Standards). The District must be able to provide any and all of its customers with a minimum of two (2) Working Days notice for any and all proposed interruption of any and all existing services.
- 34 SAFETY DEVICES:** Sufficient and adequate signs, lights, barricades and cones shall be furnished, placed and maintained throughout the construction project as may be deemed necessary by Public Works, the Engineer, and/or the State Division of Industrial Safety to adequately protect the public from injury or unnecessary inconvenience due to the construction operations. When traffic is to be interrupted or detoured, flagmen, adequately equipped and instructed, shall be provided by the Contractor as deemed necessary by the District Engineer.
- 35 MAINTAINING TRAFFIC:** Attention is directed to the Standard Specification. The Contractor will be required to furnish the District a work schedule sufficiently detailed so that the District may ascertain therefrom what effect the Contractor's proposed construction program will have on traffic through the construction area.
- 351** The Contractor shall conduct his operations so as to offer the least possible obstruction and inconvenience to the public, and he shall have under construction no greater amount of work than he can prosecute properly with due regard to the rights of the public. Temporary approaches at private driveways shall be provided as needed and when ordered by the Engineer, and shall be kept in good condition.
- 352** Spillage resulting from hauling operations along or across any public traveled way shall be removed immediately at the Contractor's expense.

ATTENTION IS DIRECTED TO ANY SPECIAL TRAFFIC CONTROL PROVISIONS.

36 **COMPLIANCE WITH SAFETY AND HEALTH REGULATIONS:** Safety is a Prime consideration in all Agency Contracts and Projects. The Contractor shall conform to all applicable occupational safety and health standards, rules, regulations, and orders established by the State of California or Federal Government. The Contractor must comply with all applicable provisions of the California Occupational Safety and Health ACT (Labor Code Section 6300 et seq.). The foregoing includes, but is not limited to, all applicable Title 8 Safety Orders issued by the State of California Occupational Safety and Health Administration (Cal/OSHA).

361 Failure of the Agency to suspend the work or notify the Contractor of the inadequacy of safety precautions or non-compliance with existing laws and regulations shall not relieve the Contractor of this responsibility.

37 **PRECONSTRUCTION CONFERENCE AND PROGRESS MEETINGS:**

371 Prior to beginning any and all work the Developer shall schedule a Pre-Construction Conference with the District to be held for the purpose of reviewing the Project. [The Contractor must attend this preconstruction conference, and shall invite the Developer, Design Engineer (or their designated representative), Subcontractors, all applicable Agencies and others necessary to ensure all topics are adequately covered.]

372 Progress Meetings shall be scheduled by the Developer as required by the District, and all others necessary to ensure all topics are adequately covered and will be conducted throughout the duration of the contract.

A. Progress Meetings shall be held not less than once each month during all phases of the Construction and should be scheduled between 9:00 AM and 12:00 or 1:00 PM and 4:00 PM.

- ◆ **THE PURPOSE OF THESE MEETINGS IS TO INFORM, DISCUSS, AND RESOLVE ISSUES RELATED TO THE WORK: THE CONTRACTOR (OR THEIR DESIGNATED REPRESENTATIVE), SHALL ATTEND AND THE DEVELOPER, DESIGN ENGINEER (OR THEIR DESIGNATED REPRESENTATIVE), SUBCONTRACTORS, ALL APPLICABLE AGENCIES AND ALL OTHERS NECESSARY TO ENSURE ALL TOPICS WILL BE ADEQUATELY COVERED, ARE TO ATTEND. DISCUSSION SHALL INCLUDE, BUT IS NOT LIMITED TO: PROGRESS, SCHEDULES, SAFETY, SWPPP, REQUESTS FOR INFORMATION, CHANGE ORDERS, FIELD INSTRUCTIONS, FIELD COORDINATION, SUBMITTALS, QUALITY CONTROL & QUALITY ASSURANCE, TESTING, STARTUP, FIELD CONFLICTS, AND OTHER TOPICS RELATED TO THE PROJECT.**

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TRENCHING OPERATIONS

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SECTION 4

TRENCHING OPERATIONS

- 4.1 LEGAL REQUIREMENTS:** Prior to commencement of trenching operations, the Contractor on this project shall have complied with all requirements of the labor Code of the State of California, including:
- A. STATE A.B. No. 2765 which requires that the Contractor submit plans for trench shoring or protection he proposes to use in performing the trenching and pipe installations in this contract; and
 - B. STATE A.B. No. 1366 which requires that the Contractor obtain a permit for trenching operations from the State Division of Industrial Safety prior to any trench work in trenches over five (5) feet deep. (Blank forms for application to the State for this permit are available at the office of the Director of Public Works.)
- 4.2 GENERAL:** Trenching operations shall include cutting of pavement trench excavation, disposal of excess materials, removal of obstructions, bracing and shoring, bedding of pipe, backfilling, compacting, and placing of temporary and permanent pavement restoration.
- 4.3 TRENCH WIDTH AND DEPTH:** The maximum clearance width of the trench, measured at the horizontal diameter (spring line) of the pipe and at one foot above the top of the pipe, shall be the actual outside diameter of the pipe at the bell, plus one (1) foot. The overall depth of the trench shall be as indicated on the approved and signed Construction plans and shall provide a minimum of three (3) inches of bedding under the bell of the pipe. The minimum depth of cover over any pipe shall be thirty-six (36) inches as measured from the top of the actual outside diameter of the pipe at the bell to the finish grade. The Design Engineer shall submit to the District Engineer a written request for any required reduction in the minimum depth to thirty (30) inches, which may be allowed on a case by case, location by location bases only (A two (2) sack cement slurry cover will be required). A minimum clearance of eighteen (18) inches shall be as measured from the top of the actual outside diameter of the pipe at the bell to the bottom of subgrade or any special soil treatment section.
- A. If such trench width or depth is exceeded for any reason, the Contractor shall provide, at his own expense, improved bedding conditions, as approved by the Design Engineer and / or as directed by the District Engineer, to meet the load requirements of the changed conditions.
- 4.4 CUTTING OF PAVEMENT:** When the trench is in an existing paved area, the pavement shall be sawed or scored on neat lines parallel and equidistant from the trench centerline. Pavement between the lines shall be broken and removed immediately ahead of the trenching operations. Additional saw cutting shall be required after trench restoration as directed by the Agency having jurisdiction.
- 4.5 BRACING AND SHORING:** To insure the safety of workmen, and to protect and facilitate the work, sufficient bracing and shoring shall be installed in all excavations. The bracing and shoring shall comply with rules, orders, and regulations of the California Division of Industrial Safety. Failure to comply with any of the above mentioned rules, orders, and regulations shall be sufficient cause for, but shall not place any responsibility upon, the Engineer to immediately suspend the work. The Contractor shall be responsible for the adequacy of all shoring and bracing and compliance with law, and failure of the Engineer to suspend the work or notify the Contractor of the inadequacy of the shoring or bracing, or non-compliance with the law, shall not relieve the Contractor of this responsibility.
- A. Insofar as possible, sheeting shall not extend below the top of the pipe barrel. All sheeting, timbering, lagging, and bracing shall, unless otherwise required by any Engineer(s), be removed during backfilling, and in such a manner as to prevent any movement of the ground or damage to the piping or to the other structures. When the Engineer(s) requires that sheet piling, lagging, and bracing be left in place, such materials shall be cut off where designated and the upper part withdrawn. If sheet piling is utilized, it may be withdrawn, with compacting of backfill to proceed as piling is removed.

- 4.6 MAXIMUM LENGTH OF TRENCH OPEN:** At the end of each working day, there shall be no more than one hundred (100) feet of open trench, none of which shall be within twenty (20) feet of the limits of any private or public driveway or through-street unless otherwise authorized by the Agency having jurisdiction or as directed by Engineer. The remainder of the trench shall be backfilled and compacted, and when in street, traveled way, or driveway, opened to traffic as soon as possible.
- 4.7 SPECIAL FOUNDATION TREATMENT:** Whenever the bottom of the trench is soft or rocky or, in the opinion of the Engineer, otherwise unsuitable as a foundation for the pipe, the unsuitable material shall be removed to a depth such that when replaced with imported crushed rock or gravel (Approved engineered fabric may be required to be installed), it will provide a stable and satisfactory foundation. Unless otherwise directed by the Engineer, the imported crushed rock or gravel shall be graduated so that one hundred percent (100%) will pass the three quarter (3/4) inch sieve and not more than ten percent (10%) will pass the No. 8 sieve. An 18 inch rat slab may be required as directed by the District Engineer and/or Inspector. Whenever ground water occurs, the trench shall be kept reasonably free of water.
- 4.8 BEDDING:** Unless otherwise indicated on the drawings, in the Special Provisions, or as directed by the District, the pipe shall be placed on a firm, prepared bed of the following for the various utilities:
- 4.8.1** Water shall have imported sand with one hundred percent (100%) passing a one-half (1/2) inch sieve and not more than ten percent (10%) passing the No. 8 sieve, or as Directed by the District Engineer.
- 4.8.2** Sanitary Sewer shall have three quarter (3/4) inch maximum crushed rock with one hundred percent (100%) passing a one (1) inch sieve and not more than ten percent (10%) passing the No. 8 sieve.
- 4.8.3** Bedding shall extend at least four (4) inches below the pipe barrel or as indicated on the plans. The pipe shall be bedded uniformly throughout its entire length to a bearing width of at least sixty percent (60%) of the pipe's internal diameter. This bearing shall be achieved by shaping the bedding or by lightly "bouncing" the pipe to set it into the bedding. In lieu of shaping the bedding material, the Contractor may place bedding material to the spring line of the pipe, compacting it by shovel slicing, if gravel, or by light tamping if sand, to provide support. Care shall be used not to disturb the pipe.
- ◆ **Vitrified Clay Pipe (VCP)** shall have bell holes carefully excavated so that no part of the load is supported by the bells or coupling. Consolidation of material around and under the bell and couplings during bedding and back filling should be avoided, (Refer to the current NCPI, Clay Pipe Engineering manual).
- 4.9 INITIAL BACKFILL:** Unless otherwise indicated on the drawings, in the Special Provisions, or as directed by the District, the pipe shall be covered by a minimum of twelve (12) inches above the top of the bell of the pipe with of the following for the various utilities:
- 4.91** Water shall have imported sand with one hundred percent (100%) passing a one-half (1/2) inch sieve and not more than ten percent (10%) passing the No. 8 sieve, or as Directed by the District Engineer.
- 4.92** Sanitary Sewer shall have three quarter (3/4) inch maximum crushed rock with one hundred percent (100%) passing a one (1) inch sieve and not more than ten percent (10%) passing the No. 8 sieve.
- 4.93** The initial backfill shall be carefully placed so as not to disturb or damage the pipe, and shall be brought up evenly on both sides. It shall be placed in layers not exceeding four (4) inches in depth and hand tamped or shovel sliced to the spring line of the pipe. Additional backfill will then be placed to a depth sufficient to keep the pipe from floating.
- 4.10 COMPLETING BACKFILL:** Trench backfill material placed above the initial backfill shall be as approved by the Soils Engineer, and / or District Engineer, and / or as directed by the Agency having jurisdiction and shall be suitable for the approved method of compaction.

4.10.1 Relative compaction of all trench backfill shall be as shown on the accepted and signed documents. The method of compaction shall be suitable for the backfill materials used and the trench condition, and shall be as approved by the Soils Engineer and / or District Engineer. Refer to the specific pipe material manufacturers requirements for any additional backfill precautions.

A. Note jetting of sand backfill, shall only be used when approved by the Soils Engineer and / or District Engineer, and shall be accomplished with a rigid pipe not less than one and one-half (1 1/2) inches in diameter carrying not less than twenty (20) g.p.m. The pipe shall be extended to the bottom of the backfill layer and slowly withdrawn with water flowing in a manner which will accomplish the required compaction.

4.10.2 The trench backfill shall be compacted to the relative compaction shown on the District accepted and signed documents by an approved means, other than ponding or jetting, which will not damage the pipe or other nearby facilities.

4.10.3 In non-structural section areas, the top twelve (12) inches of the trench backfill shall be excavated material compacted to specified relative compaction by any approved means which will not damage the pipe or other nearby facilities.

4.10.4 Relative Density Compaction tests shall be as determined by the current ASTM D1557. The District Engineer or the agency having jurisdiction shall have the option of requiring the use of the current California Test 216 or 231. All compaction testing shall be performed only by a District-approved Soils Engineer, with all of the incurred cost of testing borne by the Contractor / Developer, at no expense to the District. The locations and the number of tests shall be determined by the District Engineer and / or as directed by the agency having jurisdiction.

- ◆ When directed by the District, the Contractor / Developer shall be responsible for submitting a resume of the proposed Soils Engineer to the District Engineer for acceptance.

4.11 RESTORATION OF SURFACING:

4.11.1 Restoration of surfacing shall conform to the requirements of the plans, these Specifications and other applicable portions of the Standard Improvements and / or as directed by the agency having jurisdiction.

4.11.2 Permanent asphalt paving material shall be Type "B", one half (1/2) inch maximum graduation, with AR 4000 penetration type asphalt emulsion and / or as directed by the agency having jurisdiction.

4.11.3 Where required by the Public Works Agency having jurisdiction, all trenches shall be temporarily patched within one (1) calendar day of the initial trench opening using either a cold mix asphalt or other approved material. This surfacing shall be maintained in good condition until replaced with permanent paving and / or as directed by the agency having jurisdiction.

4.11.4 In the event that street surfacing is damaged outside the neat lines of the trench, due to the Contractor's operations and / or failure to adequately maintain temporary patches, the Contractor shall remove and replace such damaged surface at his own expense. Such work shall be in conformance with associated trench restoration requirements herein specified and / or as directed by the agency having jurisdiction.

4.12 SPECIAL TREATMENT OF SOILS: When any Utility trench and / or equipment is located within any area scheduled to have Lime and / or Fly Ash, and / or any other special soils treatment, the following requirements shall apply:

4.12.1 If testing of any of the facilities is currently underway, we suggest that you stop all testing and begin only after treatment is completed. Testing for acceptance of any and all facilities shall only be performed after all soils treatment, all utility crossings have been installed and the sub-grade is finished and ready for the aggregate base to be placed.

4.12.2 All marking tape, twelve (12) inch minimum sand or crush cover over the utility and tracer wire shall be in place after the treatment. The District Engineer and / or the agency having jurisdiction may require field verification and shall require the repair and / or replacement of any and all damaged equipment.

4.12.3 A minimum clearance of eighteen (18) inches as measured from the bottom of the treatment section to the top of the bell of any utility line. However, maintaining eighteen (18) inches minimum clearance does not guarantee damage-free facilities.

- A.** Some approved projects cannot always meet this clearance requirement, therefore special precautions shall be taken, including but not limited to the careful removal of soil from the area around the utility, mixing the treatment, replacing the treated soil and re-compacting using extra care to not disturb the utility. Contractor / Developer shall submit a proposal for review and approval of the District Engineer and / or as directed by the agency having jurisdiction.

4.12.4 Valves, Manholes, Air / Vacuum Relief Assemblies and all other equipment shall be protected at all times from damage by soils treatment and all other heavy equipment. Any and all District facilities or equipment damaged during any phase of construction shall be replaced with an approved new item. All associated costs of the replacement shall be the responsibility of the Contractor / Developer and at no incurred costs to the District or the agency having jurisdiction.

BE ADVISED THAT THE CONTRACTOR / DEVELOPER WILL BE HELD RESPONSIBLE FOR ALL COSTS ASSOCIATED WITH THE TESTING AND / OR RE-TESTING AND INSPECTION OF FACILITIES DAMAGED DURING CONSTRUCTION ACTIVITIES.

SECTION 5
GRAVITY SEWER SYSTEM CONSTRUCTION

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SECTION 5

GRAVITY SEWER SYSTEM CONSTRUCTION

5.1 **GENERAL:** Construction, furnishing and installation of Sewer Mains and appurtenances shall be in accordance with these Improvement Standards and Standard Details, as directed by the District Engineer, and National Clay Pipe Institute Standards.

5.2 **DESIGN CRITERIA:**

5.2.1 **ENGINEERED CALCULATIONS** shall be provided based on the following and the applicable provisions of the current adopted County of Sacramento Public Works Agency, Improvement Standards, or as directed by the District Engineer:

A. **DESIGN FLOW CRITERIA: Design to the minimum criteria without consideration to the actual project conditions does not guarantee plan approval.** Design flow shall be calculated using the average of the upstream service area. Refer to the current adopted County of Sacramento Improvement Standards and Standard Construction Specifications and as directed by the District Engineer for the following:

- a) Area Served (by each Phase of construction and Ultimate)
- b) Development Density (Equivalent Single family Dwelling unit - ESD)
- c) Flow Generation (310 gpd/ESD).
- d) Infiltration (1200 gpd/Acre).
- e) Peaking factors (Refer to County of Sacramento Improvement Standards Section)
- f) Velocity Criteria (Refer to County of Sacramento Improvement Standards Section)
- g) Hydraulic Grade Line (Refer to County of Sacramento Improvement Standards Section)
- h) Friction Factor ($n=0.013$)

B. **PIPE CAPACITY, SLOPE, VELOCITY, AND SIZE:**

- a) Capacity in all cases shall be adequate to carry the design flow from the entire tributary area, even though said area may not lie within the project boundaries.
- b) Slope and Velocity shall be per the Manning's formula.
- c) The minimum size collector shall be eight (8) inches in diameter unless otherwise approved by the District Engineer.

C. **GROUNDWATER REQUIREMENTS:**

- a) A geotechnical report shall be required for all Sewer improvements in high groundwater areas.

5.3 **MATERIALS:** Gravity Sanitary Sewer Systems shall be as specified herein:

5.3.1 **GRAVITY MAIN SEWER** lines shall be Districts choice of **Vitrified Clay Pipe (VCP)** or **PVC-SDR-2600 Sewer Green**(or comparable). Main lines deeper than 15' and greater than 10" shall be C900 Sewer Green. Main lines up to 8 inches shall be SDR-2600. Main lines 10 inches or larger shall be C900 Sewer Green. Fittings shall be extra strength unglazed, bell and spigot pipe and shall conform to ASTM designation C-700. PVC fittings must conform to applicable ASTM standards. The pipe joints shall be of the mechanical compression type, conforming to ASTM designation C-425. Gravity main sewer lines required to be Ductile Iron shall be ANSI A21.51.

5.3.2 **GRAVITY SEWER LATERAL** lines shall be **SDR-2600 up to 8"** Wye connection to the main line. ABS (SDR 23.5) conforming to ASTM designation D 2751 shall be coupled to the SDR using a District-approved coupling once the lateral pipe invert is five (5) feet below finish grade. Gravity sewer

lines required to be Ductile Iron shall be ANSI A21.51. (Rev. 8/05 by GEL)

- 5.3.3** **ALL BURIED METAL PARTS** shall be Ductile Iron, Brass, Bronze, or Stainless Steel. All buried nuts and bolts for flanges and couplings shall be Type 304 stainless steel, and Core ten "T" bolts.
- 5.3.4** **ALL PIPE CONNECTORS** shall be made of a flexible Neoprene-EPDM material resistant to ozone, weathering, aging, and chemicals, including but not limited to acids, alkalis, animal and vegetable fats, oils and petroleum products. Each connector shall have series 304 stainless steel bands and screw assemblies.
- 5.3.5** **LOCATING DEVICES** shall consist of the following:
- A. Marking tape shall be reflective, a minimum of six (6) inches wide, green in color, marked "**BURIED SEWER BELOW**" and shall be placed in all lateral service trenches, twelve (12) inches above the pipe, installed from the main line to the service clean out to grade. Marking tape is also required over any main line which has less than five (5) foot of cover to finish grade. The District shall approve all marking tape prior to installation.
- 5.3.6** **SUBSTITUTION** proposals shall include sufficient information needed for a comparison with the specified product, the projected cost difference between the specified product and substitution product, and shall include the estimated cost for the District Engineer's time to review and provide acceptance or rejection of said substitution product(s).
- A. Any product(s) Substitution proposed by the Contractor / Developer to be included in the construction shall be submitted for review by the District Engineer a minimum of **five (5) working days** prior to the projected installation date.
- 5.3.7** **ACCEPTANCE OF MATERIALS** shall be subject to strength and quality testing in addition to inspection of the completed product. Acceptance of installed piping systems shall be based on inspection and leakage tests as specified hereinafter.

5.4 **INSTALLATION OF SANITARY SEWER:**

- 5.4.1** **MAIN LINE** pipe shall be **SDR-2600/C900** (as designated in 5.3), laid in a trench excavated to the lines and grades established by the Design Engineer, which have been reviewed, approved and signed by the District Engineer. The recommended practice for installing VCP shall be per ASTM D3034.
- A. The bottom of the trench shall be graded and prepared to provide a firm and uniform bearing throughout the entire length of the pipe. The pipe shall have a minimum three (3) inches (as measured under the bell of the pipe) of three-quarter (3/4) inch crushed rock bed, carefully shaped to fit the bottom of pipe before the pipe is lowered into the trench.
- ◆ **SDR-2600/C900** shall have holes carefully excavated so that no part of the load is supported by the bells or coupling. Consolidation of material around and under the bell and couplings during bedding and back filling should be avoided, refer to the NCPI, Clay Pipe Engineering manual.
- B. All pipe joints, boots and connectors shall be clean and lubricated during assembly to provide a leak free connection.
- C. The three-quarter (3/4) inch crushed rock shall extend to the pipe spring line and shall be shovel sliced to provide uniform and even support of the entire section of pipe. All SDR/C900 shall be covered with a minimum of twelve (12) inches of three-quarter (3/4) inch crush over the top or as directed by District Engineer.
- D. When the separation between SDR/C900 sewer main and any other utility is between six (6) inches and twelve (12) inches, ductile iron pipe with compression couplers shall replace the SDR/C900 for a minimum of twenty-four (24) inches each side of the crossing with a two (2) sack slurry placed between utilities. In no case shall the clearance be less than six (6) inches.
- E. Any sewer that is in or will be in the water table will be required to be burrito wrapped. Mains not in the water table shall have fabric separation.

5.4.2 SERVICE LATERAL pipe shall be **SDR/C900** main line connection Wye and laid in a trench excavated to at least a minimum slope of one-quarter (1/4) inch per foot. ABS shall be coupled to the SDR/C900 lateral once the pipe invert is five (5) feet below finish grade. The top of the pipe shall be a minimum of eighteen (18) inches below the road subgrade or treated soil section, or as directed by the District Engineer. In no case shall the top of the lateral be less than thirty-two (32) inches below any finish grade.

- A. The bottom of the trench shall be graded and prepared to provide a firm and uniform bearing throughout the entire length of the pipe. The pipe shall have a minimum four (4) inches (as measured under the bell or coupling of the pipe) of clean sand bedding, carefully shaped to fit the bottom of pipe before the pipe is lowered into the trench.
- B. When the separation between sewer service lateral and any other utility is between six (6) inches and twelve (12) inches, Ductile Iron pipe with compression couplers shall replace the pipe for a minimum of twenty-four (24) inches each side of the crossing with a two (2) sack slurry placed between utilities. In no case shall the clearance be less than six (6) inches.

5.5 MANHOLES: All Manholes to be maintained by the District shall be Armorock Polymer Concrete or proven equal. All others for sanitary sewers shall be constructed of a pre-cast reinforced concrete base, or cast-in-place reinforced concrete base with prior approval of the District. All manhole barrels, risers, concentric cones, flat tops and grade rings shall be pre-cast reinforced concrete and shall conform to ASTM Designation: C478 with the additional requirement that the cement used shall be Type V sulfate resistant. Sewer manhole sections shall be manufactured without the provision for steps. Joints for the barrel section shall be tongue and groove. Manholes shall conform to these Improvement Standards and Standard Details.

5.5.1 Armorock Polymer Concrete manholes (or proven equal) shall conform to ASTM C478. Detail sheets and further specifications can be found at Armorock.com

5.5.2 Refer to Section 8, Force Mains, of these Improvement Standards for special finish requirements of Force Main receiving manholes (transition manholes from force main to gravity).

5.5.3 PRE-CAST reinforced concrete bases, barrels, tapered sections, concentric cones, flat tops, and grade rings, sections shall conform to the Caltrans Standard Specifications except as herein provided.

- A. The pre-cast base shall be placed on a minimum of four (4) inches of three-quarter (3/4) inch crush rock bed.

5.5.4 CAST-IN-PLACE shall be used on a case by case basis as approved by the District Engineer. Reinforced portions of manholes shall be constructed of Class A concrete as specified in Section 90 of the State Specifications. Bar reinforcing steel shall be furnished and installed in accordance with Section 52 of the State Specifications. **The District recommends the use of pre-cast manhole bases with flexible boot connectors for all Sanitary Sewer manholes.**

- A. The base thickness and reinforcement shall be as designed by the Design Engineer.
 - a) For manholes extending to a finish depth of fourteen (14) feet, a minimum of eight (8) inches with a minimum of one (1) mat of number four (#4) reinforcement bars each way.
 - b) For manholes extending to a finish depth of greater than fourteen (14) feet, a minimum of twelve (12) inches with a minimum of two (2) mats of number four (#4) reinforcement bars each way.
- B. The bottoms of manholes, as shown on the plans, shall be neatly shaped to match the pipe inflow and outflow and shall be brushed to a smooth finish with a wet brush.
- C. All work shall be cured for a minimum period of ten days (or as directed by the Design Engineer) after being placed and shall be protected from injury.
- D. **All cast-in-place bases shall be inspected during construction, shall be properly cured, and accepted by the District Engineer before the stacking of any barrels or cones.**

5.5.5 CAST-IN-PLACE SADDLE MANHOLES shall be reinforced concrete and the top half of the pipe shall be removed after the base has properly cured.

- 5.5.6** No pipe shall project more than 0.17 feet into a manhole (except for drop inlet pipes) and in no case shall the bell of a pipe be built into the wall of a manhole or structure.

- 5.5.7** Each pipe shall have a resilient connection to the manhole conforming to ASTM C923 such as KOR-N-SEAL, A-LOK, or equal.
- 5.5.8** All joints in the sewer manhole shaft shall be thoroughly cleaned and sealed watertight with a preformed joint sealant gasket material conforming to ASTM Designation: C923. Kent-Seal, Ram- Nek or approved equal. The joint sealant gasket material shall match the manhole wall thickness.
- 5.5.9** The inside and outside of all sewer manholes shall be sealed as needed to provide a watertight environment and pass the required vacuum testing as specified hereinafter. Armorock Polymer Concrete or equal does not require an interior or exterior coating.
- A.** All manholes shall have the outside of all joints and other openings (including all pin lift holes and all visual imperfections to the outside surface) sealed by the application of an approved flexible six (6) inch minimum mastic tape material, (Henry – RUB'R-NEK or approved equal). The joint tape shall be applied prior to the placement of any backfill material and prior to any testing. A bitumastic material shall be applied around all pipe penetrations of the manhole to provide a watertight seal.
 - B.** Subject to groundwater conditions, the District may require the application of a layer (approximately 1/8" thick) of a waterproofing bitumastic material to the entire exterior surface of any manhole prior to backfilling.
 - C.** All manholes shall have the inside sealed prior to any testing by applying an approved grout which meets or exceeds ASTM CL107 Grade B, and AASHTO T260, mixed to a plastic consistency. All lift holes and all visual imperfections to the inside surface, including joints shall be sealed and brushed to a smooth finish with a wet brush.
 - D.** Subject to ground water conditions, the District may require the application of an interior coating such as: Tamms-HEY'DI, Koester NB1, Tegraproof, or Xypex, to seal the interior surface of any manhole to limit the infiltration of ground water.
- 5.5.10** **The District shall not accept any manholes with any ground water infiltration. Further, the Contractor shall, at no cost to the District, repair any manhole which develops any water infiltration problem after testing for a minimum period of not less than one (1) year after all subdivision improvements are accepted or as directed by the District.**
- 5.6** **BACKFILLING:** Backfilling shall be brought up to subgrade prior to testing. Completing backfill prior to testing shall be per Section 4 of these Improvement Standards. In no case shall there be any placement of permanent pavement prior to successful completion of the test. It shall be the responsibility of the Contractor to locate and repair at his own expense any defective joints, fitting or leaks, until the results of the tests are satisfactory.
- 5.7** **TESTING AND CLEANING OF SEWER LINE:** The sanitary sewers shall be tested between manholes or between manholes and cleanouts by the following method. All testing, except for Vacuum testing, shall be done after all utilities within the roadways (sanitary sewer, storm drain, water, and dry utilities) have been trenched, backfilled and subbase of the roads has been achieved. Tests for final acceptance shall be made in the following order.
- 5.7.1** Contact a minimum of two (2) Working Days prior to any and all testing and / or observations to schedule an inspection Vacuum test and acceptance of the Sanitary Sewer manholes and lines.
 - 5.7.2** Clean and Ball Flush or Hydro-Vac all manholes and sewer lines to be accepted, as needed. All construction debris shall be removed from the lines and manholes before any testing or Closed Circuit Television (CCTV).
 - 5.7.3** Low-pressure test of SDR/C900 shall be only between accepted manholes and all laterals directly out of the accepted manholes.
 - 5.7.4** CCTV all sewer mains, manholes and view all laterals from main line (the District shall be present during testing). Additional CCTV of any lateral services shall be as directed by the District.

5.7.5 Additional cleaning and / or Ball Flushing shall be required of all manholes and sewer lines to remove all construction debris prior to the final acceptance of the project.

5.8 **VACUUM TESTING OF MANHOLES:** All Sanitary Sewer manholes shall be Vacuum tested per ASTM C1244-93 and meet the following requirements prior to acceptance. If the sewer manhole fails the test, the manhole shall be repaired by the Contractor and re-tested. The District may also require any manhole to be re-tested using this method if there is reason to suspect that the sewer manhole has been disturbed during any construction operation or if ground water infiltrates into the manhole. In order to prepare a sewer manhole for this test, the following shall be accomplished:

- 5.8.1 **NO BACKFILL** shall be placed around any manhole until the outside surface of the manhole is inspected and accepted by the District.
- 5.8.2 All lift holes, connections and inside and outside joints shall be sealed watertight. All grout placed on any of the inside surfaces of the manhole shall be brushed to a smooth finish with a wet brush.
- 5.8.3 The manhole must be drained of all liquids. No amount of water shall be allowed inside of the manhole during the vacuum test.
- 5.8.4 All pipes entering the manhole shall be plugged, taking care to securely brace the plug from being drawn into the manhole.
- 5.8.5 The test plate shall be installed and sealed in accordance with the manufacturer's recommendations.
- 5.8.6 A vacuum of ten (10) inches Hg (mercury) shall be drawn, the valves closed, and the vacuum pump shut off.
- 5.8.7 With the valves closed, the time shall be measured for the vacuum to drop to nine (9) inches Hg (mercury). The minimum test time to drop one (1) inch Hg shall be not less than sixty (60) seconds.

The manhole shall pass if the time is greater than the times listed in the following Table 5.7-1 for particular manhole sizes or as directed by the District Engineer.

Table 5.7-1	
Minimum Vacuum Pass Times	
Manhole Size (Inches)	Minimum Time to drop to 9" Hg (seconds)
48	60
54	67
60	75
72	90
84	105
96	120

5.8.8 The Contractor shall supply the vacuum equipment, plugs, acceptable oil filled gauge and a minimum of one spare gauge, along with any necessary ladders or catwalks and safety equipment to provide the inspector with access to view the test gauge. In addition, the District may compare the Contractor's gauge with a District-owned gauge at any time.

5.9 **LOW PRESSURE AIR TEST:** The gravity sewer piping shall be tested in accordance with the current adopted National Clay Pipe Institute Low Pressure Air Test for Sanitary Sewers (Procedures and Tables). All mains and service laterals shall be tested and passed, including service laterals connected directly to a manhole. The minimum duration of time for passage of any segment of the sewer system shall be as indicated within the aforementioned tables, but never less than thirty (30) seconds.

- 5.9.1** The maximum reach to be tested shall be the reach between two consecutive vacuum tested and accepted manholes.
- 5.9.2** The Contractor shall supply the compressor, plugs, necessary piping, and acceptable oil filled gauge and a minimum of one spare gauge, along with any necessary ladders or catwalks and safety equipment to provide the inspector with access to view the test gauge. In addition, the District may compare the Contractors gauge with a District-owned gauge at any time.
- 5.10 CLEANING AND BALL FLUSHING:** Prior to testing and before the sewer lines are acceptable for CCTV, they shall be cleaned, ball flushed, and / or Hydro-Vac removing all foreign matter from all lines and manholes to the satisfaction of the District Engineer. Suitable traps shall be placed in the manholes during cleaning to intercept large material. Such material shall be removed from the line prior to any CCTV.
- 5.11 CLOSED CIRCUIT TELEVISION INSPECTION:** After completely cleaning and flushing all lines, introduce approximately twenty (20) gallons of water, thirty (30) minutes to one (1) hour prior to CCTV. The water is to be introduced at each of the first manholes to have CCTV inspected. The first manhole shall be the highest invert manhole within each area being CCTV inspected. It shall follow the slope downstream to the final manhole within the area. Except at intersecting manholes, the inspection shall again go to the highest invert manhole and proceed to the intersecting manhole before proceeding downstream. The following shall apply to CCTV unless directed otherwise by the District Engineer:
- A.** The Contractor shall contact to schedule with District, a minimum of two (2) Working Days prior to the CCTV to coordinate and have the District Engineer and / or Inspector present during all times of the CCTV recording.
 - B.** The Contractor / Developer shall submit a resume from the CCTV Company for review and acceptance prior to any CCTV. The Contractor / Developer shall supply the CCTV services as required to achieve acceptance of the final pipeline and include said cost within their original bid or as directed by the contract or the District Engineer.
 - C.** The current adopted County of Sacramento requirements for Closed Circuit Television (CCTV) operations shall apply, unless otherwise directed by the District.
 - D.** The CCTV shall be recorded on the format, and printed as specified by the District Engineer. CCTV Company shall have on site during the session all the equipment needed to record, and print all reports, (this shall include but not be limited to, extra printer cartridges and paper, along with extra blank devices of the format required by the District). Only one (1) day and / or project shall be placed on any recording device, and all reports shall be delivered to the District before the end of each workday of CCTV, but no later than two (2) working days, unless otherwise directed by District Engineer.
 - E.** Camera equipment shall have adjustable illumination, and be in solid state color with a pan and tilt, and have adjustable focal distance. It shall be fitted with a target sized per Table 5.11-1 below to a maximum of one (1) inch in outside diameter or as directed by the District Engineer for all pipes. The center of the one (1) inch target shall be of a contrasting color, highly visible during the CCTV recording. The target shall be attached to the front of the camera and in full view at all times. The target attachment rod shall be sized, constructed, and connected to the camera equipment in a manner, which limits the obstruction of the view.
 - F.** Begin recording with a view of the inside of each manhole as viewed from the top of the manhole looking in.
 - G.** Lower the equipment into the manhole. Equipment set footage shall be noted from the centerlines of the manhole to the focal point in the direction of equipment travel. The camera shall travel at a speed not to exceed thirty-two (32) feet per minute or as directed by the District. The Contractor shall verify accuracy of all CCTV footage counters.

- H. The equipment shall slow down and stop to pan as needed to view, identify and document each of the following:
 - a) Inside each service connection.
 - b) Joint separation or Offset joint.
 - c) Damage joint seals.
 - d) Alignment problem.
 - e) Cracked or damaged pipe, including lined or point repaired pipe.
 - f) Debris in the line and/or laterals.
 - g) Identifiable all sags or high points which exceeds Table 5.11-1.
 - h) Root intrusion.
 - i) Inflow or Infiltration.
- I. If the Camera fails to pass through the line because of a blocked section, the inspection shall be temporarily suspended. The Contractor shall clear the obstruction as directed by the District, and then re-started from the beginning or resume the inspection, as directed by the District. The finished Inspection Report shall run from centerline of manhole to centerline of manhole without any blockage.
- J. Additional CCTV of the service laterals is as directed by the District.

5.12 PIPELINE ACCEPTANCE CRITERIA: All new and rehabilitated pipelines shall be inspected in accordance with the requirements of this Section 5, or as directed by the District Engineer. The recorded CCTV shall be delivered to the District upon completion of the inspection, but in no case no later than two (2) working days after. The CCTV recording shall become the property of the District. The District shall review the CCTV inspection records and printout within ten (10) working days and will notify the Contractor if:

5.12.1 The review revealed a satisfactory installation, or if the review revealed deficiencies.

- A. The following deficiencies in sanitary sewer installation that are identified by the Inspector and / or by television inspection shall be corrected by the contractor at no cost to the District:
 - a) Excess joint separation.
 - b) Excessive Offset of joints.
 - c) Excess joint deflection of more than the manufacturer's recommendation.
 - d) Cracked or damaged pipe, including liner pipe.
 - e) Debris in line and /or laterals.
 - f) Identifiable sags or high points for the section tested is more than 1/20 the pipes inside diameter to a maximum of one inch as specified in the following Table 5.11-1:

Table 5.11-1	
Inside Diameter	Maximum Sag or High Point
Inches	Inches
4	1/4
6	3/8
8	1/2
10	1/2
12	5/8
15	3/4
18	7/8
21 or Greater	1

- 5.12.2** All other criteria as set by OPUD Standard Specifications and/or Special conditions shall apply as directed by District Engineer.
- 5.12.3** The Contractor / Developer will be notified by the District of any deficiencies revealed by the Inspector or by the television inspection that will require repair. The Contractor / Developer has the option to request a meeting with the District Engineer to review the CCTV report.
- 5.12.4** Upon completion of the required corrective actions, the sewer will be re-televised in accordance with this Section. This process shall be repeated until the review of the recorded television inspection reveals a satisfactory installation.
- 5.12.5** **REFERENCE POINTS** information file indicating the location of all manholes and main line COTG shall be submitted to the District for acceptance as one of the following:
- A.** GPS reference file (file format shall be as directed by the District),
 - B.** Red noted set of plans indicating the approximate depth to the top and a minimum of three (3) reference point items that are all protected from damage and / or loss during the construction.
- 5.12.6** **NOTE:** The District will issue a letter to the Contractor, Developer, and Yuba County Public Works only after Construction Acceptance of all Sewer and Water facilities for the specific portion of the project or its entirety and the District has accepted the RP information provided by the Contractor. All letters of Acceptance made relative to any project does not relieve the Contractor / Developer from compliance with the requirements of the District or of any other agency having jurisdiction.

5.13 **CONNECTION TO EXISTING FACILITIES:**

- 5.13.1** The Contractor / Developer shall be responsible for providing the District with a preliminary observation report showing the basic condition of the sewer system downstream of the proposed point of connection, as directed by the District.
- 5.13.2** When improvement plans require connection to an existing facility which will require bypassing or storage of existing flows, a note shall be placed on the plans which provides an estimate of the existing flow to be bypassed (in gpm), or the time between which the flow may be stopped. The note shall also require the contractor to contact the District at least two (2) working days prior to initiating the bypass/stoppage operation so the temporary facilities and equipment can be evaluated for adequacy. Where operation will be accomplished on a major trunk or interceptor, submittal of a work plan for review may be required prior to initiation of the operation.
- 5.13.3** New Sanitary Sewer facilities will not be allowed to be put into service until written authorization is obtained from the District.

- 5.13.4** During all phases of construction, Contractors, Developers and Owners shall be held responsible for controlling and preventing the introduction of any infiltration, drainage, construction debris, or hazardous materials (including, but not limited to paints, solvents, petroleum products) of any quantity into any portion of the District's facilities by means of plugs and / or trapping devices.
- A.** The Developer / Contractor and / or Owner shall be responsible for installation, inspections, maintenance, and cleaning of all plugs, trapping devices, and associated equipment. All devices shall be inspected not less than a minimum of once a week.
 - B.** The Developer / Contractor and / or Owner shall be responsible for the sizing of all plugs and trapping devices to fit properly within each of the sewer channels of all manholes leaving all construction zones.
 - C.** All plugs and trapping devices shall be provided with all necessary restraining and safety devices needed to limit movement.
 - D.** All plugs and trapping devices shall remain in place until otherwise directed by the District and shall only be removed in the presence of the District.
 - ◆ Examples of some items, which have been found in the past, include: Drainage water with excess silts, sediments, and rocks, Plastic tarp, Building Paper, Building insulation, Wood, Stucco, Paint, and Plumbing products. These items tend to become lodged within a manhole or even in the main line between the manholes, all of which cause blockage within the system. Such items have also been found in sewer lift station facilities.

5.13.5 All associated costs, fees, and fines for the removal and / or cleaning of all infiltration, drainage, construction debris, or hazardous materials from the system will be billed directly to the Developer, Contractor, and / or Owner responsible for allowing them to enter the system. These costs will include, but may not be limited to, Sewage Pump truck, Hydrovac truck, or other cleaning and inspection equipment, as well as the associated costs for the District to observe the cleaning. It will also include all incurred repairs of associated with any debris reaching a Lift Station or Waste Water Treatment Facility, damaged equipment.

5.14 REHABILITATION OF EXISTING FACILITIES:

5.14.1 PRE-REHABILITATION CCTV INSPECTION. The report shall be clearly labeled as "Pre-Rehabilitation CCTV Inspection". During the Pre-Rehabilitation CCTV Inspection, the camera shall stop at all significant observations to ensure a clear and focused view of the pipe condition. At a minimum, the report shall contain the following:

- A.** A clear view of a minimum of 75% of the pipe wall.
- B.** A list of "significant observation", including, but not limited to: services, blockages, cracks, roots, material deposits and / or debris, offsets, infiltration, changes of materials and any structural decay.

If the camera cannot pass through the entire section of pipeline (blockage, etc.), the Contractor shall reset the equipment at the downstream manhole and attempt to inspect the section of pipe from the opposite direction. If the camera again fails to pass through the blocked section, the video inspection shall be temporarily suspended and the District notified. The Contractor shall clear the obstruction as directed by the District, and then resume the inspection. The finished Inspection Report shall run from centerline to centerline of manhole.

5.14.2 MATERIALS. All proposed products, methods and material shall be considered on a case by case basis and shall be submitted to the District for approval prior to placement. All products, materials, and workmanship shall be provided with guarantee and warranty as directed and approved by the District (Refer to Section 9 of these Standards).

- A.** Broken, cracked or damaged pipes shall be repaired only as directed and approved by the District. When acceptable, an approved sealant material shall be injected from the inside of the pipe to the exterior to stop infiltration. Once infiltration has been stopped, an approved liner sleeve material shall be installed.

- B.** All installation work shall be per the manufacturer's written product specification and shall be performed by the manufacturer's certified / authorized representative.
- 5.14.3 REHABILITATION TESTING AND ACCEPTANCE** shall be in accordance with these Improvement Standards, for new construction or as directed by the District.

SECTION 6
FORCE MAIN SEWER SYSTEM CONSTRUCTION

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SECTION 6

FORCE MAIN SEWER SYSTEM CONSTRUCTION

- 61** **GENERAL:** Construction, furnishing and installation of Sewer Force Mains and appurtenances shall be in accordance with these Improvement Standards and Standard Details, as directed by the District Engineer.
- 62** **DESIGN CRITERIA:**
- 621** **ENGINEERED CALCULATIONS** shall be provided based on the following and the applicable provisions of the current adopted County of Sacramento Public Works Agency, Improvement Standards, or as directed by the District Engineer:
- A. Applicable Standards:**
- a) Environmental Protection Agency Regulations.
 - b) Laws, codes and standards of the State of California, Department of Health Services.
- B. DESIGN FLOW CRITERIA:** Design flow shall be calculated using the average for the upstream service area. Refer to the current adopted County of Sacramento Improvement Standards and Standard Construction Specifications for the following:
- a) Flow Generation output from Lift Stations into force mains (Refer also to Section 7 of these standards).
 - b) Peaking factors from Lift Stations into force mains (Refer also to Section 7 of these standards).
 - c) Design Velocities shall be 2 FPS to 5 FPS.
 - d) Friction Factor.
 - e) Designed operating pressure as directed by the District Engineer.
- C. PIPE CAPACITY, VELOCITY, AND SIZE:**
- a) Capacity in all cases shall be adequate to carry the design flow from the entire tributary area, even though said area may not lie within the project boundaries.
 - b) The minimum size shall be eight (8) inches in diameter unless otherwise approved by the District Engineer. Preferred force main sizes are 8", 10", 12", 18", & 24".
 - c) Maximum 45° bend fittings.
- 622** Pigging launch and retrieval stations shall be required on Force Mains in excess of 1,000 Feet.
- 623** Pipe shall only be designed with gate valves. The maximum spacing of valves shall be three thousand (3000) feet, or less as needed to allow for future repairs and acceptance testing of the facility.
- 624** Discharge manhole shall be designed to only receive materials from the force main and shall maintain liquids within the force main piping in order to contain the sewer gases within the force main piping.
- 625** No sanitary sewer service lateral shall be connected directly to any discharge manhole or closer than twenty (20) feet downstream.
- 626** Discharge manhole shall be specially coated per these Improvement Standards and as directed by District Engineer. If a polymer concrete manhole is used, no coating will be required.
- 627** The design of force main lines shall be closely coordinated between the Design Engineer and the District Engineer.

63 MATERIALS: Sanitary Sewer Force Main Systems shall be as specified herein:

- 631 PIPE** - All piping shall be approved by the District and shall conform to the requirements of the current A.W.W.A. Standards for Water Pipe with a minimum design pressure of one hundred fifty (150) psi.
- A. Ductile iron with a ceramic interior surface liner and a seal coating providing an approved sewage resistant special coatings.
 - B. C-900 DR-18 / C-905 DR-25 PVC (polyvinyl chloride) (green in color) and marked "**SEWER FORCE MAIN**" pipe with reflective tape.
- 632 FITTINGS** - All bends, elbows, tees, crosses, and special fittings shall be approved by the District and shall be in complete conformance with the applicable A.W.W.A. Standards.
- A. All fittings shall be Push-On, Mechanical type, or Flanged ends designed for a minimum working pressure of two hundred fifty (250) psi.
 - B. All buried metal parts shall be brass, bronze, cast iron, ductile iron, or stainless steel.
 - C. All metal parts shall be provided with approved ceramic sewer resistant coatings. All direct burial metal materials and / or equipment shall be sealed by wrapping with a minimum eight (8) mil polypropylene film lapped as needed to provide a seal and taped with a minimum of three (3) wraps of a ten (10) mil HDPE tape, or as directed by the District. Contractor / Developer has the option to provide the District Engineer with a stamped and signed Soils Report, which indicates if the soils conditions are suitable for placement without a polyethylene wrap.
- 633 ALL BURIED METAL PARTS** shall be Ductile Iron, Brass, Bronze, or Stainless Steel. All buried nuts and bolts for flanges and couplings shall be Type 304 stainless steel, and Core ten "T" bolts.
- 634 ALL PIPE CONNECTORS** shall be made of a flexible Neoprene-EPDM material resistant to ozone, weathering, aging, and chemicals, including but not limited to acids, alkalis, animal and vegetable fats, oils and petroleum products. Each connector shall have series 304 stainless steel bands and screw assemblies.
- 635 VALVES:** Types of valves to be installed shall be Mueller or approved equal. All valves shall open to the left (counter-clockwise), and be furnished with flange, or mechanical joint using an elastomeric-gasket seal. Valve shall bear the registered certification mark of the AWWA. All installed valves shall operate smoothly with no more than twenty-five (25) ft-lbs. torque. Valves operating at torques greater than twenty-five (25) ft-lbs. require approval by the District. All valves shall have two (2) inch square operating nuts. All sanitary sewer force mains shall only be equipped with gate valve assemblies.
- A. **Gate Valves** shall be ductile iron body, with bronze stem nuts, glands and bushings, non-rising stem (NRS), working water pressure of two hundred (200) psi, conforming to the requirements of AWWA Standard C509. Resilient-seated gate valves shall have resilient seats bonded or mechanically attached to the gate.
- 636 VALVE BOXES** shall be traffic rated, polymer concrete with composite lid. Covers shall be marked "**SEWER**" and shall have a loose fit in the box.
- A. Valve boxes shall have risers installed as needed to adjust to grade after paving completion, unless otherwise directed or approved by the District Engineer.
 - a) Valve risers shall be installed prior to back fill and shall extend from below the valve nut to a point eighteen (18) inches \pm above construction grade and shall be firmly supported and maintained, and be centered and plumb over the wrench nut of the valve assembly.

- b) Risers shall consist of a continuous section (having no splices unless approved by the District Engineer) of an eight (8) inch C-900 DR 18 PVC pipe (green for sewer force mains) and should be temporarily covered with a minimum formed 22 gauge GSM lid to limit debris from filling the riser.
- c) When trimmed to below the road subgrade prior to the placement of Aggregate Base and / or Paving, a temporary cover consisting of a minimum formed 22 gauge GSM lid to limit debris from filling the riser shall be installed.
- d) The center of all valve nuts shall be referenced prior to being covered with any materials.
- e) The valve riser shall be raised to finish grade per the Standard Detail. Unless approved by the District Engineer, all valve nuts which are forty two (42) inches or less in depth shall be continuous (no splices). When the valve nut is more than forty two (42) inches, the risers shall be extended by a splice consisting of a continuous section of proper fitting C- 900 DR 18 PVC pipe and with either of the following:
 - i) District approved proper fitting coupling
 - ii) An integral bell joint (gasket maybe removed)

6.37 **LOCATING DEVICES** shall consist of the following: (The District shall approve all marking devices prior to installation.)

- A. **MARKING TAPE** shall be reflective, a minimum of six (6) inches wide, green in color, marked "**SEWER FORCE MAIN BELOW**" and shall be placed twelve (12) inches above the pipe.
- B. Except when located within steel casing, all sewer force main lines not marked **SEWER FORCE MAIN** on the exterior of the pipe shall have identification materials attached directly to the pipe. These materials shall be marked "**SEWER FORCE MAIN**" and shall consist of one or more of the following:
 - a) Green marking tape continuously wrapped around the exterior (at a minimum of thirty (30) inches on center)
 - b) Green adhesive marking tape or
 - c) Green colored polypropylene sleeve
- C. **TRACING WIRE**: All runs of sewer force main pipe shall have a No. 10 gauge UF-rated solid copper wire with plastic insulation, which shall be laid along the top of the pipe to facilitate locating the pipe at a later date. Secure wire to top of pipe with an accepted tape or other approved means at ten (10) feet on center maximum spacing. The wire shall be stubbed up for above grade access within each valve box, but should never exceed six-hundred (600) lineal feet along the force main. If valve spacing is greater than six-hundred (600) feet, raise and secure the tracing wire through a conduit into an approved "Christy" G-5 box (or equal) as shown on Standard Detail Sheet 6-18.
- D. **LOCATION STAKES**: Force Mains in unpaved areas (as directed by Engineer) shall be marked every five hundred (500) lineal feet with a four (4) inch wide by five (5) foot tall, green composite utility marker having a decal stating: "**CAUTION FORCE MAIN - OPUD**". Appurtenances (valves, ARV's, test stations, etc.), and angle points shall also be marked.
- E. **MAINS IN LANDSCAPED AREAS**: Shall be identified as directed by the District Engineer and/or District Inspector.

6.39 **SUBSTITUTION** proposals shall include sufficient information needed for a comparison with the specified product, the projected cost difference between the specified product and substitution product, and shall include the estimated cost for the District Engineer's time to review and provide acceptance or rejection of said substitution product(s).

- A. All product(s) Substitution proposed by the Contractor / Developer to be included in the construction shall be submitted for review by the District Engineer a minimum of **five (5) working days** prior to the projected installation date.

639 **ACCEPTANCE OF MATERIALS** - Acceptance shall be subject to strength and quality testing in addition to inspection of the completed product. Acceptance of installed piping systems shall be based on inspection during construction and on the leakage test as specified hereinafter.

6310 **REFERENCE POINT** information indicating the location of all valves shall be submitted to the District for acceptance in the following forms:

- A. GPS reference file (file format shall be as directed by the District),
- B. Red noted set of plans indicating the approximate depth to the top and a minimum of three (3) reference point items that are all protected from damage and / or loss during the construction.

6311 **NOTE:** The District will issue a letter to the Contractor, Developer, and Public Works only after Construction Acceptance of all Sewer and Water facilities for specific partition of the project and the District has accepted the RP information provide by the Contractor. All letters of Acceptance made relative to any project does not relieve the Contractor / Developer from compliance with the requirements of the District or of any other agency having jurisdiction.

64 **INSTALLATION:**

641 Force mains shall be installed in the locations shown on the plans. The trench shall be of sufficient depth so as to provide thirty-six inches (36") minimum cover over the pipe from the finished grade and shall be to the grades designated on the plans. All installations shall conform to the manufacturer's written specifications.

- A. Pipes shall be handled in such a manner as to avoid damage to the machined ends. When damaged pipe cannot be repaired to the Engineer's satisfaction, it shall be removed from the job. The interior of all pipe and accessories shall be kept free from dirt and foreign matter at all times.
- B. Proper implements, tools and facilities, satisfactory to the Engineer, shall be provided and used for the safe and efficient execution of the work. All pipe fittings, valves, and accessories shall be carefully lowered into the trench by means of derrick, ropes, or other approved equipment, in such a manner as to prevent damage to the pipe and fittings. **Under no circumstances shall any pipe be dropped or dumped into the trench.** The pipe and accessories shall be inspected for defects prior to lowering into the trench. Any defect, damage, or unsound pipe shall be repaired or replaced. All foreign matter shall be removed from the interior of the pipe before lowering into position in the trench. Pipe shall be kept clean by means approved by the Engineer during and after placement.
- C. Pipe shall be installed per manufacturer written instructions and specifications. Pipe shall not be deflected either vertically or horizontally in excess of that recommended by the manufacturer of the coupling. When pipe laying is not in progress, the open ends of the pipe shall be closed watertight by an approved means to prevent entrance of foreign materials into the line. Whenever water is ejected from the interior of the pipe, adequate backfill shall be deposited on the pipe to prevent floating. Any pipe that has floated shall be removed from the trench and re-laid as directed by the Engineer. No pipe shall be laid in water or when, in the opinion of the Engineer, the trench and / or weather is unsuitable for such work.
- D. Protection for buried Ductile Iron Pipe, Connectors, and Adapters: All buried Ductile Iron Pipe, Connectors, and Adapters shall be protected with 10 mil polyethylene film in accordance with AWWA C105. Continuously seal seams and overlaps with approved PVC tape. Gather excess polyethylene to top so as not to block backfill material from getting under the bottom of the pipe.
- E. Contractor shall maintain a clean, controlled, working environment during all phases of the installation of all of the sewer transmission assembly, preventing construction materials from becoming future blockage. All valves must be closed until testing and open pipe ends must be capped by a District-accepted method.

- 642** **VALVE EXTENSIONS:** All valve assembly nuts which are deeper than forty-two (42) inches below finish grade shall be fitted with a District approved steel valve extension, sized as needed to raise the access to within thirty six (36) inches \pm below finish grade, or as directed by the District Engineer. Refer to Standard Details.
- 643** **PLUGS:** Standard plugs shall be inserted into the bells of all dead-end fittings. Spigot ends of fittings and plain ends of pipe shall be capped. Plugs and caps shall be lowered into trench, inspected and cleaned as specified above. Joints to PVC pipe shall be in accordance with the manufacturer's specifications.
- 644** **THRUST BACKING:** Thrust backing shall be applied to all bends, tees, valves, plugs, caps, fittings, and at changes in pipe diameter occurring at reducers.
- A. The size and shape of concrete thrust backing shall be that required and indicated on the plans by the Design Engineer and / or as directed by the District Engineer, adding bell restrains on a case by case basis (but in no case shall it be less than the sizes indicated on the table in the Standard Details).
 - B. All thrust backing shall be of Class "B" concrete having compression strength of not less than 2,500 psi when using standard cement. Backing shall be placed between solid ground and fitting to be anchored.
 - C. The area of bearing on the fitting and on the ground, in each instance, shall be that required by the Design Engineer, but in no case shall it be less than the sizes indicated on the table in the Standard Details.
 - D. The Concrete backing shall be placed so that the pipe and fitting joints will be accessible for any repair.
- 65** **MANHOLES:** Manholes for sanitary sewer force mains shall be constructed of a polymer concrete base, or cast-in-place reinforced concrete base on a case by case basis. All manhole barrels, risers, concentric cones, flat tops and grade rings shall be polymer concrete and shall conform to ASTM Designation: C478 with the additional requirement that the cement used shall be Type V sulfate resistant. Sewer manhole sections shall be manufactured without the provision for steps. Joints for the barrel section shall be tongue and groove. Manholes shall conform to these Improvement Standards and Standard Details.
- 651** **PRE-CAST** reinforced concrete bases, barrels, tapered sections, concentric cones, flat tops, and grade rings, sections shall conform to the Caltrans Standard Specifications except as herein provided.
- A. The pre-cast base shall be placed on a minimum of four (4) inches of three-quarter (3/4) inch crush rock bed.
- 652** **CAST-IN-PLACE (To be used on a case by case basis only)** reinforced portions of manholes shall be constructed of Class A concrete as specified in Section 90 of the State Specifications. Bar reinforcing steel shall be furnished and installed in accordance with Section 52 of the State Specifications. **The District recommends the use of pre- cast manhole bases with flexible boot connectors for all Sanitary Sewer manholes.**
- A. The base thickness and reinforcement shall be as designed by the Design Engineer.
 - a) For manholes extending to a finish depth of fourteen (14) feet a minimum of eight (8) inches with a minimum of one (1) mat of number four (#4) reinforcement bars each way.
 - b) For manholes extending to a finish depth of greater than fourteen (14) feet a minimum of twelve (12) inches with a minimum of two (2) mats of number four (#4) reinforcement bars each way.
 - B. The bottoms of manholes, as shown on the plans, shall be neatly shaped to match the pipe inflow and outflow and shall be brushed to a smooth finish with a wet brush.
 - C. All work shall be cured for a minimum period of ten days (or as directed by the Design Engineer) after being placed and shall be protected from injury.

D. All cast-in-place bases shall be inspected during construction, shall be properly cured, and accepted by the District Engineer before the stacking of any barrels or cones.

- 653** Each pipe shall have a resilient connection to the manhole conforming to ASTM C923 such as KOR- N-SEAL, A-LOK, or equal.
- 654** All joints in the sewer manhole shaft shall be thoroughly cleaned and sealed watertight with a pre- formed joint sealant gasket material conforming to ASTM Designation such as: C923. Kent-Seal, Ram-Nek or approved equal. The joint sealant gasket material shall match the manhole wall thickness.
- 655** Inlet pipes shall project into the manhole, and in no case shall the bell of a pipe be built into the wall of a structure. Outlet pipes shall be SDR/C900 installed per Section 5 of these Improvement Standards. All work shall be cured for a period of ten (10) days after being placed and shall be protected from injury. Each pipe shall have a compression coupler within three (3) feet of the wet well. All connectors shall be made of a flexible Neoprene-EPDM material resistant to ozone, weathering, aging and chemicals, including but not limited to acids, alkalis, animal and vegetable fats, oils and petroleum products. Each connector shall have series 304 stainless steel bands and screw assemblies.
- 656** All manholes shall have the outside of all joints and other openings (including all pin lift holes and all visual imperfections to the outside surface) sealed by the application of an approved flexible six (6) inch minimum mastic tape material, (Henry – RUB’R-NEK or approved equal). The joint tape shall be applied prior to the placement of any backfill material and prior to any testing. A bitumastic material shall be applied around all pipe penetrations of the manhole to provide a watertight seal.
- 657** **INTERIOR COATINGS:** The interior of all force main discharge manholes shall be properly cleaned and dried and shall have one of the following applied and / or installed per the manufacturer’s written instructions and specifications. If polymer concrete manholes are used, no additional coating will be required.

A. Ameron T-Lock material.

B. Protective coating shall be:

- a) Modified Unsaturated Polyester coating applied in multi-layers with a minimum coating thickness of 125 mil.
- b) Spray applied Amine Cured Epoxy coating applied in multi-layers with a minimum coating thickness of 40 mil.

C. All Protective coatings shall be white in color.

- 658** All pipe and conduit penetration of the manhole and all interior seams shall be properly sealed watertight. A spark test shall be performed to verify that no holes and / or defects exist. The Contractor shall coordinate with the District and have the District Engineer and/or Inspector present at the time of the testing.

66 **BACKFILLING AND LOADING:**

- 661** **BACKFILLING** shall be brought up to a minimum depth necessary to securely hold the pipe and fitting during testing. The minimum depth of the compacted backfill shall be the horizontal diameter of the pipe to be tested, but never less than eighteen inches (18") above the top of the pipe during the pressure test. Completing backfill prior to testing shall be per Section 4, of these Improvement Standards. In no case shall there be any placement of permanent pavement prior to successful completion of the test. It shall be the responsibility of the Contractor to locate and repair at his own expense any defective joints, fittings or leaks until the results of the tests are satisfactory.

- 662** **LOADING OF ALL NEW / REPAIRED FORCE MAIN SYSTEM:** The system shall **only** be loaded by a District-approved method. The Contractor shall submit to the District a written request including copies of all current certificates for all equipment that is to be used.

6.63 The following are suggested methods:

- A.** A certified back flow device connected to an existing District system and feeding the installed system by approved hose and / or pipe. A copy of any and all Back Flow Device Certification Documents shall be made available upon request to an authorized representative of OPUD. (Title 17, Chapter V, Section 7583-7622, California Administrative Code regarding cross-connections and back flow prevention.)
- B.** Standard water truck.

67 **TESTING AND CLEANING OF FORCE MAIN LINE:** The force main will not require disinfecting or water quality testing. The main shall be pre-flushed and flushed again with a properly sized "pig" after the pressure test. Flushing shall occur in the presence of the District Representative.

6.71 **HYDROSTATIC LEAKAGE TESTS:** The pipe shall be pressure tested between acceptable points independent of any existing facilities (in reaches between valves only when acceptable by the Engineer) and all stubs for future setup with blow off assemblies and/or test plates. This test shall be achieved by application of hydrostatic pressure of 65 psi or as directed by The Engineer and all air shall be expelled from the pipe.

- A.** The duration of the test shall last a minimum of two (2) hours, unless otherwise authorized in writing by the Engineer.
- B.** The Contractor shall furnish and install the necessary pump, pipe and approved pressure gauges. The tests shall be conducted under the direct supervision of the District Engineer and/or District Inspector.
- C.** Any defective joints, pipe, fittings, or valves shall be removed and replaced and the test repeated until satisfactory to the Engineer.
- D.** Upon completion of the test or as directed by the Engineer, the system shall have water reintroduced from an acceptable clean calibrated container for measurement of makeup water required to replace leakage and to achieve the original test starting pressure.

6.72 **ACCEPTABLE TEST RESULTS:** No pipe installation will be accepted until or unless leakage for the section tested is less than the leakage specified below, (Even if the leakage is less than the allowable, all observed leaks shall be repaired):

LEAKAGE ALLOWANCE IN U.S. GALLONS PER HOUR

At 65 psi test pressure

0.02 gallons per inch diameter per 100'

68 **CONNECTION TO EXISTING SYSTEMS:** Isolation, or ends caps with thrust restraints, providing a minimum of five (5) feet of net separation, shall be installed for separation between new systems and existing systems. New systems shall not be connected directly to any of the existing system until the District has determined that the proper hydrostatic leakage testing of the new system has been completed and accepted as described above.

6.81 All proposed final connection to an existing system shall require a letter stating the proposed date and projected times service will be interrupted. This letter shall be delivered to OPUD a minimum of three (3) working days prior.

6.82 Final removal of isolation plates and connection to any and all existing OPUD system shall only be done in the presence of an authorized representative of OPUD.

6.83 The Contractor shall have all the necessary equipment and materials to be installed during the connection.

69 **ACCESS TO SYSTEM VALVES:**

- 691** All system valves shall be accessible to the District during all times and during all phases of construction.
- 692** During the paving process, valve risers shall be temporarily covered with a District accepted metal lid to limit debris from filling the riser, and shall be exposed within seven (7) calendar days.
- 693** When paving is in two lift operation with extended time between the lifts (more than seven (7) calendar days), provide risers with an acceptable temporary traffic rated assembly (Christy G-5 or District approved equal and a two sack slurry collar).

SECTION 7
SEWER LIFT STATION CONSTRUCTION

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SECTION 7

SEWER LIFT STATION CONSTRUCTION

71 **GENERAL:** Construction, furnishing and installation of Sewer Lift Stations and appurtenances shall be in accordance with these Improvement Standards and Standard Details as directed by the District Engineer. All of the applicable provisions of the current adopted Local, State, and Federal Standards, Regulations, and / or Codes shall also apply.

72 **DESIGN CRITERIA:**

721 **ENGINEERED CALCULATIONS** shall be provided based on the following and the applicable provisions of the current adopted County of Sacramento Public Works Agency, Improvement Standards, or as directed by the District Engineer:

A. **DESIGN FLOW:** Design to the minimum criteria without consideration to the actual project conditions does not guarantee plan approval. The design flow shall be calculated using the average for the upstream service area. Refer to the current adopted County of Sacramento Improvement Standards and Standard Construction Specifications for the following:

- a) Area Served (by each Phase of Construction and Ultimate)
- b) Development Density (Equivalent Single family Dwelling unit - ESD)
- c) Flow Generation (310 gpd/ESD).
- d) Infiltration (1200 gpd/Acre).
- e) Peaking factors (Refer to County of Sacramento Improvement Standards)

B. **STORAGE CAPACITY AND SIZE:**

- a) **No sanitary sewer main line pipe storage will be allowed.**
- b) Actual wet well storage capacity in all cases shall be adequate to carry the design flow from the entire tributary area, even though said area may not lie within the project boundaries. It shall be calculated so as to provide for at least the minimum design storage multiplied by two (2) plus a minimum of one (1) foot below lowest gravity inlet.
- c) The minimum wet well size shall be eight (8) feet in diameter unless otherwise approved by the District Engineer.

C. **MOTORS:**

- a) Minimum of two (2) submersible, rail system motors, connected to a manifold assembly.
- b) Total start-ups per motor per hour shall not exceed manufacturer's written specifications and recommendations.
- c) A flow meter capable of measuring actual total ultimate flows shall be installed on the outflow piping.

D. **SWITCHES:**

- a) A minimum of four (4) float switches shall be provided: "Lead Pump On", "Lag Pump On", "High Water Alarm" and "Pumps Off". Float switches shall be provided with all hardware necessary to secure and limit the tangling of the cables during normal operation.
- b) "Pumps Off" switch shall be set to provide at least the minimum liquid level over the top of the submersible motor per the manufacturer's written specifications and recommendations.

- c) "High Water Alarm" level shall be set a minimum of one (1) foot below lowest gravity inlet.
- d) All float switches shall be secured with ties to a minimum 1/4" stainless steel cable. The cable shall be secured to the base or be provided with a weight which will hold the switches in place during pump operations.
- e) The last approximately eighteen (18) inches of the switch cable shall be unsecured to allow for proper switch operation.

E. CONTROL VALVES:

- a) Check valves assemblies shall be manufactured of brass, bronze, coated ductile iron, and / or stainless steel.
- b) Gate valve assemblies shall meet the requirements of Section 6 of these Improvement Standards and shall be located above grade or within five (5) feet of finish grade.

7.22 NOTE: Every phase of the sanitary sewer lift station design, including but not limited to site design and layout, inlet piping, and force mains, shall be closely coordinated between the Design Engineer and the District Engineer. Refer to Standard Details for examples of site and section plans.

7.23 Unless otherwise approved by the District, "fee title" shall be granted to Olivehurst Public Utility District.

7.3 MATERIALS: All materials delivered to the job site shall be new, free from defects, and marked to identify the material, class, and other appropriate data such as thickness for piping. The Contractor shall submit all associated materials for acceptance and signature by District Engineer prior to placement. All associated materials shall be of the following materials, unless otherwise designated:

7.31 PUMPS shall be Vaughn Submersible Chopper Pumps, equipped with 3-phase electric explosion proof motor and rail system.

7.32 MOTOR CONTROL PANEL shall be a PLC control panel equipped with bubbler control, a digital level and a touch screen programmable controller. Any program for the PLC shall be furnished to the district. The control panel shall be furnished with an alarm light (which is to be extended above the enclosure and visible from the street), cellular alarm transmitters, and an audible alarm as directed by the District.

7.32 SUBSTITUTION proposals shall include sufficient information needed for a comparison with the specified product, the projected cost difference between the specified product and the substitution product, and shall include the estimated cost for the District Engineer's time to review and provide acceptance or rejection of said substitution product(s).

- A. All product(s) Substitution proposed by the Contractor / Developer to be included in the construction shall be submitted for review by the District Engineer a minimum of **five (5) working days** prior to the projected installation date.

7.3.4 ACCEPTANCE OF MATERIALS - Acceptance shall be subject to strength and quality testing in addition to inspection of the completed product. Acceptance of installed piping systems shall be based on inspection and leakage tests as specified hereinafter.

7.4 WET WELL shall be sized by the Design Engineer to meet the requirements of this Section and shall have the approval by signature of the District Engineer. Wet Wells shall conform to these Improvement Standards and the details shown in the Standard Details.

7.41 The Base thickness and reinforcement shall be as designed by the Design Engineer, and shall be a one piece base and per Armorock Polymer concrete specifications.

7.42 Wet wells for sanitary sewer lift stations shall be constructed of a pre-cast Armorock reinforced polymer concrete. All wet well barrels, risers, and flat tops shall conform to ASTM Designation: C478 with the additional requirements:

- A. Pre-cast reinforced polymer concrete base, barrels and flat top sections shall conform to the Caltrans Standard Specifications except as herein provided. Cement used shall be Type V sulfate resistant. Sewer lift station wet well sections shall be manufactured without the provision for steps.
- 743** Cast-in-place reinforced portions of the wet well shall be constructed of Class A concrete as specified in Section 90 of the State Specifications. Bar reinforcing steel shall be furnished and installed in accordance with Section 52 of the State Specifications. The bottoms of wet wells, as shown on the plans, shall be neatly shaped with a recess to properly stack the barrels. Also wet well bases shall be brushed to a smooth finish with a wet brush.
- 744** The wet well flat top shall be fitted with a District-approved vapor tight and lockable door assembly equipped with a safety cage designed for proper access to the pumps and all other wet well equipment.
- ◆ **No wet well barrels and/or flat tops shall be stacked onto any cast-in-place base until the base has properly cured. All cast-in-place products shall be inspected and accepted by the District Engineer during all phases of the construction.**
- 745** All joints in the sewer wet well shaft shall be thoroughly cleaned and sealed watertight with a pre- formed joint sealant gasket material conforming to ASTM Designation: C923 such as Kent-Seal, Ram- Nek or approved equal. The joint sealant gasket material shall match the wet well wall thickness.
- 746** Pipes and conduit shall project into the wet well as needed to provide an acceptable watertight seal, and in no case shall the bell of a pipe be built into the wall of a wet well structure. All work shall be properly cured after being placed and shall be protected from injury. Each pipe shall have a compression coupler within three (3) feet of the wet well. All connectors shall be made of a flexible Neoprene-EPDM material resistant to ozone, weathering, aging, and chemicals, including but not limited to acids, alkalis, animal and vegetable fats, oils and petroleum products. Each connector shall have series 304 stainless steel bands and screw assemblies.
- 747** **INTERIOR COATINGS:** The interior of all wet wells shall be properly cleaned and dried and shall have one of the following applied and / or installed per the manufacturer's written instructions and specifications:
- A. Ameron T-Lock material.
 - B. Additional protective coating shall be:
 - a) Modified Unsaturated Polyester coating applied in multi-layers with a minimum coating thickness of 125 mil.
 - b) Spray applied Amine Cured Epoxy coating applied in multi-layers with a minimum coating thickness of 40 mil.
 - C. All Protective coatings shall be white in color.
 - D. **SEALING OF JOINTS AND PENETRATION:** All pipe and conduit penetrations into the wet well and all interior seams shall be properly sealed watertight.
 - E. **SPARK TESTING** shall be performed over the entire surface of the wet well to verify that no holes and / or any defects exist. The Contractor shall coordinate with the District and have the District Engineer and / or Inspector present during the testing.
- 748** **EXTERIOR COATINGS:** All wet wells shall have the outside of all joints and other openings (including all pin lift holes and all visual imperfections to the outside surface) sealed with an approved epoxy and by the application of an approved flexible 6" minimum mastic tape material, (Henry – RUB'R-NEK or approved equal). The joint tape shall be applied prior to the placement of any backfill material and prior to any testing. A bitumastic material shall be applied around all pipe penetrations of the wet well to provide a watertight seal.
- ◆ Subject to groundwater conditions, the District may require the application of a layer (approximately 1/8" minimum thickness) of a waterproofing bitumastic material and / or require the application of a coating: Tamms-HEY'DI, Koester NB1, Tegraproof, or Xypex to the entire

exterior surface of the wet well prior to backfill. This coating will seal the surface of the wet well to limit the infiltration of groundwater.

- 749** The inside and outside of all sewer lift stations shall be sealed as needed to provide a watertight environment and pass any required testing.
- A.** The District shall not accept any Sanitary Sewer Lift Stations with any traces of groundwater infiltration. The Contractor, as directed the District Engineer, shall repair, at no cost to the District, any wet well that develops any water infiltration problem after testing.
- 75** **BACKFILLING** shall be brought up to grade per Section 4 of these Improvement Standards.
- 76** **GENERATOR** shall be a Cummins Generator, designed to be a Quiet Operating, Low Exhaust Emissions, Duty Rated-Standby Power system with a self-contained fuel supply.
- A.** All generators shall be designed and sized to meet the requirements of the lift station during all power outages.
- B.** Automatic transfer switching equipment shall be supplied and shall verify the quality of the main line power supply prior to switching off the generator.
- C.** The Contractor / Developer shall coordinate with the District and obtain all of the necessary permits, including, but not limited to, air quality and environmental.
- 77** **ODOR CONTROL** shall be provided by a ventilation system, which consists of replaceable filter device(s) (see Standard Details), designed to properly vent the wet well assembly and limit the escape of all obnoxious sewage gases and odors. The ventilation piping shall be located a maximum of twelve (12) inches below the lid and shall be a minimum of eight (8) inches in diameter. The diversion of odor to the filter devices(s) shall be achieved by positive flow of a mechanical fan (flow of 500 CFM, or as approved by District Engineer) located within twenty-four (24) inches of the ventilation piping, or as directed by the District Engineer.
- 78** **FLOW METER** shall be installed on the outflow force main piping and shall be sized for a minimum of 150% of the design flow. The meter shall be installed within an access box and shall be designed for sewage application.
- 79** **PERIMETER WALLS** shall consist of an engineered, 8 foot full grout masonry wall with an anti-graffiti coating, decorative columns and accent band for address, and with a District approved multi-agency lockable gate assembly.
- 7.10** **WATER SUPPLY** shall be provided on-site by providing a District approved water pipe with a minimum air gap of twelve (12) inches to a drain grate inlet. Alternate designs include the installation of a District Standard wharf valve assembly having a standard one and one-half (1 1/2) inch pentagon nut and two and one-half (2 1/2) inch hose outlet or the installation a District Standard Fire Hydrant.
- 7.11** **LIFT STATION SITE** shall have a finish surface consisting of a minimum of four (4) inches reinforced (number three (3) rebars centered at eighteen (18) inches on center each way) concrete slab over six (6) inches of Class II Aggregate Base compacted to 95% relative density. An approved yard service light shall be provided within the enclosure area which limits spillover onto adjoining properties (limit at property line of 0.5 ft-candle in residential areas and 1.5 ft-candle in park/open space areas), but allows for night time work on equipment.
- 7.12** **LIFT STATION ACCEPTANCE CRITERIA:** All new and rehabilitated Sanitary Sewer Lift Stations shall be inspected in accordance with the requirements of this Section, or as directed by the District Engineer. The following items are required prior to acceptance:
- 7.121** Contractor / Developer shall be required to schedule a pre-run meeting for the purpose of Construction Acceptance. The following persons or their designated authorized representative must attend this meeting: Developer, Design Engineer, Contractor, Subcontractors, all applicable Manufacturers and others necessary to ensure that all tests are properly performed and acceptable to the District. This meeting shall be scheduled a minimum of two (2) working days prior to the proposed meeting date. The following shall be verified at the pre-run meeting:
- A.** All float level settings.

- B.** All control panel settings.
 - C.** All meters and alarms.
 - D.** All pump motor proper operations (using both primary main line power and standby backup power).
 - E.** Standby backup generator.
- 7.122** A punch list of items to be corrected may be developed.
- 7.123** All punch list items (if any) must be finalized and the Contractor shall schedule for a re-inspection.
- 7.124** All equipment manuals, spare parts, operational documents and plaques, etc., shall be delivered to the District.
- 7.125** The complete site and a permanent all weather access to a public way shall be grant deeded to the District, along with all required right of way documentation..
- 7.126** All Record Documents shall be provided to the District Engineer prior to Final Acceptance of the facility.

SECTION 8
WATER SYSTEM CONSTRUCTION

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SECTION 8

WATER SYSTEM CONSTRUCTION

8.1 GENERAL: Construction, furnishing and installation of Water Mains and appurtenances shall be in accordance with the Contract Documents as accepted by the District Engineer, these Improvement Standards and Technical Specifications, District Standard Details, and A.W.W.A. Standards for Water Pipe. All of the applicable provision of the current adopted Local, State, and Federal Standards, Regulations, and / or Codes shall also apply.

8.2 DESIGN CRITERIA:

8.2.1 ENGINEERED CALCULATIONS shall be provided based on the following and the applicable provisions of the current adopted County of Sacramento Public Works Agency, Improvement Standards, or as directed by the District Engineer:

A. Applicable Standards:

- a) Environmental Protection Agency Regulations.
- b) Laws, codes and standards of the State of California, Department of Health Services relating to Domestic Water Supply.
- c) Applicable provisions of the current adopted County of Sacramento Public Works Agency, Improvement Standards.
- d) General Order No. 103 of the California Public Utilities Commission.
- e) Title 17, Chapter V, Section 7583-7622, California Administrative Code regarding cross-connections and back flow prevention.
- f) Current adopted Uniform Fire Code.

B. DESIGN FLOW CRITERIA: Design flow shall be calculated for the entire service area. Refer to the current adopted County of Sacramento Improvement Standards and Standard Construction Specifications for the following:

- a) Development Density.
- b) Designed operating Pressure at service connections are no less than 40 psi and no higher than 100 psi. Test pressure shall be a minimum of 150 psi or as directed by the District Engineer and/or District Inspector.
- c) Friction Factor.
- d) Design Fire flows and fire hydrant locations to meet the current fire protection requirements of the Agency having jurisdiction and as directed by the District Engineer.

C. PIPE CAPACITY, VELOCITY, AND SIZE:

- a) Design, demand and sizing of the water distribution system shall be per County of Sacramento Improvement Standards and as directed by the District Engineer.
- b) The minimum main size shall be eight (8) inches in diameter. Water main sizes are 8", 10", 12", 18", 24", & 30".
- c) The service lines shall be sized per design demand, but not less than the following:
 - i) Single Family Residential = One and a half (1 ½) inch minimum.
 - ii) Commercial, and Industrial = two (2) inch minimum Back-flow device may be required.
 - iii) Fire Service line = Six (6) inch minimum. Back-flow device required.
 - iv) Irrigation and Park facility = two (2) inch minimum. (Preferred sizes are 2", 4", 6", & 8"). Back-flow device required.

- d) Capacity in all cases shall be adequate to carry the design flow into the entire service area, even though said area is not within the project boundaries.
- e) 2- 45° fittings. Maximum 90° bend fittings on a case by case basis.
- f) Pipe shall be preferably designed with gate valves. The maximum spacing of valves shall be one thousand (1000) feet, or less as needed to allow for future repairs of the facility.
- g) Locating fire hydrants near most high points.
- h) Fire Hydrants shall be located at extreme low points as directed by the District Engineer and/or District Inspector.
- i) Two (2) inch blow-off valves shall be used if dead-end runs are temporary and the main is twelve inches in diameter or less. Four (4) inch blow-off valves shall be used on temporary dead-end runs larger than twelve inches in diameter.

D. Fire Hydrants.

- a) Shall be placed at street intersections wherever possible and located to minimize the hazard of damage by traffic. They shall have a normal maximum spacing per current California Fire Code (or closer if deemed necessary by the local Fire District):
 - i) Residential = 500' O.C.
 - ii) Commercial = 350' O.C.
 - iii) Industrial = 300' O.C.
 - iv) Undeveloped = 1000' O.C.
- b) The minimum size main serving a fire hydrant shall be six (6) inches in diameter, with a gate valve flange connected to the main. Not more than one hydrant shall be placed on a six (6) inch main.
- c) A fire Hydrant shall be installed on all permanent dead-end runs including cul-de-sacs.

E. The design and layout of water lines shall be closely coordinated with the District Engineer and/or District Inspector.

8.3 DESIGN OPERATING SYSTEM PRESSURE FOR RESIDENTIAL FIRE SUPPRESSION SPRINKLER SYSTEMS

8.3.1 For the purposes of the design of residential fire suppression sprinkler systems, the target pressure at the water main in the street shall be a maximum of 40 psi. This is a system target pressure for design purposes only and the District makes no guarantee as to what the system pressure will be at any time (i.e. the system pressure at the water main in the street could be higher or lower than the target pressure of 40 psi at any time). The target pressure of 40 psi maximum shall be used at the water main in the street and not at the water meter, home etc.

8.3.2 **Disclaimer: Olivehurst Public Utility District makes no warranty expressly or implied that the minimum system pressure in its water mains will be maintained at all times at or above 40-psi. Olivehurst Public Utility District merely provides that 40 psi in the water mains is the maximum stipulated pressure for the purposes of designing residential fire suppression sprinkler systems.**

8.4 MATERIALS: All materials delivered to the job site shall be new, free from defects, and marked to identify the material, class, and other appropriate data such as thickness for piping. The Contractor shall submit all water pipe and associated materials for acceptance and signature by the District Engineer prior to placement. All water piping and associated materials shall be of the following materials, unless otherwise designated:

8.4.1 PIPE - All piping shall be approved by the District and shall conform to the requirements of the current A.W.W.A. Standards for Water Pipe with a minimum designed pressure 150 psi.

A. Ductile iron with an AWWA accepted interior surface liner and a seal coating

B. C-900 DR-18 / C-905 DR-25 PVC (polyvinyl chloride) (white or blue in color) pipe

8.4.2 PIPE JOINTS - All joints shall be Push-On or Mechanical type with rubber gaskets, unless otherwise specified. All push on gaskets shall be properly lubricated per the manufacturer's written specifications.

8.4.3 **FITTINGS** - All bends, elbows, tees, crosses and special fittings shall be approved by the District and shall be in complete conformance with the applicable A.W.W.A. Standards.

- A. All fittings shall be Push-On, Mechanical type, or Flanged ends designed for a minimum working pressure of two hundred fifty (250) psi.
- B. All buried metal parts shall be brass, bronze, cast iron, ductile iron, or stainless steel.
- C. All metal parts shall be provided with an AWWA approved special coatings. All buried metal materials and / or equipment shall be sealed by wrapping with a minimum ten (10) mil polypropylene film lapped as needed to provide a seal and taped with a minimum of three (3) wraps of a ten (10) mil HDPE tape, or as directed by the District. Contractor / Developer has the option to provide the District Engineer with a stamped and signed Soils Report, which indicates if the soils conditions are suitable for placement without a polyethylene wrap.

8.4.4 **BURIED NUTS AND BOLTS** - All buried nuts and bolts, flanges and couplings shall be Type 304 stainless steel and Core ten "T" bolts and shall conform to the requirements of the current A.W.W.A. Standards for Water Pipe.

8.4.5 **VALVES**: Types of valves to be installed shall be Mueller or approved equal. All valves shall open to the left (counter-clockwise) and be furnished with flange or mechanical joint using an elastomeric-gasket seal. All valves shall bear the registered certification mark of the AWWA. All installed valves shall operate smoothly with no more than twenty-five (25) ft-lbs. torque. Valves operating at torques greater than twenty-five (25) ft-lbs. require approval by the District. All valves shall have two (2) inch square operating nuts. All valves shall be coated and lined with a two-part Polyamide epoxy having a minimum dry thickness of six (6) mils and NSF approval for potable water.

A. **Gate Valves** shall be ductile iron body with bronze stem nuts, glands and bushings, non-rising stem (NRS), working water pressure of two hundred (200) psi conforming to the requirements of AWWA Standard C509. Resilient-seated gate valves shall have resilient seats bonded or mechanically attached to the gate.

B. **Butterfly Valves(Case by Case only)** shall meet AWWA Standard C504 For Rubber-Seated Butterfly Valves, Class 150B, Short Body and the requirements of this Section. Butterfly valves shall be rated at one hundred fifty (150) psi working pressure and provide drip tight shut-off at one hundred fifty (150) psi of pressure. Butterfly valves shall have flanged ends that meet the requirements of AWWA C207 Class D flanges.

◆ Butterfly valves shall be constructed of the following materials:

- a) Shaft - Type 304 Stainless Steel, ASTM A276
- b) Disc - Cast Iron, ASTM A126 Class B or ASTM A48 Class 40
- c) Disc Edge - Type 316 Stainless Steel
- d) Rubber Seat - Neoprene or Buna-N
- e) Body - Cast Iron, ASTM A126, Class B

◆ Valve body shall be a one-piece casting and shall include two integral B 16.1 Class 125 flat-face flanges, two trunnions and a pad for mounting bonnet with actuator.

8.4.6 **VALVE BOXES**, shall be traffic rated, precast concrete ("Christy - G5" or approved equal) with a cast iron face and a cast iron traffic rated lid. Covers shall be marked "**WATER**" and shall have a loose fit in the box.

A. Valve boxes shall have risers installed as needed to adjust to grade after paving completion, unless otherwise directed or approved by the District Engineer.

- a) Valve risers shall be installed prior to back fill and shall extend from below the valve nut to a point eighteen (18) inches \pm above construction grade and shall be firmly supported and maintained, and be centered and plumb over the wrench nut of the valve assembly.

- b) Risers shall consist of a continuous section (having no splices unless approved by the District Engineer) of an eight (8) inch C-900 DR 18 PVC pipe (blue for potable water mains) and should be temporarily covered consisting of a minimum formed 22 gauge GSM lid to limit debris from filling the riser.
- c) When trimmed to below the road subgrade prior to the placement of Aggregate Base and / or Paving, a temporary cover consisting of a minimum formed 22 gauge GSM lid to limit debris from filling the riser shall be installed.
- d) The center of all valve nuts shall be referenced prior to being covered with any materials.
- e) The valve riser shall be raised to finish grade per the Standard Detail. Unless approved by the District Engineer, all valve nuts which are forty two (42) inches or less in depth shall be continuous (no splices). When the valve nut is more than forty two (42) inches the risers shall be extended by a splice consisting of a continuous section of proper fitting C-900 DR 18 PVC pipe and with either of the following;
 - i) District approved proper fitting coupling,
 - ii) Or an integral bell joint (gasket maybe removed).

8.4.7 **LOCATING DEVICES** shall consist of the following: (The District shall approve all marking devices prior to installation.)

A. MARKING TAPE shall be reflective, a minimum of six (6) inches wide and placed twelve (12) inches above the pipe. Service line tape shall be a minimum of three (3) inches wide and placed six (6) inches above the line. The tape shall be marked:

- ◆ "WATER MAIN BELOW" for processed potable water and shall be blue in color.
- ◆ "RAW WATER MAIN BELOW" for raw untreated, unprocessed water and shall be green in color.

a) Except when located within steel casing, all raw water main lines not marked "**RAW WATER MAIN**" on the exterior of the pipe shall have identification materials attached directly to the pipe. These materials shall be marked "**RAW WATER MAIN**" and shall consist of one or more of the following:

- i) Green Reflective marking tape continuously wrapped around the exterior (at a minimum of thirty (30) inch on center),
- ii) Green adhesive marking tape or,
- iii) Green colored polypropylene sleeve.

B. TRACING WIRE: All runs of non-metallic water pipe shall have a No. 10 gauge UF-rated solid copper wire with plastic insulation, which shall be laid along the top of the pipe to facilitate locating the pipe at a later date. Secure wire to top of pipe with an accepted tape or other approved means at ten (10) foot on center maximum spacing. The wire shall be stubbed up for above grade access within each valve box, but should never exceed six-hundred (600) lineal feet along the water main. If valve spacing is greater than six-hundred (600) feet, raise and secure the tracing wire through a conduit into an approved "Christy" G-5 box (or equal) as shown on Standard Detail Sheet 8-18.

C. LOCATION STAKES: Water Mains in unpaved areas (as directed by Engineer) shall be marked every five hundred (500) lineal feet with a four (4) inch wide by five (5) foot tall, blue composite utility marker having a decal stating: "**CAUTION WATER MAIN - OPUD**". Appurtenances (valves, ARV's, test stations, etc.), and angle points shall also be marked.

D. MAINS IN LANDSCAPED AREAS: Shall be identified as directed by the District Engineer.

8.4.8 **FIRE HYDRANTS** - Fire hydrants shall be as shown on the standard details.

- 8.4.9 SERVICES** - All service materials and fittings shall be brass, bronze or stainless steel (Refer to Standard Details) except for service lines from the water main to the curb stop which shall be Polyethylene Water Service Pipe (poly pipe). The poly pipe shall be installed per manufacturers and The Plastic Pipe and Fittings Association's installation guides. In case of discrepancy between the two guides, the manufacturer's guide shall take precedence. Any deviation from the guides shall require the approval of the District Engineer. Install Mueller Co. (or approved equal) corporation stops & curb stops. In no case shall services shall be installed off six (6) inch diameter fire hydrant mains.
- 8.4.10 WATER METERS, SETTERS AND BOXES** - All water meters shall be "Badger" and/or Sensus, and shall read in hundred cubic feet (CCF), have TRPL with MXU (Radio Read). Standard residential shall be 1"ø. All larger diameter commercial meters to be SAME Badge model with the same requirements as residential meters, unless otherwise specified by the District.
- A. Meter setters shall be used for 1" with a brass nipple out the back of the setter for 1" services, and shall be Mueller Co.
 - B. Meter boxes shall include risers as needed, and shall be per the District Standard Details.
 - C. All meter box lids shall be provided with a touch pad hole. Provide traffic rated lids for driveway locations.
- 8.4.11 DRY BARREL WATER QUALITY SAMPLING STATION:** - Shall be manufactured by Placer Waterworks Inc., model "PW / WS-DB30", shall be a minimum of one (1) per village / unit or as directed by the District and shall be located within a park area or as directed by the District.
- 8.4.12 SUBSTITUTION** proposals shall include sufficient information needed for a comparison with the specified product, the projected cost difference between the specified product and the substitution product, and shall include the estimated cost for the District Engineer's time to review and provide acceptance or rejection of said substitution product(s).
- A. All product(s) Substitution proposed by the Contractor / Developer to be included in the construction shall be submitted for review by the District Engineer a minimum of **five (5) working days** prior to the projected installation date.
- 8.4.13 ACCEPTANCE OF MATERIALS** - Acceptance shall be subject to strength and quality testing in addition to inspection of the completed product. Acceptance of installed piping systems shall be based on inspection and leakage tests as specified hereinafter.
- 8.4.14 REFERENCE POINT** information indicating the location of all valves shall be submitted to the District for acceptance in one of the following forms:
- A. GPS reference file (file format shall be as directed by the District),
 - B. Red noted set of plans indicating the approximate depth to the top and a minimum of three (3) reference point items that are all protected from damage and / or loss during the construction.
- 8.4.15 NOTE:** The District will issue a letter to the Contractor, Developer, and Public Works only after Construction Acceptance of all Sewer and Water facilities for specific partition of the project and the District has accepted the RP information provide by the Contractor. All letters of Acceptance made relative to any project does not relieve the Contractor / Developer from compliance with the requirements of the District or of any other agency having jurisdiction.
- 8.4.16 SALVAGED MATERIALS** - All items including fittings, boxes, and other materials which are salvageable and are to be removed, as directed by the District, shall be the property of OPUD and shall be delivered to the District Corporation Yard.
- A. All existing fire hydrants, wharf hydrants and valve assemblies shall be excavated and salvaged such that they are not damaged in any way.

8.5 INSTALLATION:

- 8.5.1** Water mains shall be installed in the locations shown on the plans. The trench shall be of sufficient depth so as to provide thirty-six inches (36") minimum cover over the pipe from the finished grade and

shall be to the grades designated on the plans. All installations shall conform to the manufacturer's written specifications.

- A. Water pipes shall be handled in such a manner as to avoid damage to the machined ends. When damaged pipe cannot be repaired to the Engineer's satisfaction, it shall be removed from the job. The interior of all pipe and accessories shall be kept free from dirt and foreign matter at all times.
- B. Service taps of the water mains shall be done to insure that cuttings, fillings and plugs do not enter the water mains.
- C. Proper implements, tools, and facilities, satisfactory to the Engineer, shall be provided and used for the safe and efficient execution of the work. All pipe fittings, valves, hydrants and accessories shall be carefully lowered into the trench by means of derrick, ropes, or other approved equipment, in such a manner as to prevent damage to the pipe and fittings. **Under no circumstances shall any pipe be dropped or dumped into the trench.** The pipe and accessories shall be inspected for defects prior to lowering into the trench. Any defect, damage, or unsound pipe shall be repaired or replaced. All foreign matter shall be removed from the interior of the pipe before lowering into position in the trench. Pipe shall be kept clean by means approved by the Engineer during and after placement.
- D. Pipe shall be installed per manufacturer written instructions and specifications. Pipe shall not be deflected either vertically or horizontally in excess of that recommended by the manufacturer of the coupling. When pipe laying is not in progress, the open ends of the pipe shall be closed watertight by an approved means to prevent entrance of foreign materials and/or trench water into the line. Whenever water is ejected from the interior of the pipe, adequate backfill shall be deposited on the pipe to prevent floating. Any pipe that has floated shall be removed from the trench and re-laid as directed by the Engineer. No pipe shall be laid in water or when, in the opinion of the Engineer, the trench and/or weather are unsuitable for such work.
- E. Protection for buried Ductile Iron Pipe, Connectors, and Adapters: All buried Ductile Iron Pipe, Connectors, and Adapters shall be protected with 10 mil polyethylene film in accordance with AWWA C105. Continuously seal seams and overlaps with approved PVC tape. Gather excess polyethylene to top so as not to block backfill material from getting under the bottom of the pipe. Refer to "ASTM A 888" for standard requirements.
- F. Contractor shall maintain a clean, controlled, working environment during all phases of the installation of all of the water transmission assembly, preventing contamination from any and all ground waters, soils and other infiltration of possible bacteriological materials. All valves must be closed until testing and open pipe ends must be capped by a District-accepted method.

8.5.2 VALVES AND FITTINGS: Cast iron valves, hydrants and / or fittings for use with PVC pipe may have bells or spigots with special dimensions as recommended by the pipe manufacturer in order to provide a flexible seal between the pipe and the fitting with a rubber ring gasket of the same composition, design and dimension as used with the pipe couplings.

- ◆ Before laying the valves, hydrants, or fittings, all lumps, blisters and excess coal-tar coatings shall be removed from the bells and spigot ends. The outside of all spigots and the inside of all bells shall then be wire brushed as needed and wiped clean and dry, prior to any required lubrication and/or assembly.

8.5.3 VALVE EXTENSIONS: All valve assembly nuts which are deeper than forty-two (42) inches below finish grade shall be fitted with a District approved steel valve extension, sized as needed to raise the access to within thirty six (36) inches \pm below finish grade, or as directed by the District Engineer. Refer to Standard Detail.

8.5.4 PLUGS: Standard plugs shall be inserted into the bells of all dead-end fittings. Spigot ends of fittings and plain ends of pipe shall be capped. Plugs and caps shall be lowered into trench, inspected and

cleaned as specified above. Joints to PVC pipe shall be in accordance with manufacturer's specifications.

8.5.5 **THRUST BACKING** shall be applied to all bends, tees, valves, plugs, caps, fire hydrants, fittings, and at changes in pipe diameter occurring at a reducer.

- A. The size and shape of concrete thrust backing shall be that required and indicated on the plans by the Design Engineer and / or as directed by the District Engineer, (but in no case shall it be less than the sizes indicated on the table in the Standard Details).
- B. All thrust backing shall be of Class "B" concrete having compression strength of not less than 2,500 psi when using standard cement. Backing shall be placed between solid ground and fitting to be anchored.
- C. The area of bearing on the fitting and on the ground, in each instance, shall be that required by the Design Engineer, but in no case shall it be less than the sizes indicated on the table in the Standard Details.
- D. The Concrete backing shall be placed so that the pipe and fitting joints will be accessible for any repair.

8.5.6 **FIRE HYDRANTS** shall be located as shown on the plans and as directed by the District. All hydrants shall stand plumb with nozzles at right angles to the curb or as directed by the District. Hydrants shall be cleaned of foreign matter before setting.

- A. Fire hydrants shall have proper bury length and extension spools so that the base of the fire hydrant flange is two (2) inches (to 5 1/2") above the finish grade. The break-off riser spool groove shall be exposed and 12" by 12" concrete shall be poured around the center of the check valve.
- B. All Fire Hydrants shall be painted with an approved paint consisting of one primer coat red and two finish coats of #1147 "Bright Safety Yellow".

8.6 **BACKFILLING AND TESTING:**

8.6.1 **BACKFILLING** shall be brought up to a minimum depth necessary to securely hold the pipe and fitting during testing. The minimum depth of the compacted backfill shall be the horizontal diameter of the pipe to be tested, but never less than eighteen inches (18") above the top of pipe during the pressure test. Completing backfill prior to testing shall be per Section 4 of these Improvement Standards. In no case shall there be any placement of permanent pavement prior to successful completion of the test. It shall be the responsibility of the Contractor to locate and repair at his own expense any defective joints, fitting or leaks until the results of the tests are satisfactory.

8.6.2 **LOADING OF ALL NEW / REPAIRED WATER SYSTEM:** The water system shall **only** be loaded by a District-approved method. The Contractor shall submit to the District a written request including copies of all current certificates for all equipment that is to be used. An approved disinfectant shall be introduced into the new / repaired system during the loading.

A. The following are suggested methods:

- a) A certified back flow device connected to an existing District system and feeding the installed system by a clean, approved **Disinfected** hose and/or pipe. A copy of any and all Back Flow Device Certification Documents shall be made available upon request to an authorized representative of OPUD. (Title 17, Chapter V, Section 7583-7622, California Administrative Code regarding cross-connections and back flow prevention.)
- b) California State Health Department certified potable water truck / tank.

8.6.3 **TESTING:** Test shall be made in conformance with the applicable provisions of A.W.W.A. Standard C-603-78. Test pressures shall be 150 psi. for a duration of 2 hours. Contact the District two (2) working days prior to any testing and/or sampling to schedule an inspection.

- A. The Contractor shall supply the pumping equipment, plugs, acceptable oil filled gauge and a minimum of one spare gauge, along with any necessary ladders or catwalks and safety equipment to provide the Inspector with access to view the test gauge. In addition, the District may compare the Contractors gauge with a District-owned gauge at any time.

8.6.4 HYDROSTATIC LEAKAGE TESTS: The pipe shall be pressure tested between acceptable points independent of any existing facilities (in reaches between valves only when acceptable by the Engineer) and all stubs for future setup with blow off assemblies and/or test plates. This test shall be achieved by application of hydrostatic pressure of 150 psi or as directed by The Engineer and all air shall be expelled from the pipe.

- A. The duration of the test shall last a minimum of two (2) hours, unless otherwise authorized in writing by the Engineer.
- B. The Contractor shall furnish and install the necessary pump, pipe and approved pressure gauges. The tests shall be conducted under the direct supervision of the Engineer.
- C. Any defective joints, pipe, fittings, valves or hydrants shall be removed and replaced and the test repeated until satisfactory to the Engineer.
- D. Upon completion of the test or as directed by the Engineer, the system shall have water reintroduced from an acceptable, clean, calibrated container for measurement of makeup water required to replace leakage and to achieve the original test starting pressure.

8.6.5 ACCEPTABLE TEST RESULTS: No pipe installation will be accepted until or unless leakage for the section tested is less than the leakage specified below, (Even if the leakage is less than the allowable, all observed leaks shall be repaired):

LEAKAGE ALLOWANCE IN U.S. GALLONS PER HOUR

_____ At 150 psi test pressure _____

0.02 gallons per inch diameter per 100'

8.7 DISINFECTION AND FLUSHING: Before being placed in service, all new water systems, valve sections to such extensions, any replacement in existing water system, or exposed section of the existing system shall be disinfected to the satisfaction of the Engineer. The system shall be chlorinated so that a chlorine residual of not less than ten (10) parts per million remains in the water after a minimum of twenty-four (24) hours retention in the pipe. Under average circumstances, this chlorination may be expected by application of a minimum of twenty-five (25) parts per million or as directed by the District. Flushing of the system shall be done only as directed by the District, and unless directed otherwise, shall require de-chlorination of the water being flushed by an approved method.

8.8 BACTERIOLOGICAL TESTING: Bacteriological testing shall be provided by the contractor at no cost to the District and shall be done by a District-accepted California Department of Health and Safety Accredited / Registered testing facility. The Contractor shall be responsible for submitting adequate information to the District for acceptance of the testing laboratory prior to any sampling for Bacteriological contamination of the system. All of the applicable provisions of the current adopted Local, State, and Federal Standards, Regulations and / or Codes shall also apply to the Bacteriological sampling and testing.

- A. All hydrostatic leakage testing, disinfection and flushing as described above shall be completed prior to the sampling of any portion of the newly installed and / or repaired water system.
- B. Contact the District two (2) working days prior to any sampling to schedule with the District.
- C. Test samples shall only be drawn with an authorized representative of the District present. The District shall have the option to require any and all test sample containers to be officially sealed by a District representative.
- D. The District's preferred testing method should be **Multiple-Tube Fermentation Technique (9221)** with a minimum forty eight (48) hour lab test, which will determine if the water quality of

the lines meets the current U.S. Environmental Protection Agency Standards and shall use the fermentation technique with ten (10) replicate tubes each containing 10mL.

- ◆ An alternate test method shall be considered on a case by case basis and shall be requested from an authorized representative of the District for approval prior to the drawing of the samples. It shall be SM 9223 (E. coli) with a minimum twenty four (24) hour lab test.
- E. OPUD shall have the option to take secondary samples to verify any and all lab results.
- F. All test results shall be delivered to the District Main Office within two (2) working days of test completion.
- G. Final connections to any existing system shall be as described below and shall not be performed prior to OPUD acceptance of the entire test results.

8.9 CONNECTION TO EXISTING WATER SYSTEMS:

- 8.9.1** Isolation plates, certified back flow prevention devices (Unless otherwise approved by OPUD, the State of California Back flow Certification shall be within the last six months and shall have the original certification tag attached to the device), or ends caps with thrust restraints, providing a minimum net separation per District Standard Details, shall be installed for separation between new water systems and existing water systems. New water systems shall not be connected directly to any of the existing system until the District has determined that the new water system has been properly hydrostatic leakage tested, disinfected and flushed, and all Bacteriological testing has been completed and accepted as described above.
- A. All proposed final connections to existing water transmission lines shall require a letter stating the proposed date and projected times service will be interrupted, which shall be delivered to the District a minimum of three (3) working days prior.
 - B. Upon acceptance of the letter by the District, the contractor shall provide copies and shall distribute, as directed by the District, to all of the affected customers a minimum of two (2) working days prior to the proposed service interruption. The two (2) working days shall be to allow the affected customers to prepare for the interruption in service.
 - C. Final removal of isolation plates and connection to any and all of the existing OPUD system shall only be done with an authorized representative of the District present.
 - D. The Contractor shall have all the necessary equipment and materials and shall **PROPERLY DISINFECT** any and all items to be installed during the connection.

8.10 ACCESS TO WATER SYSTEM VALVES:

- 8.10.1** All water system valves shall be accessible to the District during all times and during all phases of construction.
- 8.10.2** During the paving process, valve risers shall be temporarily covered with a District accepted metal lid to limit debris from filling the riser, and shall be exposed within seven (7) calendar days.
- 8.10.3** When paving is in two lift operation with extended time between the lifts (more than seven (7) calendar days), provide risers with an acceptable temporary traffic rated assembly (Christy G-5 or District approved equal and a two sack slurry collar).

SECTION 9
CONSTRUCTION PLANS PROCESSING PROCEDURES

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SECTION 9

CONSTRUCTION PLANS PROCESSING PROCEDURES

- 91 APPLICABLE STANDARDS:** Pertinent and the most current requirements of the following agencies and standards shall apply to the design of all of the District's systems: (In case of conflict between the requirements of these Standards and the agencies and documents listed below, the District Engineer shall decide the appropriate action)
- A. Environmental Protection Agency Drinking Water Regulations.
 - B. Laws, codes, and Standards of the State of California, Department of Health Services relating to Domestic Water Supply.
 - C. General Order No. 103 of the California Public Utilities Commission.
 - D. Title 17, Chapter V, Section 7583-7622, California Administrative Code regarding cross-connections and back flow prevention.
 - E. Uniform Fire Code.
 - F. Standard Specifications and Standard Details of the District.
- 92 DESIGN CRITERIA:** Per the applicable sections of these Improvement Standards.
- 93 IMPROVEMENT DOCUMENT SUBMITTAL:** All improvement plans for developments (including, but not limited to, commercial, industrial, single family, multi-family, street improvements, and landscape, parks and corridors) that will be served by any District facility shall be reviewed, approved and signed by an authorized representative of the District. The following must occur before the plans can be reviewed:
- A. Submit two (2) hardcopies and one pdf copy of all Construction Documents including, but not limited to Plans and Profiles (scaled and on full size (24"x36") drawing sheets), Engineers Estimate, Details, and one (1) copy of the Specifications for the District review and approval.
 - B. All applicable Plan Review Fees as prescribed in Section 9.4.
- 94 PLAN REVIEW AND INSPECTION FEES:** When improvement documents are initially submitted to the District for review, plan review fees (2% of the Design Engineer's sewer and water construction estimate) for the development will be required before the review of plans can begin. Inspections and testing fees (3% of the estimate) must be paid in full prior to plan approval. Additional fees may be required to be paid during plan review and / or inspection if the accumulated costs expended by the District on the development exceed the original fee amounts paid. Failure of a developer to complete a project does not relieve the developer of paying all costs incurred by the District.
- 95 IMPROVEMENT DOCUMENT RESUBMITTAL:** The process of plan review may involve the resubmission of plans according to the District's comments upon review. The District Representative shall indicate the number of improvement plans to be resubmitted at the time of releasing the comments. Revisions, corrections or additions to the reviewed plans shall be resubmitted to the authorized representative of the District for approval. The Design Engineer shall notify the District if plans being resubmitted contain revisions or alterations other than those required by the District on previously corrected plans. Revision notations shall not be shown on plans until after the District Engineer has formally approved the plans.
- 96 APPROVAL OF IMPROVEMENT DOCUMENTS:** At such time as the Design Engineer preparing the plans has made the necessary revisions and signed and stamped the original plans, and all required fees have been paid, the District Engineer will sign the plans on the cover sheet in the space provided. Plans will NOT be approved nor construction authorized until the District Engineer signifies approval by signature on the plans. The District Engineer's approval is valid for a period of twelve (12) months. Should work not commence within the twelve (12) month period, the plans shall be resubmitted for re-approval. The District Engineer shall order any Contractor to cease work on any project if said Contractor does not have properly approved plans in his possession.

- 9.6.1** All improvement and landscape projects to be served by the District must be approved and plans signed by an authorized representative of the District. The following must occur before the plans can be approved:
- A.** All comments made by the District to the improvement plans must be addressed.
 - B.** The location(s) of all wells in use and all abandoned wells that are affected by the project must be shown on the improvement plans and properly destroyed in accordance with all applicable requirements of the Yuba County Environmental Health, State of California Health and any Federal Agencies. Copies of well destruction permits for all destroyed wells must be provided to the District prior to obtaining plan approval.
 - C.** All applicable plan review, construction inspection, etc. fees are paid. If the project is within any special District development zone, all applicable development fees must be paid.
 - D.** Upon District and Yuba County approval, submit two (2) full size copies of all of the approved signed Documents, and five (5) copies of reduced 11x17 plans.

9.6.2 APPROVAL OF CONSTRUCTION PLANS, NO RELEASE FROM LIABILITY. The review and / or approval by the District of any working drawing and / or method of work proposed by the Design Engineer / Contractor / Developer shall not relieve the Design Engineer / Contractor / Developer of responsibility for any errors and shall not be regarded as any assumption of risk or liability by the District or any officer, official, agent, employee, member, volunteer, affiliate, or their duly authorized representatives. The Design Engineer / Contractor / Developer shall have no claim against the District because of the failure or partial failure or inefficiency of any reviewed or approved plan or method. The District review and / or approval means that the District has no objection to the Design Engineer / Contractor / Developer using the proposed plan or method at the responsibility and risk of the Design Engineer / Contractor / Developer.

97 IMPROVEMENT DOCUMENT REVISIONS: All construction document revisions made after initial document approval that affects any system to be maintained and operated by the District shall be reviewed, approved and signed by an authorized representative of the District prior to any and all deviation from the currently signed and approved documents. Upon signature of approval, submit two (2) copies of revised documents and five (5) copies of reduced 11x17 plans.

98 CONFLICTS, ERROR AND OMISSIONS: Excepted from approval are any features of the plans / documents that are contrary to, in conflict with, or do not conform to any California State Law, District Standard Specification, Yuba County Code or Resolution, conditions of approval, or generally accepted engineering practice, in keeping with the standards of the professions, even though such errors, omissions or conflicts may have been overlooked in the District review of the plans and documents. All construction conflicts, error and omissions shall be resolved by the Design Engineer prior to proceeding with construction work so involved.

- A.** Documents prepared by the Design Engineer to resolve the conflicts shall be submitted for review, approval and signature by an authorized representative of the District prior to any and all deviation from the signed and approved documents. The following shall be submitted for District review:
 - a) Submit two (2) copies of all Construction Documents needed to review and resolve the problem including, but not limited to Plans and Profiles, Specifications and Details for the District to review and approve.
 - b) Plans and Profiles shall be drawn to an adequate scale that clearly identifies the conflict and shall include any and all elevation / grade corrections, all other existing and proposed utilities and shall address how the problem is to be resolved.

99 ANNEXATION REQUIREMENT: When improvement plans are submitted for an area that is not currently within jurisdiction of the District, said plans will not be approved until a request for annexation to the District has been completed, unless approved otherwise. Information relative to annexation procedures is available from the District office.

9.10 PROJECT RECORD DOCUMENTS: The Contractor shall be responsible for maintaining Red-Noted documents during all phases of the construction including, but not limited to changes made by change order and / or field order. The record construction documents shall be legibly marked to record the actual as-constructed conditions of the installed or modified systems, equipment, and material of the project under the following requirements:

- A. Provide all document field correction markings:
 - a) **Red** - Additions including notes and dimensions.
 - b) **Green** - Deletions (by hash marks or appropriate lines through the deletion.).
 - c) **Graphite (gray)** - General comments and notes used by Contractor or District and not required on the as-built.
 - d) **Yellow** - Work completed as shown and used by District in field review of the as-built, during the submittal phase.
 - e) **Blue** - District verification and notes required to be added and noted by the District in review of the as-built, during submittal phase.
- B. Label each document "**Project Record**" in two (2) inch high red printed letters.
- C. Keep record documents current. All requirements listed in this section shall be kept accurately on a daily basis and available to any District Representative upon request. If this is not done, daily inspections of the project may be withheld until the record documents are brought up to date and verified by the District's Representative for accuracy (Refer to Inspections Requirements of this section). The Contractor shall not permanently conceal any work until the required information has been properly recorded.
- D. The following shall be Red-Noted on the construction documents: horizontal and vertical depths of all various elements of the improvement project and finish grade elevation referenced to visible features including, but not limited to location of all utilities and appurtenances, both visible and concealed.
- E. All field changes made to field location, dimension and details.
- F. All changes made by change order and / or field order and not on currently signed and approved construction documents.
- G. With regard to specifications and addenda, legibly mark up each section to record the following: manufacturer, trade name, catalog number and supplier of each product and item of equipment actually installed.
- H. Other matters not originally specified.
- I. Shop Drawings shall be maintained as record documents and legibly marked to record changes made during construction.

9.11 RECORD DOCUMENTS AND/OR AS BUILT: Upon completion of the construction of the improvement plans, "Record Drawing and/or As-Built" documents shall be compiled and shall be approved by the District prior to final acceptance of the improvement project.

9.11.1 The following shall be required of the Design Engineer:

- A. At construction completion, the Design Engineer shall obtain all Project Record (Red-Noted) Documents from Contractor indicating all deviations, corrections and modifications from the signed and approved documents. A copy of all Project Record (Red-Noted) Documents shall be made available upon request to the District Engineer for review and comparison with the Field Inspectors notes.
- B. "Record Drawing and/or As Built" documents shall be reviewed and approved by the Design Engineer.

- C. After Design Engineer's review, forward "Record Drawing and/or As Built" documents to the District and Yuba County for approval and acceptance.

9.11.2 The following shall be provided to the District Engineer prior to final acceptance of the project:

- A. District and Yuba County approved "Record Drawing and/or As Built" documents computerized, as directed by the District.
- B. Hardcopies of each sheet of the improvement plans shall be marked "Record Drawing and/or As Built", as directed by the District.
- C. Electronic files to the District of all "Record Drawings and/or As Built" documents, as directed by the District.
- D. Blue Line and Electronic files of Water System only and separate files of Sanitary Sewer only to the District of all "Record Drawing and/or As Built" documents, as directed by the District.
- E. Final Maps recorded and copies of Recorded Maps to the District.
- F. All necessary Easements or Fee Title Properties necessary to support Water and / or Sanitary Sewer installations submitted to the District for approval and the granting process completed.
- G. All Interim System Capacities and Ultimate System Capacities Design Criteria for the following:
 - ◆ Sanitary Sewer System.
 - ◆ Lift Stations.
 - ◆ Booster Stations.
 - ◆ Water Systems including, but not limited to, Production Plants.
 - ◆ All similar facility information shall be included in the "Record Drawing and/or As Built" documents, as directed by the District.

9.12 **PARTIAL PLANS:** Where the improvement plans submitted cover only a portion of the ultimate development, the plans submitted shall be accompanied by the approved tentative plan or study plan of the ultimate development.

9.13 **OTHER AGENCY NOTIFICATIONS:** Prior to District approval, the Design Engineer is responsible for obtaining the approval and necessary permits of other governmental or municipal agencies when their facilities are involved.

9.14 **INSPECTION REQUIREMENTS:** Any and all improvement projects which will ultimately be maintained by the District shall be inspected during all phases of construction by an authorized representative of the District. Each phase of construction shall be inspected and approved prior to proceeding to any subsequent phases.

- A. Any improvement constructed without inspection as provided above or constructed contrary to the order or instruction of the District Engineer will be deemed as not complying with these Standard Specifications and Standard Details and may not be accepted by the District for maintenance purposes.
- B. The Design Engineer shall notify the District Engineer when the Contractor first calls for grading and staking and shall provide the District Engineer with a copy of all cut sheets upon request.
- C. Upon receiving the request for final inspection, the District Engineer shall inspect the work. The Contractor, Design Engineer and Developer will be notified as to any particular defects or deficiencies at the earliest possible date. At such time as the work has been completed, a second inspection shall be made by the District Engineer to determine if the previously mentioned defects have been repaired, altered and completed in accordance with the plans. At such time as the District Engineer approves and accepts the work for the District, the Contractor, Design Engineer, and Developer will be notified in writing as to the date of final approval and acceptance.

9.15 **SPECIAL NOTICES:** The Design Engineer shall be responsible for advising the Contractor as follows:

- A. Contractors shall be in receipt of the official plans approved and signed by an authorized representative of the District prior to beginning any construction.
- B. Contractor shall notify all utility companies involved in the development prior to the beginning of work.
- C. Contractor shall notify "Underground Service Alert" two (2) working days in advance before any excavation.
- D. Contractor shall be responsible for the protection of all existing utilities and survey monuments and shall notify the appropriate agency of any and all damage.
- E. Contractor shall notify all of the appropriate agencies and/or property owners a minimum of two (2) working days prior to commencing any work.
- F. Contractor shall not dispose of any chlorinated water and / or contaminated materials into any waterway, drainage system, wetland, or other protected area.
- G. Contractor shall notify the District of all work schedule changes including, but not limited to, beginning and ending work hours and the days of the week work that will be performed.
- H. Contractor shall be responsible for scheduling all required special inspections and / or observations a minimum of two (2) working days prior.
- I. Contractor shall be responsible for maintaining red-noted documents during all phases of the construction and shall submit them to the Design Engineer upon completion of the improvement project.

916 RIGHT TO RETAIN IMPERFECT WORK: If any portion of the work done or materials furnished for the project shall prove defective or not in accordance with the District Requirements, and if the defect in work or materials is not of sufficient magnitude or importance to make the work dangerous or undesirable, or if the removal of such work or materials is impracticable or will create conditions which are dangerous or undesirable, the District shall have the right and authority to retain the work or materials instead of requiring it to be removed and reconstructed or replaced.

917 REMOVAL OF REJECTED MATERIALS OR WORK: The Contractor / Developer shall remove all rejected or condemned materials or structures brought to or incorporated in the Work within two (2) Working Days of the District's written order. No such rejected or condemned materials shall again be offered for use in any District project. The Contractor / Developer shall, at the Contractor's / Developer's expense, bring into District compliance all rejected materials or work in a manner acceptable to the District.

The District may bring into District compliance the rejected materials if the Contractor / Developer fails to comply with this Section. All associated costs shall be paid for by the Contractor / Developer, at no expense to the District.

918 PROPERTY RIGHT IN MATERIALS: Nothing in the Project shall be construed as vesting in the Contractor / Developer any right of property in the materials used after they have been installed, attached or affixed to the Project, and on which construction acceptance has been made by the District. All such materials shall be the property of the Contractor / Developer and the District jointly as their interests may appear, and shall not be removed from the project or the District by the Contractor / Developer without the District's consent.

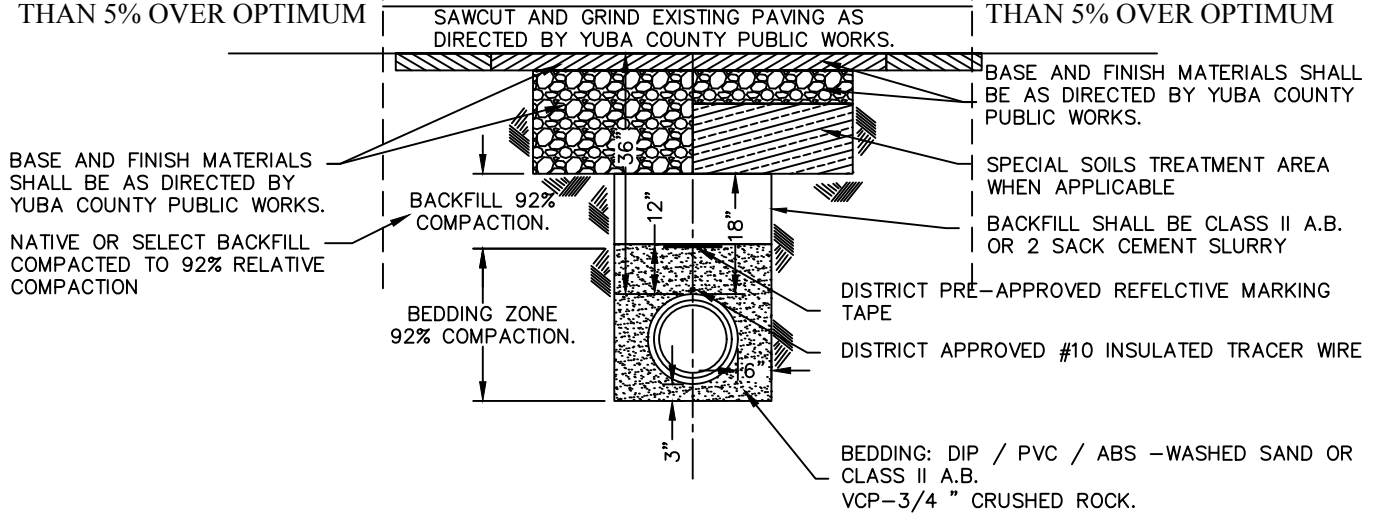
9.19 GUARANTEE - WARRANTY: The Contractor / Developer shall provide guarantees and warranty that the improvement project has been done in accordance with the signed and approved Construction Documents and that the Work, as installed, will fulfill the requirements of the guarantee-warranty. The Contractor / Developer shall agree to the following:

- A.** The minimum period of one (1) year after all village improvements are done, or as approved by the District, shall begin on the date of final acceptance by the District for Workmanship and Materials of the specified portion of the improvement project.
- B.** The District shall bear no additional expense of any and all repair / replacement of the Work that may prove to be defective in its workmanship and / or materials.
- C.** Normal ordinary wear and tear and all unusual abuse or neglect on the part of the District shall not be included.
- D.** The guarantee-warranty period shall restart from the date of acceptance of any and all repair / replacement work and shall apply only to the item and / or equipment so repaired / replaced, unless otherwise agreed in writing with the District.

TRENCH WALL AND / OR BACKFILL MATERIALS HAS A MOISTURE LESS THAN 5% OVER OPTIMUM

TRENCH REQUIREMENTS IN EXISTING PAVED AREAS (WITHIN COUNTY R/W)

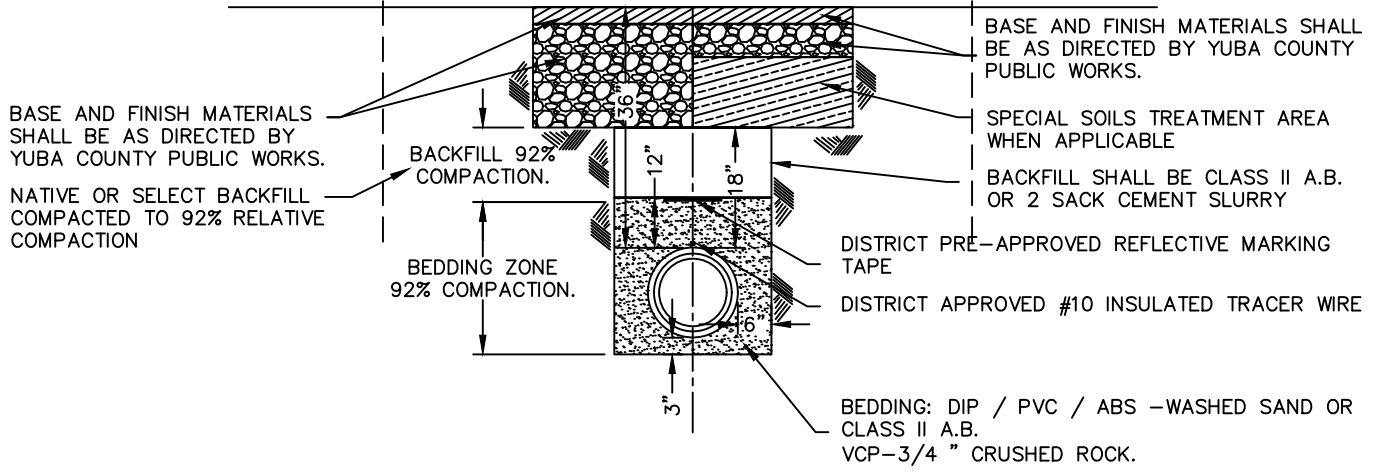
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TRENCH WALL AND / OR BACKFILL MATERIALS HAS A MOISTURE LESS THAN 5% OVER OPTIMUM

TRENCH REQUIREMENTS IN PROPOSED AND FUTURE PAVED AREAS (WITHIN COUNTY R/W)

TRENCH WALL AND / OR BACKFILL MATERIALS HAS A MOISTURE GREATER THAN 5% OVER OPTIMUM



NOTES:

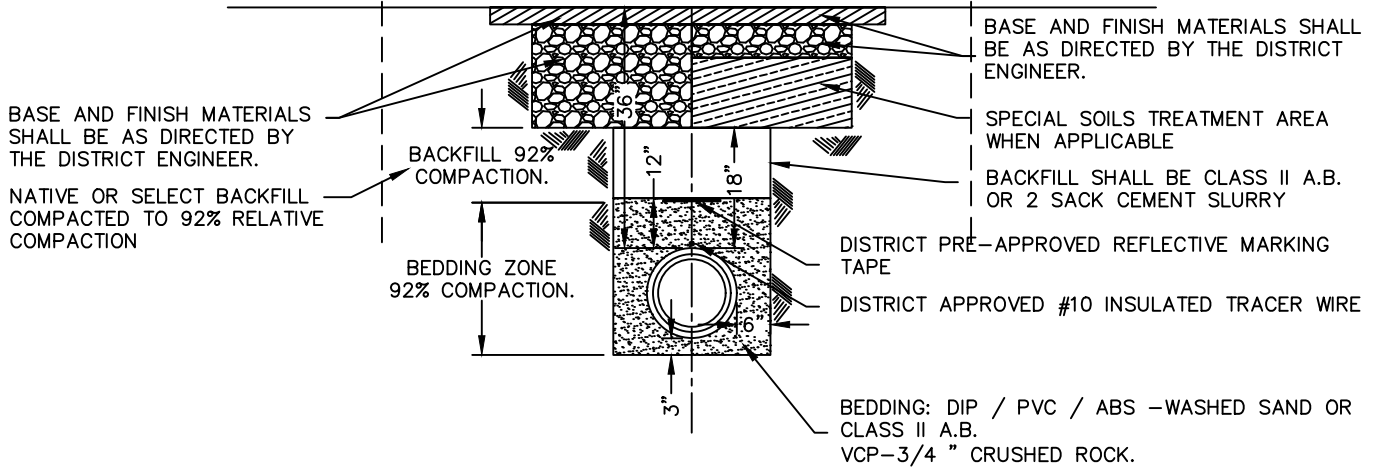
1. ALL CONSTRUCTION PERMITS SHALL BE REQUIRED PRIOR TO CONSTRUCTION.
2. ALL TRENCH WORK DEPTHS FIVE (5) FEET OR GREATER SHALL BE PROVIDED WITH STATE AND FEDERAL APPROVED SAFETY SHORING.
3. ALL BACKFILL MATERIALS SHALL BE APPROVED BY THE DISTRICT PRIOR TO PLACEMENT.
4. COMPACTION TESTING SHALL BE AS DIRECTED BY THE DISTRICT ENGINEER AND SHALL BE PERFORMED BY A DISTRICT APPROVED GEOTECH ENGINEER.
5. CERTIFICATION OF TRENCH BACKFILL COMPACTION SHALL BE REQUIRED PRIOR TO ANY DISTRICT ACCEPTANCE.
6. MINIMUM COVER OVER UTILITIES SHALL BE EIGHTEEN (18) INCHES BELOW FINISH SUBGRADE OR BOTTOM OF SPECIAL SOILS TREATMENT SECTION AND THIRTY-SIX (36) INCHES BELOW FINISH GRADE, REFER TO THE CURRENT DISTRICT IMPROVEMENT STANDARDS.
7. ALL UTILITY PIPING OR CONDUIT INSTALLATION SHALL BE PER THE CURRENT DISTRICT IMPROVEMENT STANDARDS.
8. ALL UTILITY PIPING OR CONDUIT PLACED WITHIN THE TRENCH SHALL HAVE A DISTRICT APPROVED MARKING TAPE (PER THE CURRENT DISTRICT IMPROVEMENT STANDARDS) LOCATED DIRECTLY OVER EACH UTILITY ON TOP OF THE BEDDING MATERIAL (TWELVE (12) INCHES ± ABOVE THE UTILITY).
9. PRESSURIZED LINES SHALL BE PROVIDED WITH A TRACER WIRE PER THE CURRENT DISTRICT IMPROVEMENT STANDARDS.

OLIVEHURST PUBLIC UTILITY DISTRICT		
TRENCH DETAIL IMPROVED AREA		
5-05	FORMERLY STD. DTL. NO. S-1	SCD
DATE	REVISIONS	BY
Garry E. Laughlin District Engineer		5-6-2005 DATE
		4-01

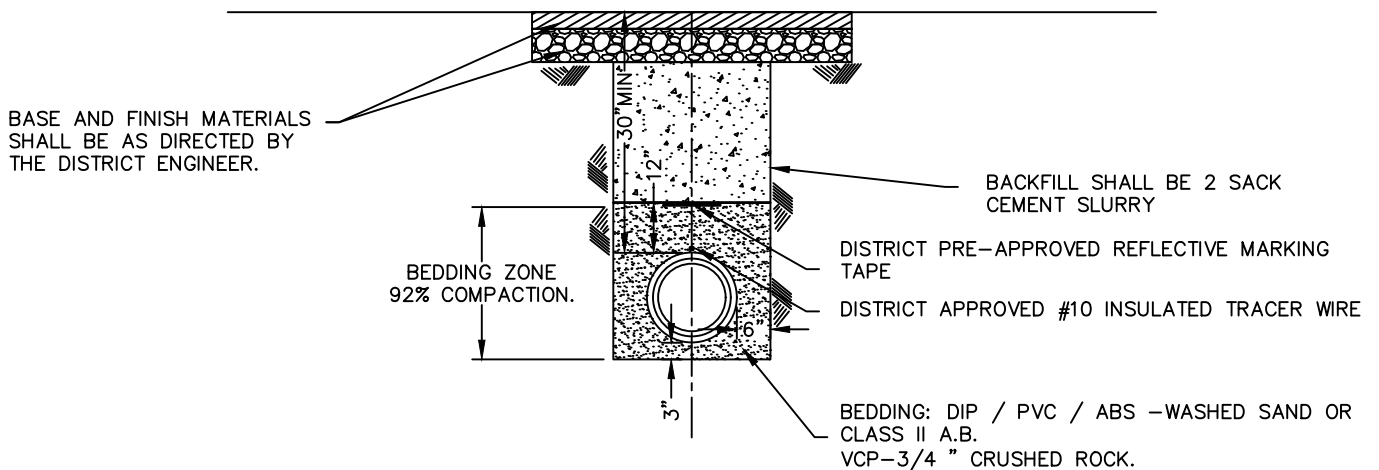
TRENCH WALL AND / OR BACKFILL MATERIALS HAS A MOISTURE LESS THAN 5% OVER OPTIMUM

TRENCH REQUIREMENTS WITHIN UNIMPROVED AREAS (WITHIN OPUD EASEMENT)

TRENCH WALL AND / OR BACKFILL MATERIALS HAS A MOISTURE GREATER THAN 5% OVER OPTIMUM



TRENCH REQUIREMENTS WITHIN UNIMPROVED AREAS WITH LESS THAN THIRTY-SIX (36) INCHES (WITHIN OPUD EASEMENT)



NOTES:

1. ALL CONSTRUCTION PERMITS SHALL BE REQUIRED PRIOR TO CONSTRUCTION.
2. ALL TRENCH WORK DEPTHS FIVE (5) FEET OR GREATER SHALL BE PROVIDED WITH STATE AND FEDERAL APPROVED SAFETY SHORING.
3. ALL BACKFILL MATERIALS SHALL BE APPROVED BY THE DISTRICT PRIOR TO PLACEMENT.
4. COMPACTION TESTING SHALL BE AS DIRECTED BY THE DISTRICT ENGINEER AND SHALL BE PERFORMED BY A DISTRICT APPROVED GEOTECH ENGINEER.
5. CERTIFICATION OF TRENCH BACKFILL COMPACTION SHALL BE REQUIRED PRIOR TO ANY DISTRICT ACCEPTANCE.
6. MINIMUM COVER OVER UTILITIES SHALL BE EIGHTEEN (18) INCHES BELOW FINISH SUBGRADE OR BOTTOM OF SPECIAL SOILS TREATMENT SECTION AND THIRTY-SIX (36) INCHES BELOW FINISH GRADE, REFER TO THE CURRENT DISTRICT IMPROVEMENT STANDARDS.
7. ALL UTILITY PIPING OR CONDUIT INSTALLATION SHALL BE PER THE CURRENT DISTRICT IMPROVEMENT STANDARDS.
8. ALL UTILITY PIPING OR CONDUIT PLACED WITHIN THE TRENCH SHALL HAVE A DISTRICT APPROVED MARKING TAPE (PER THE CURRENT DISTRICT IMPROVEMENT STANDARDS) LOCATED DIRECTLY OVER EACH UTILITY ON TOP OF THE BEDDING MATERIAL (TWELVE (12) INCHES ± ABOVE THE UTILITY).
9. PRESSURIZED LINES SHALL BE PROVIDED WITH A TRACER WIRE PER THE CURRENT DISTRICT IMPROVEMENT STANDARDS.

			OLIVEHURST PUBLIC UTILITY DISTRICT	
			TRENCH DETAIL UNIMPROVED AREA	
5-05	FORMERLY STD. DTL. NO. S-1	SCD	Garry E. Laughlin District Engineer	
DATE	REVISIONS	BY	APPROVED	5-6-2005 DATE
				4-02

GENERAL SEWER LINE DESIGN:

VITRIFIED CLAY PIPE (VEL. 2-5 FPS)

PIPE DIAM. (inches)	MIN. SLOPE (ft. per ft.)	VELOCITY (2-5 fps)	FLOW-MGD (flowing full)
6	0.005	2.02	0.256
8	0.0032	2.05	0.461
10	0.0025	1.99	0.701
12	0.002	2.03	1.03
15	0.0015	2.00	1.60
18	0.0012	2.00	2.35
24	0.0011	2.00	4.95

MANNING'S FORMULA

$$v = \frac{1.486}{n} r^{2/3} s^{1/2}$$

$$Q = Av$$

WHERE,

n = 0.013 for all pipes

HAZEN WILLIAMS' FORMULA

$$Q_{cfs} = (432) s^{0.54} C d^{2.63}$$

WHERE,

C = 110 for clay pipe

C = 130 for plastic pipe

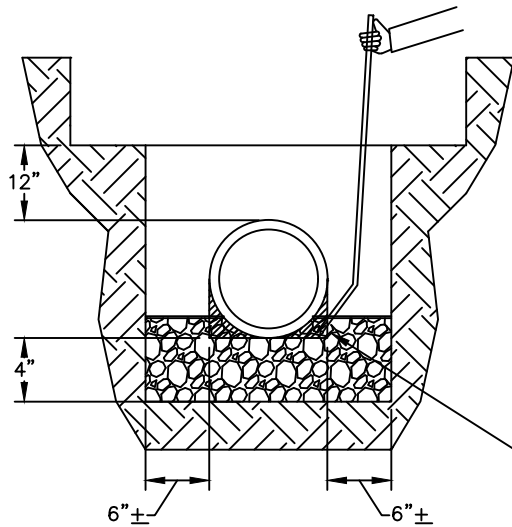
d is measured in feet

GENERAL SEWER LINE REQUIREMENTS:

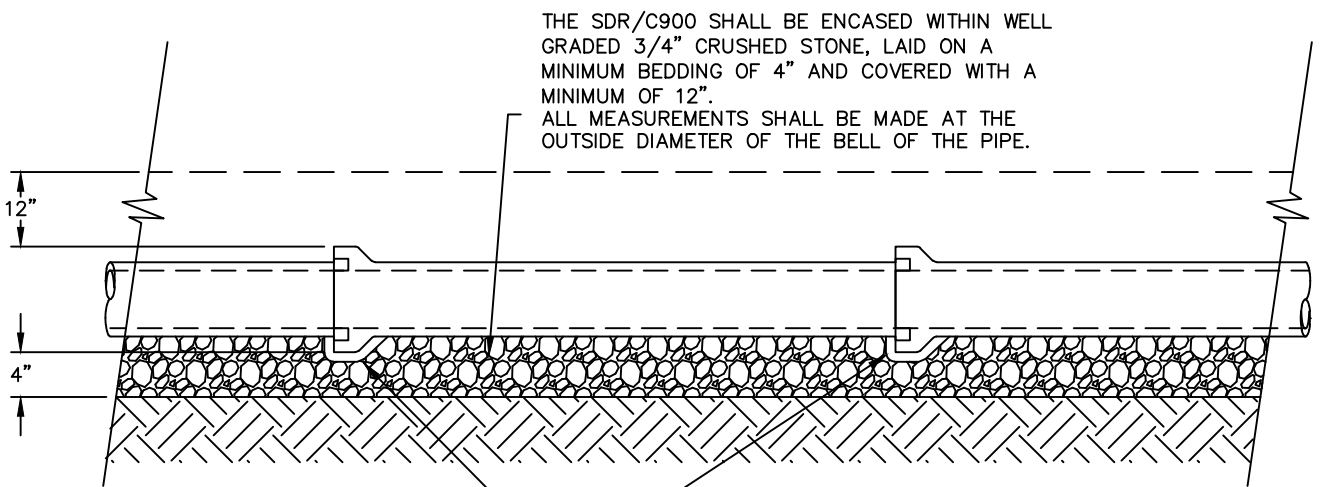
- 1 ALL SEWER SYSTEM DESIGN, MATERIALS, INSTALLATION, AND TESTING SHALL BE PER THE CURRENT OPUD IMPROVEMENT STANDARDS.

THE MINIMUM COVER SHALL BE FIVE (5) FEET, (AN EXCEPTION OF THREE (3) FEET MAY BE GRANTED BY THE DISTRICT ENGINEER ON A CASE BY CASE BASIS ONLY). MINIMUM NET VERTICAL CLEARANCE BETWEEN SUB-GRADE / BOTTOM OF SPECIAL TREATED SOIL SECTION SHALL BE THREE (3) FEET, (AN EXCEPTION OF EIGHTEEN (18) INCHES MAY BE GRANTED BY THE DISTRICT ENGINEER ON A CASE BY CASE BASIS ONLY). THE MINIMUM CLEARANCE SHALL BE TWELVE (12) INCHES BETWEEN UTILITIES. COVER / CLEARANCE SHALL BE AS MEASURED FROM THE MAXIMUM OUTSIDE DIAMETER AT THE BELL OF THE PIPE.
- 2 MATERIALS:
1. SEWER MAIN LINE SHALL BE SDR/C900
2. SEWER SERVICE LATERALS SHALL BE SDR/C900
3. FLEXIBLE COUPLINGS SHALL BE FERNCO WITH SHEAR BANDS ONLY OR PROVEN EQUAL, INDIANA, SEAL OR APPROVED EQUAL. NO BUSHINGS ACCEPTABLE.
- 3 THE TRENCHING, BEDDING, LAYING, COVER, AND BACKFILL SHALL BE PER OPUD IMPROVEMENT STANDARDS, SECTION 4 AND SECTION 5.
- 4 SEWER LINE TEST: AIR TEST PER NATIONAL CLAY PIPE INSTITUTE (SEE LOW PRESSURE AIR TEST FOR SANITARY SEWERS PAMPHLET) TEST PROCEDURES AND REQUIREMENTS WITH MINIMUM TEST LENGTH OF 60 SECONDS. AIR TEST APPLICABLE TO BOTH SEWER LINES & MANHOLES.
- 5 MANHOLE TESTING: VACUUM TEST PROCEDURES AND REQUIREMENTS PER OPUD IMPROVEMENT STANDARDS WITH MINIMUM TEST LENGTH OF 60 SECONDS.
- 6 VIDEO INSPECTION: THE CONTRACTOR IN PRESENCE OF THE DISTRICT SHALL PERFORM CLOSE CIRCUIT VIDEO TAPE TO THE DISTRICT IMPROVEMENT STANDARDS. ANY DEFECTS FOUND OR SEWER LINES OUT OF GRADE BY 1/20 DIA., (BUT NOT EXCEEDING 1" FOR LARGER PIPE), WILL BE REPAIRED OR REMOVED AND REPLACED. ALL LINES TO BE HYDROFLUSHED PRIOR TO VIDEO RECORDING (FORMAT AS DIRECTED BY THE DISTRICT).
- 7 ALL SEWER LINES AND SEWER MANHOLES TO BE TESTED, HYDROFLUSHED AND THE DISTRICT APPROVED PRIOR TO PLACEMENT OF ROAD STRUCTURAL SECTIONS.

.	.	.	OLIVEHURST PUBLIC UTILITY DISTRICT
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5-05	FORMERLY STD. DTL. NO. SS-10, WS-01	SCD	Garry E. Laughlin District Engineer
DATE	REVISIONS	BY	APPROVED
			5-6-2005 DATE
			5-01



"THE BEDDING OR BACKFILL SHOULD BE SHOVEL SLICED UNDER THE HAUNCHES OF THE PIPE TO FILL THE VOIDS IN THIS AREA. SLICING SHOULD BE DONE WHEN THE BEDDING MATERIAL IS NO HIGHER THAN ABOUT ONE-FOURTH OF THE PIPE DIAMETER IF IT IS TO BE EFFECTIVE."
 ASTM C-12 "AFTER EACH PIPE HAS BEEN BROUGHT TO GRADE, ALIGNED, AND PLACED IN FINAL POSITION, DEPOSIT AND SHOVEL SLICE OR SPADE BEDDING MATERIAL UNDER THE PIPE HAUNCHES. WYES AND TEES SHALL BE BEDDED TO PREVENT SHEAR LOADING."



THE SDR/C900 SHALL BE ENCASED WITHIN WELL GRADED 3/4" CRUSHED STONE, LAID ON A MINIMUM BEDDING OF 4" AND COVERED WITH A MINIMUM OF 12".
 ALL MEASUREMENTS SHALL BE MADE AT THE OUTSIDE DIAMETER OF THE BELL OF THE PIPE.

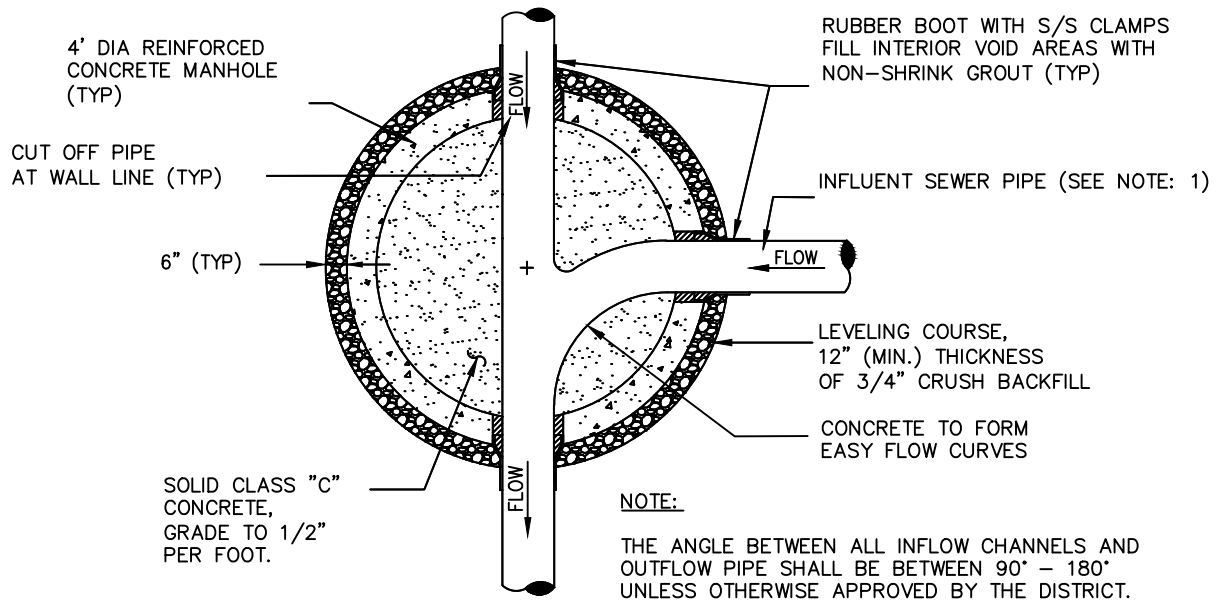
PER THE NATIONAL CLAY PIPE INSTITUTE, CLAY PIPE INSTALLATION HANDBOOK, CHAPTER 4: "HOLES MUST BE DUG AT EACH BELL OR COUPLING SO THAT THE LOAD IS SUPPORTED BY THE PIPE BARREL, NOT THE PIPE BELL. THE BELL OR COUPLING MUST NOT SUPPORT ANY PORTION OF THE LOAD. THE HOLES SHOULD BE NO LARGER THAN NECESSARY TO MAKE SURE THAT THE PIPE BARREL IS RESTING FIRMLY AND EVENLY ON THE TRENCH BOTTOM OR BEDDING MATERIAL."
 ASTM C-12 "BELL HOLES SHALL BE EXCAVATED TO PREVENT POINT LOADING OF THE BELLS OR COUPLINGS OF LAID PIPE, AND TO ESTABLISH FULL-LENGTH SUPPORT OF THE PIPE BARREL."

NOTES:

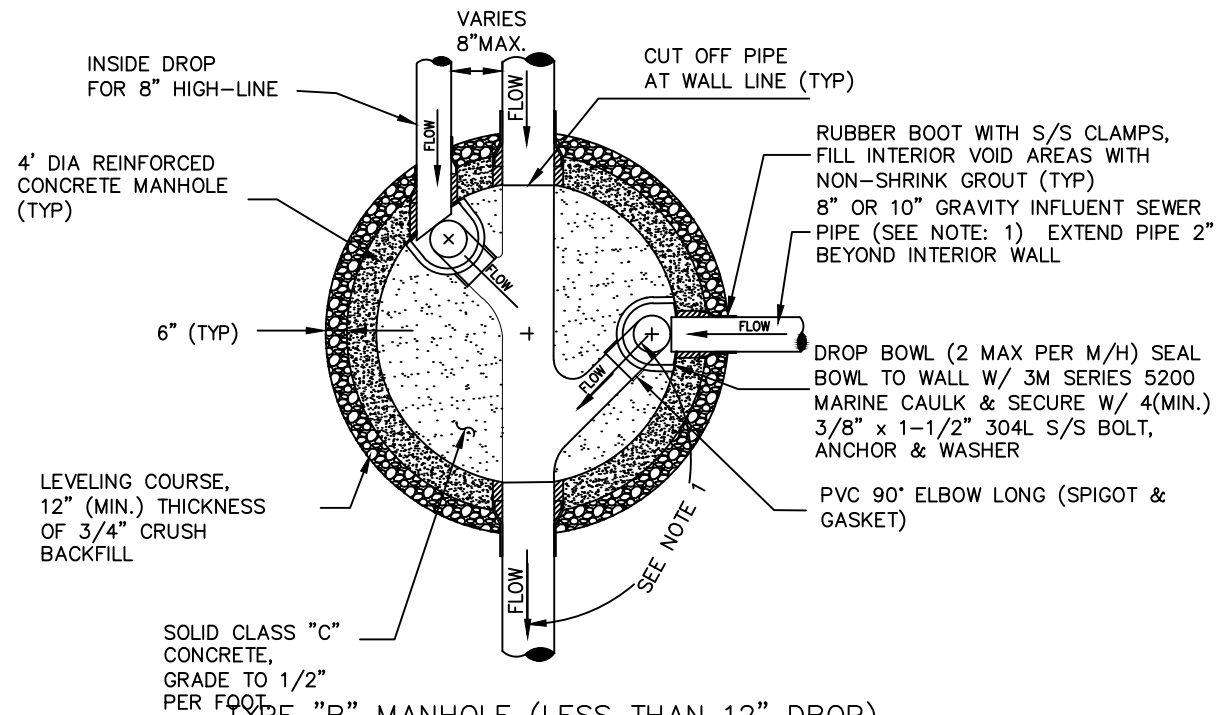
1. MAXIMUM SAG OR HIGH POINT FOR ANY SECTION OF PIPE SHALL BE NO MORE THAN 1/20 THE PIPES INSIDE DIAMETER TO A MAXIMUM OF ONE INCH IN LARGER PIPE, AS SPECIFIED IN THE OPUD IMPROVEMENT STANDARDS.

			OLIVEHURST PUBLIC UTILITY DISTRICT	
			TYPICAL PIPE BEDDING	
			Garry E. Laughlin	
			District Engineer	
5-05	NEW DETAIL	SCD	5-6-2005	
DATE	REVISIONS	BY	APPROVED	DATE

5-02



TYPE "A" MANHOLE



TYPE "B" MANHOLE (LESS THAN 12" DROP)

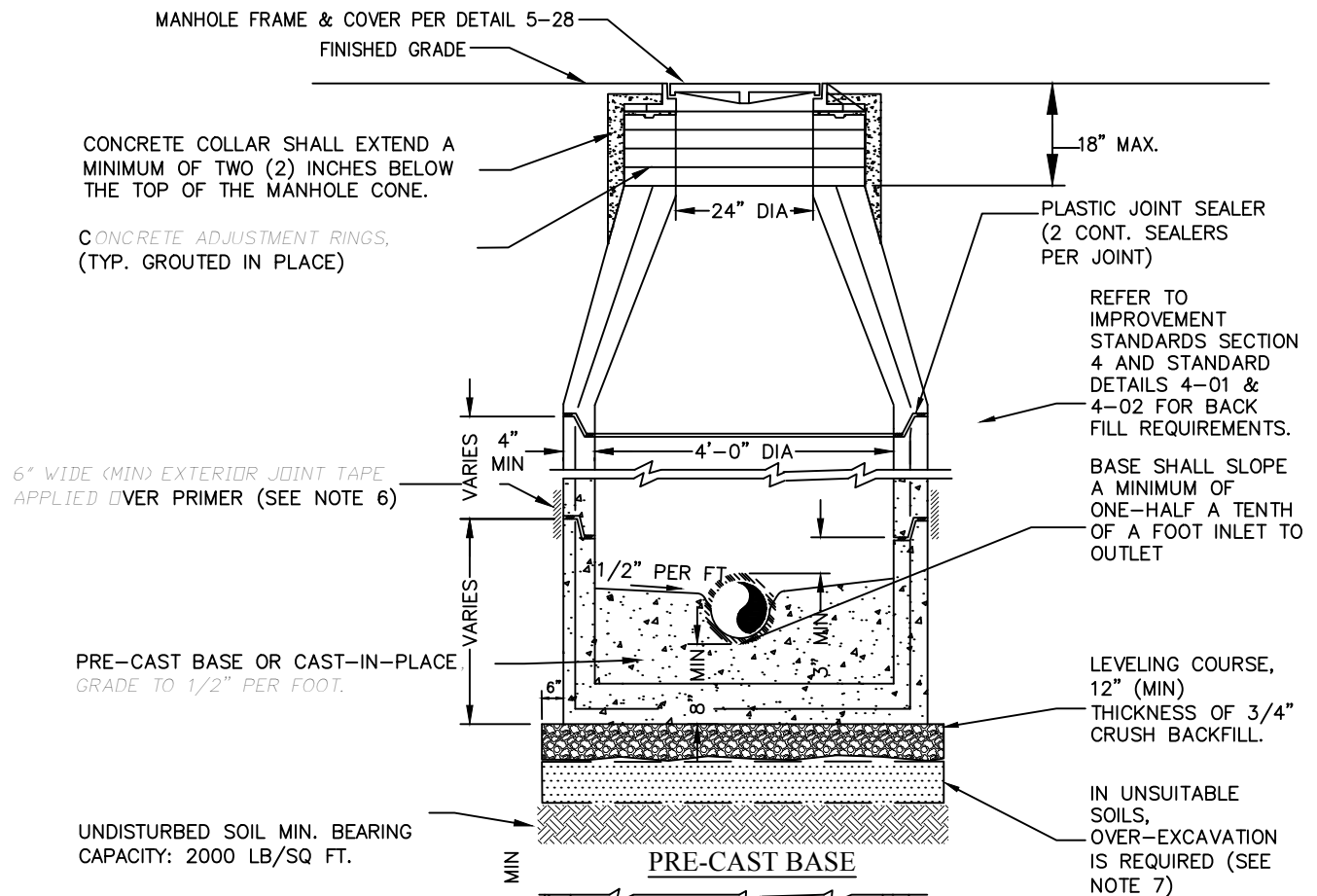
MAY BE USED WHEN TYING INTO EXISTING INFRASTRUCTURE ON A CASE BY CASE BASIS ONLY

NOTES:

1. THE ANGLE BETWEEN ALL INFLUENT FLOW CHANNELS AND EFFLUENT PIPE SHALL BE 90° OR GREATER UNLESS APPROVED OTHERWISE BY THE DISTRICT.
2. THE 8" HIGH-LINE, WHERE UTILIZED, SHALL ENTER THE MANHOLE ON-CENTER OR OFF-CENTER AS SHOWN ABOVE.

			OLIVEHURST PUBLIC UTILITY DISTRICT	
			MANHOLE TYPE "A" & "B" BASE DETAILS	
5-05	NEW DETAIL	SCD	Garry E. Laughlin	
DATE	REVISIONS	BY	District Engineer	5-6-2005
			APPROVED	DATE

5-10



THE CAST-IN-PLACE BASE THICKNESS AND REINFORCEMENT SHALL BE AS DESIGNED BY THE DESIGN ENGINEER.

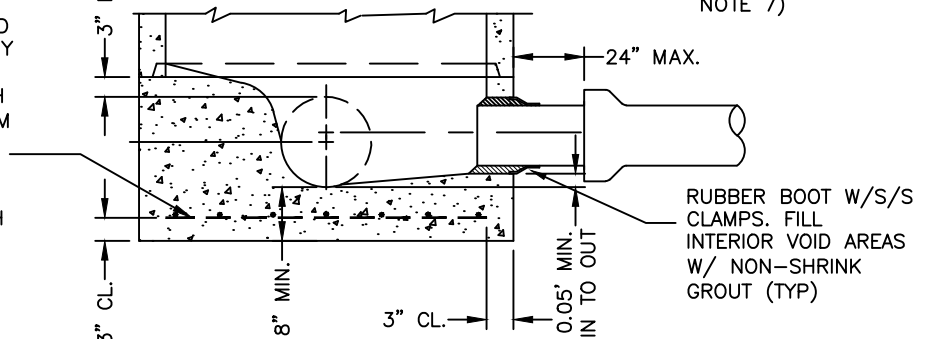
A) FOR MANHOLES EXTENDING TO A FINISH DEPTH OF FOURTEEN (14) FEET, A MINIMUM OF EIGHT (8) INCHES WITH A MINIMUM OF ONE (1) MAT OF NUMBER FOUR (#4) REINFORCEMENT BARS EACH WAY.

B) FOR MANHOLES EXTENDING TO A FINISH DEPTH OF GREATER THAN FOURTEEN (14) FEET, A MINIMUM OF TWELVE (12) INCHES WITH A MINIMUM OF TWO (2) MATS OF NUMBER FOUR (#4) REINFORCEMENT BARS EACH WAY.

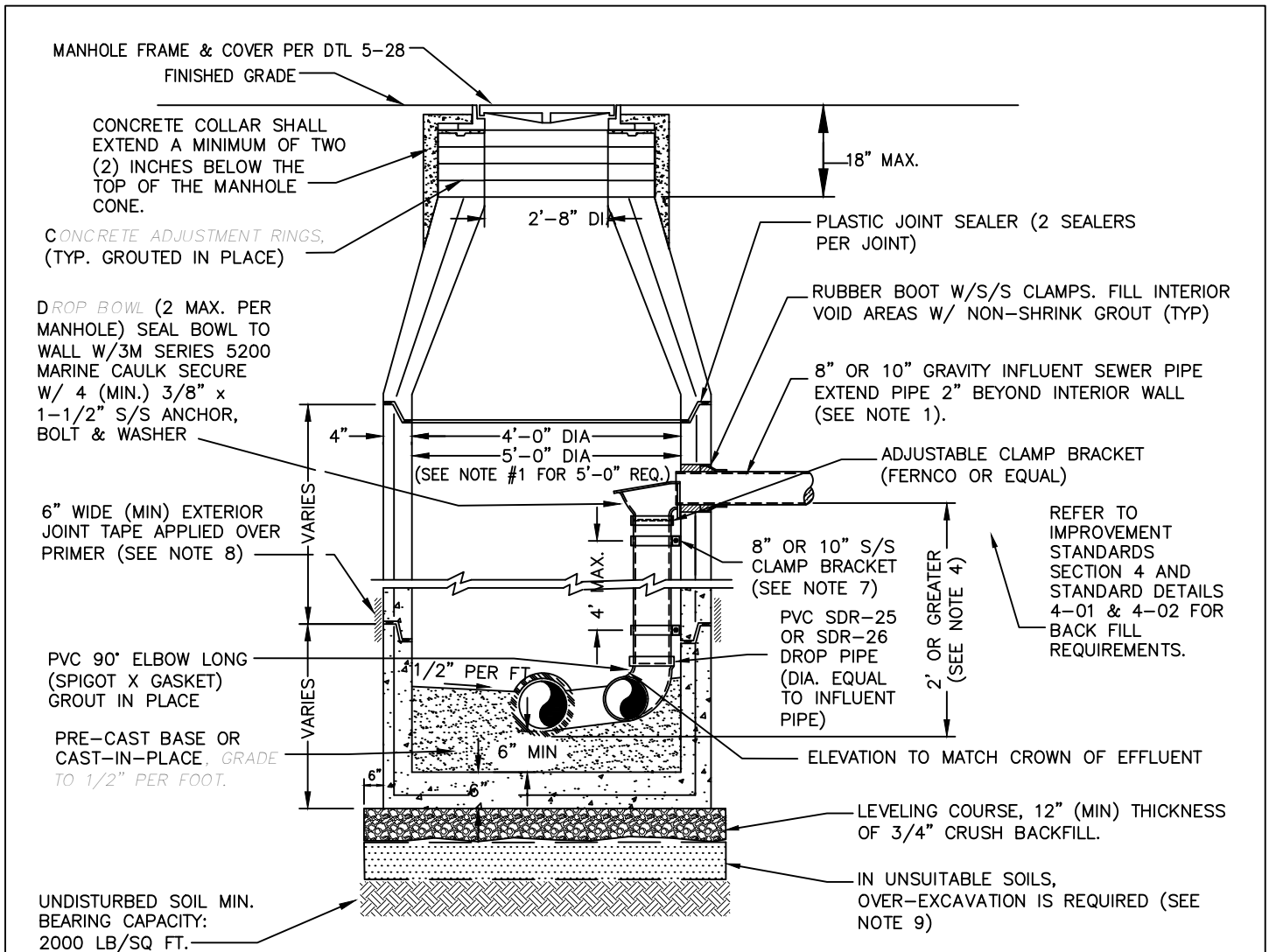
NOTES:

1. PRECAST POLYMER CONCRETE MANHOLE SECTIONS TO BE MANUFACTURED IN ACCORDANCE WITH THE LATEST EDITIONS OF A.S.T.M. C-478 WITH 4000 LB. CONC., TYPE II CEMENT. ALL LIFTING HOLES AND OUTSIDE INSERTS SHALL BE FILLED WITH NON-SHRINK GROUT.
2. THE DISTRICT MAY REQUIRE THE APPLICATION OF TWO COATS OF BITUMINOUS WATERPROOFING MATERIAL TO THE INTERIOR AND EXTERIOR OF THE MANHOLE AND THE INTERIOR OF ADJUSTMENT RINGS IN AREAS WITH GROUND PROBLEMS.
3. TYPE "B" MANHOLE MUST BE USED FOR 2' OR GREATER INFLUENT PIPE DROPS..
4. (CASE BY CASE BASIS ONLY) THE DROP BOWL ASSEMBLY SHALL BE INSTALLED PRIOR TO APPLICATION OF SPECIALTY LINING MATERIAL.
5. (CASE BY CASE BASIS ONLY) A TYPE "D" MANHOLE SHALL BE UTILIZED WHEN THREE OR MORE (2' OR GREATER) DROPS ARE INVOLVED OR WHEN INFLUENT PIPES AREA LARGER THAN 10" IN SIZE.
6. ALL MANHOLE JOINTS BELOW THE TOP CONE SECTION SHALL INCLUDE A 6" WIDE (MIN) EXTERIOR JOINT TAPE (W/PRIMER). TAPE ON THE CONE SECTION IS REQUIRED.
7. IN SILTS, CLAY OR HIGHLY ORGANIC SOILS (FINE-GRAINED SOILS INCLUDING SOIL GROUPS ML, CL, OL, MH, CH, OH AND PT) THE SOILS SHALL BE OVER-EXCAVATED AN ADDITIONAL 24" (AT A MIN.) AND BACKFILLED WITH AASHTO CLASS A-3 SOIL (COMPACTED TO 95%, ASTM D1557) OR OVER-EXCAVATE AN ADDITIONAL 12" (AT A MIN.) AND BACKFILL WITH GRANULAR BACKFILL AND RAT SLAB.

CAST-IN-PLACE BASE(CASE BY CASE ONLY)



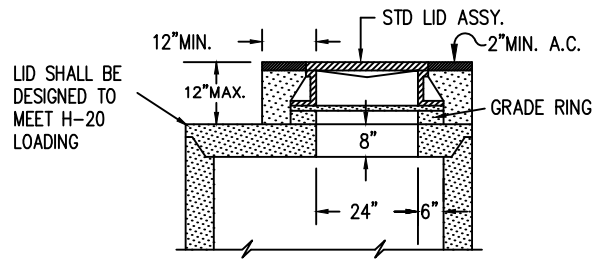
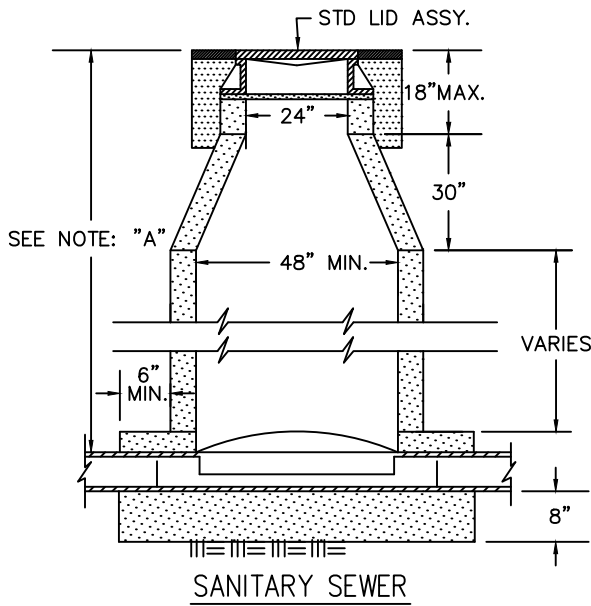
			OLIVEHURST PUBLIC UTILITY DISTRICT	
			TYPE "A" MANHOLE	
			Garry E. Laughlin District Engineer	5-14
5-05	FORMERLY STD. DTL. NO. SS-5	SCD	5-6-2005	
DATE	REVISIONS	BY	APPROVED	DATE



NOTES: TYPE B MANHOLES MAY BE USED FOR TYING INTO EXISTING INFRASTRUCTURE ON CASE BY CASE BASIS ONLY

1. THE STANDARD ASSEMBLY IS FOR 8" OR 10" GRAVITY INFLUENT LINES ONLY. NO DROPS ALLOWED FOR FORCE MAINS. MAXIMUM OF 2 INSIDE DROP BOWLS PER MANHOLE. A 5'-0" DIA. MANHOLE (4" MIN THICK WALLS) IS REQUIRED IF TWO INSIDE DROPS ARE CONSTRUCTED WITH ONE OR BOTH BEING 10" SIZE. DROP BOWL BY RELINER OR APPROVED EQUAL REQUIRED. THE INSIDE DROP FOR AN 8" HIGH-LINE SHALL BE CONSTRUCTED SIMILAR TO ABOVE.
2. PRECAST MANHOLE SECTIONS TO BE MANUFACTURED IN ACCORDANCE WITH THE LATEST EDITIONS OF A.S.T.M. C-478 WITH 4000 LB. CONC., TYPE II CEMENT. ALL LIFTING HOLES AND OUTSIDE INSERTS SHALL BE FILLED WITH NON-SHRINK GROUT.
3. THE DISTRICT REQUIRES THE APPLICATION OF TWO COATS OF BITUMINOUS WATERPROOFING MATERIAL TO THE INTERIOR AND EXTERIOR OF THE MANHOLE AND THE INTERIOR OF ADJUSTMENT RINGS.
4. TYPE "B" MANHOLE MUST BE USED FOR 2' OR GREATER INFLUENT PIPE DROPS..
5. THE DROP BOWL ASSEMBLY SHALL BE INSTALLED PRIOR TO APPLICATION OF SPECIALTY LINING MATERIAL.
6. A TYPE "C" MANHOLE SHALL BE UTILIZED WHEN THREE OR MORE (2' OR GREATER) DROPS ARE INVOLVED OR WHEN INFLUENT PIPES AREA LARGER THAN 10" IN SIZE.
7. ADJUSTABLE CLAMPING BRACKET (MIN. 2 PER DROP BOWL ASSY). 1-1/2" WIDE, 11 GA. W/ 3/8" DIA. 18-8 PINCH BOLTS AND NUTS. SECURE TO M/H WALL WITH (2) 3/8" X 1" BOLT, ANCHOR & WASHER PER BRACKET ASSY. ALL 304 OR 316 STAINLESS STEEL MATERIALS.
8. ALL MANHOLE JOINTS BELOW THE TOP CONE SECTION SHALL INCLUDE A 6" WIDE (MIN) EXTERIOR JOINT TAPE (W/PRIMER). TAPE ON THE CONE SECTION IS REQUIRED.
9. IN SILTS, CLAY OR HIGHLY ORGANIC SOILS (FINE-GRAINED SOILS INCLUDING SOIL GROUPS ML, CL, OL, MH, CH, OH AND PT) THE SOILS SHALL BE OVER-EXCAVATED AN ADDITIONAL 24" (AT A MIN.) AND BACKFILLED WITH AASHTO CLASS A-3 SOIL (COMPACTED TO 95%, ASTM D1557) OR OVER-EXCAVATE AN ADDITIONAL 12" (AT A MIN.) AND BACKFILL WITH GRANULAR BACKFILL AND RATSLAB

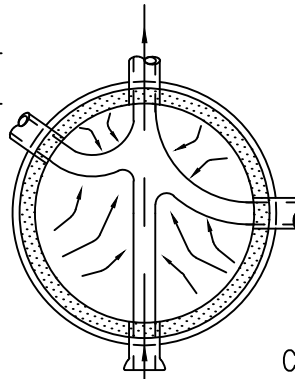
			OLIVEHURST PUBLIC UTILITY DISTRICT	
			DROP CONNECTION TYPE "B" MANHOLE	
6-19	CHANGED LANGUAGE IN NOTE 3	CNO	Garry E. Laughlin District Engineer APPROVED _____ DATE 5-6-2005	
5-05	NEW DETAIL	SCD		
DATE	REVISIONS	BY		
			5-15	



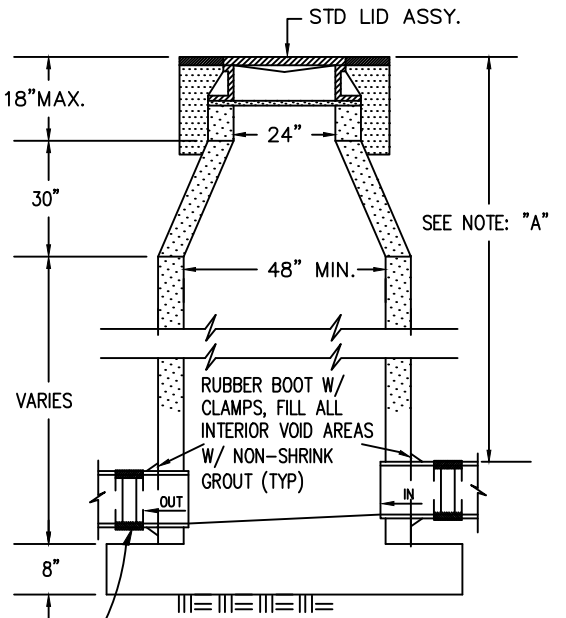
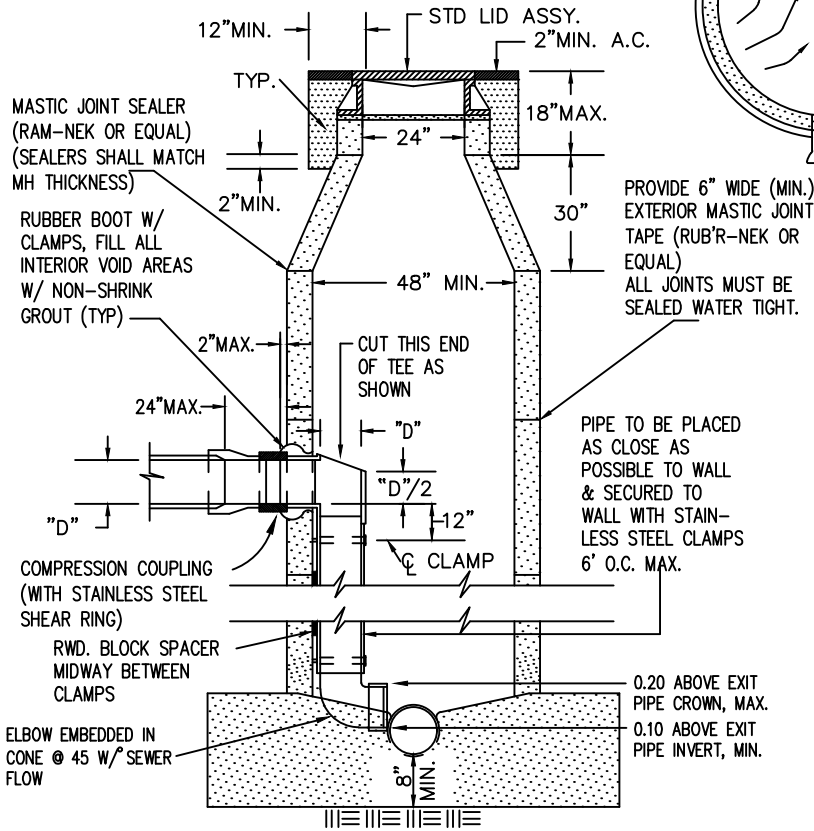
SHALLOW MANHOLE DETAIL
(FOR PIPES WITH LESS THAN 4' COVER)

NOTES:
A.) FOR PIPES WITH LESS THAN 4' COVER USE THE SHALLOW MANHOLE DETAIL

- DROP INLET NOTES:**
1. ALL INSIDE DROP PIPING TO BE P.V.C.
 2. CEMENT ALL JOINTS.
 3. DROP CONNECTION PIPE AND FITTINGS TO BE SAME SIZE AS LATERAL.
 4. CLAMPS TO BE 1 1/2" X 12 ga. STAINLESS STEEL, ANCHORED TO M.H. WALL WITH 2 1/2" STAINLESS STEEL WEDGE OR EPOXY SET.
 5. USE DROP CONNECTION WHENEVER INVERT OF CONNECTING SEWER IS 2'-0" OR MORE ABOVE M.H. INVERT.



CHANNELIZATION FOR SANITARY SEWER MANHOLES



SANITARY SEWER
(INSIDE DROP)

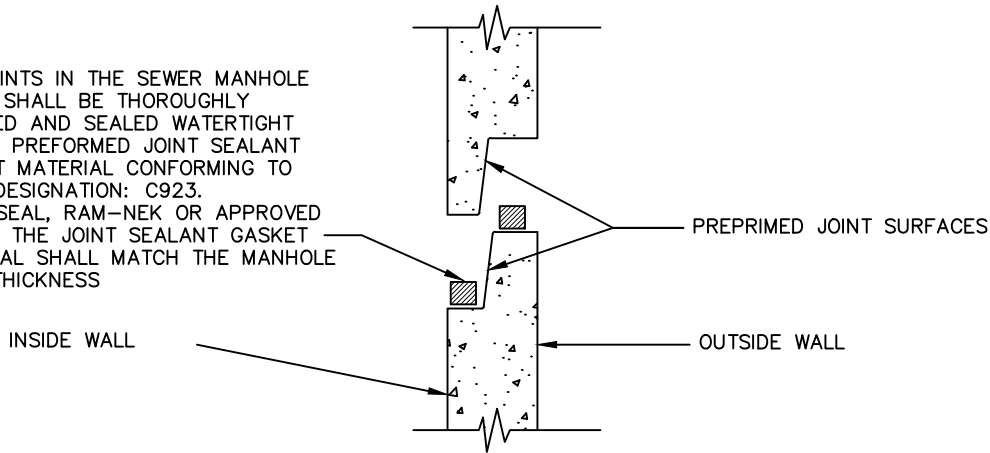
CAST-IN-PLACE (CASE BY CASE ONLY)
INSIDE BOTTOM SHALL BE WET BRUSHED SMOOTH

NOTES:

1. OPUD WILL REQUIRE AN APPROVED BITUMASTIC BE APPLIED TO THE ENTIRE EXTERIOR OF ANY MANHOLE TO LIMIT ANY INFILTRATION OF GROUND WATERS.*NOT REQUIRED FOR ARMOROCK MANHOLES
2. INTERIOR JOINTS AND LIFT HOLES OF ALL MANHOLES SHALL HAVE A NON-SHRINK GROUT APPLIED W/ A WET BRUSH SMOOTH FINISH
3. ALL MANHOLES SHALL BE INSPECTED BY OPUD PRIOR TO ANY BACKFILL BEING PLACED.
4. ANY AND ALL MANHOLES WITH ANY GROUND WATER INFILTRATION SHALL NOT BE ACCEPTED BY OPUD AND MUST BE REPAIRED.

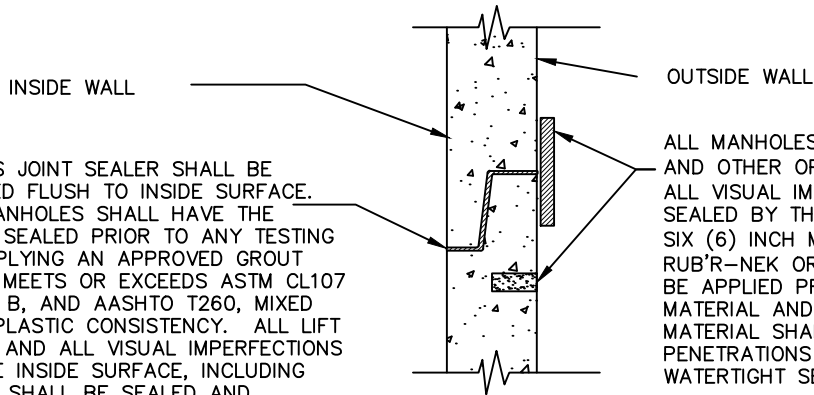
			OLIVEHURST PUBLIC UTILITY DISTRICT	
			TYPICAL MANHOLES	
6-19	CHANGED LANGUAGE IN NOTE 1	CNO	Garry E. Laughlin District Engineer	
5-05	FORMERLY STD. DTL. NO. SS-5	SCD		
DATE	REVISIONS	BY	APPROVED	5-6-2005 DATE

ALL JOINTS IN THE SEWER MANHOLE SHAFT SHALL BE THOROUGHLY CLEANED AND SEALED WATERTIGHT WITH A PREFORMED JOINT SEALANT GASKET MATERIAL CONFORMING TO ASTM DESIGNATION: C923. KENT-SEAL, RAM-NEK OR APPROVED EQUAL. THE JOINT SEALANT GASKET MATERIAL SHALL MATCH THE MANHOLE WALL THICKNESS



JOINT ASSEMBLY DETAIL

EXCESS JOINT SEALER SHALL BE TRIMMED FLUSH TO INSIDE SURFACE. ALL MANHOLES SHALL HAVE THE INSIDE SEALED PRIOR TO ANY TESTING BY APPLYING AN APPROVED GROUT WHICH MEETS OR EXCEEDS ASTM CL107 GRADE B, AND AASHTO T260, MIXED TO A PLASTIC CONSISTENCY. ALL LIFT HOLES AND ALL VISUAL IMPERFECTIONS TO THE INSIDE SURFACE, INCLUDING JOINTS SHALL BE SEALED AND BRUSHED TO A SMOOTH FINISH WITH A WET BRUSH.



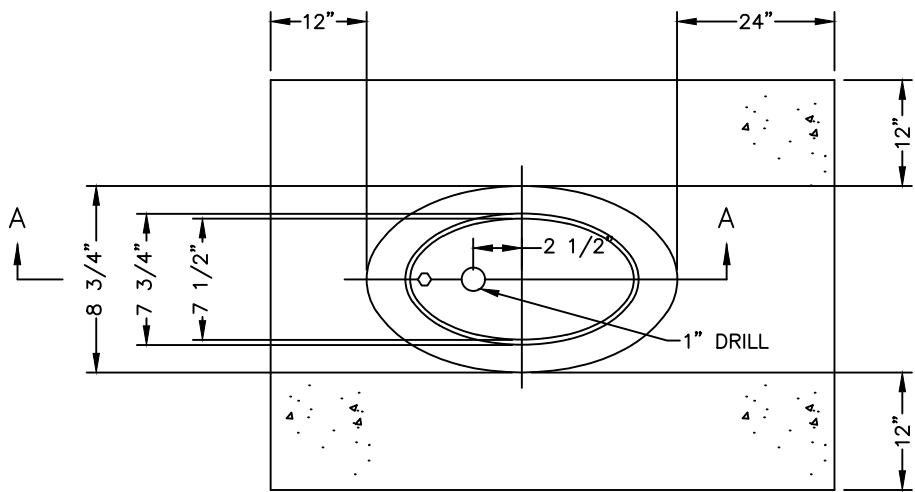
ALL MANHOLES SHALL HAVE THE OUTSIDE OF ALL JOINTS AND OTHER OPENINGS (INCLUDING ALL PIN LIFT HOLES AND ALL VISUAL IMPERFECTIONS TO THE OUTSIDE SURFACE) SEALED BY THE APPLICATION OF AN APPROVED FLEXIBLE SIX (6) INCH MINIMUM MASTIC TAPE MATERIAL, (HENRY - RUB'R-NEK OR APPROVED EQUAL). THE JOINT TAPE SHALL BE APPLIED PRIOR TO THE PLACEMENT OF ANY BACKFILL MATERIAL AND PRIOR TO ANY TESTING. A BITUMASTIC MATERIAL SHALL BE APPLIED AROUND ALL PIPE PENETRATIONS OF THE MANHOLE TO PROVIDE A WATERTIGHT SEAL.

COMPLETED JOINT DETAIL

NOTES:

1. THE DISTRICT REQUIRES THE APPLICATION OF A LAYER (APPROXIMATELY 1/8" THICK) OF A WATERPROOFING BITUMASTIC MATERIAL TO THE ENTIRE EXTERIOR SURFACE OF ANY MANHOLE PRIOR TO BACKFILLING. *NOT REQUIRED FOR ARMOROCK MANHOLES
2. THE DISTRICT REQUIRES THE APPLICATION OF AN INTERIOR COATING SUCH AS: TAMMS-HEY'DI, KOESTER NB1, TEGRAPROOF, OR XYPEX, TO SEAL THE INTERIOR SURFACE OF ANY MANHOLE TO LIMIT THE INFILTRATION OF GROUND WATER.*NOT REQUIRED FOR ARMOROCK MANHOLES

			OLIVEHURST PUBLIC UTILITY DISTRICT	
			MANHOLE JOINTS	
6-19	CHANGED LANGUAGE IN NOTES 1&2	CNO	Garry E. Laughlin District Engineer	
5-05	NEW DETAIL	SCD		
DATE	REVISIONS	BY	APPROVED	5-6-2005 DATE

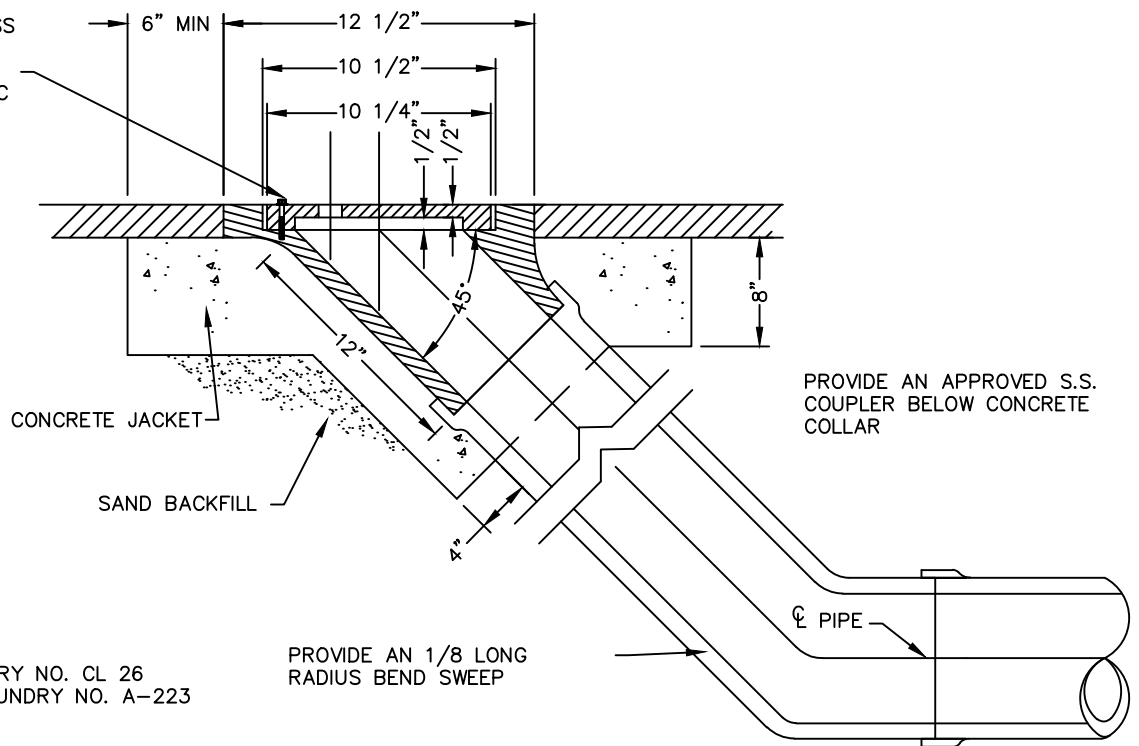


****TEMPORARY ONLY. TOP OF LINE REQUIRES MANHOLE****

LID SHALL STATE "SEWER COTG" ON TOP

PLAN

1/4" X 1-1/2" BRASS HEX HD. CAP SCREW - 20 NC-2 WHEN LOCATED IN A PUBLIC UTILITY EASEMENT

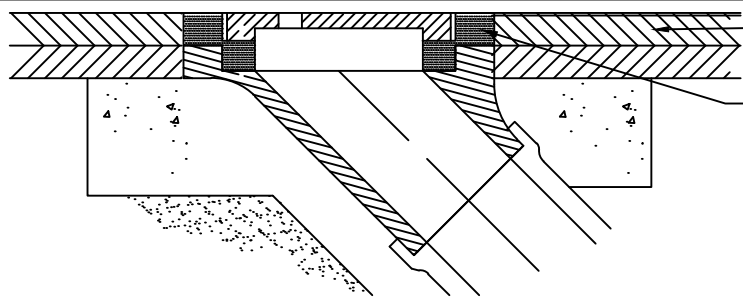


PROVIDE AN APPROVED S.S. COUPLER BELOW CONCRETE COLLAR

PROVIDE AN 1/8 LONG RADIUS BEND SWEEP

EMPIRE FOUNDRY NO. CL 26
PINKERTON FOUNDRY NO. A-223
OR EQUAL.

SECTION A-A



FINISH AS DIRECTED BY THE YUBA COUNTY PUBLIC WORKS.

PROVIDE PINKERTON OR EQUAL RISER RING

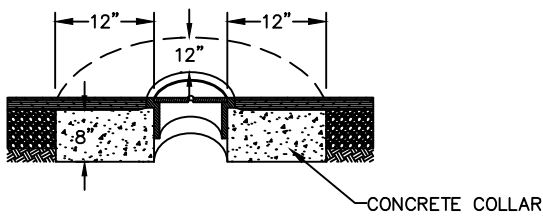
REMOVE EXIST. A.C. AROUND CLEANOUT COVER & INSTALL RISER RING & RESURFACE OR PATCH AS NECESSARY

EXTENSION FOR REPAVING AREAS

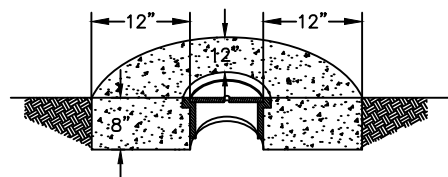
			OLIVEHURST PUBLIC UTILITY DISTRICT	
			MAIN LINE CLEANOUT TO GRADE	
5-05	FORMERLY STD. DTL. NO. SS-2, & SS-3	SCD	Garry E. Laughlin	
DATE	REVISIONS	BY	District Engineer	5-6-2005
			APPROVED	DATE

5-25

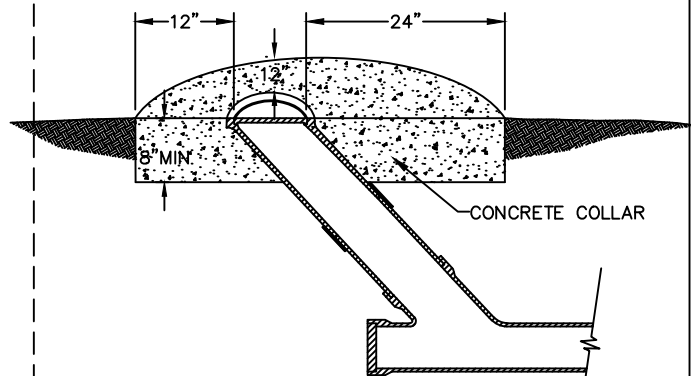
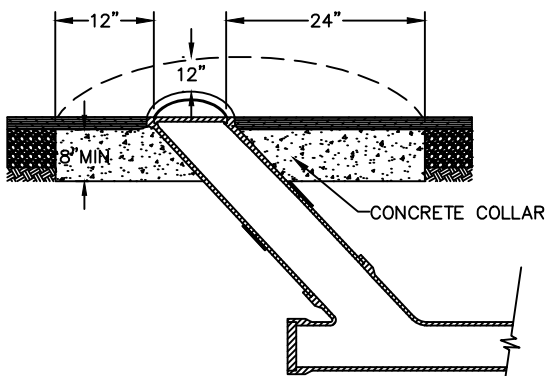
TYPICAL IN IMPROVED AREAS



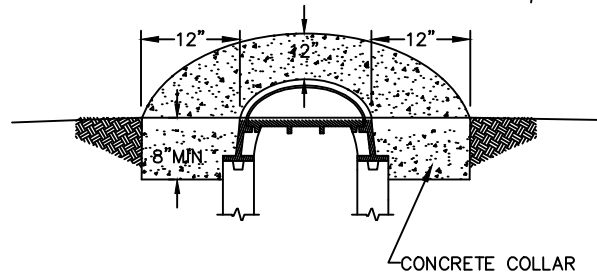
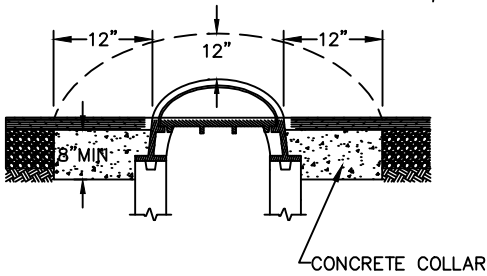
TYPICAL IN UNIMPROVED AREAS



G-5 TYPE BOX



CLEAN-OUT-TO-GRADE BOX

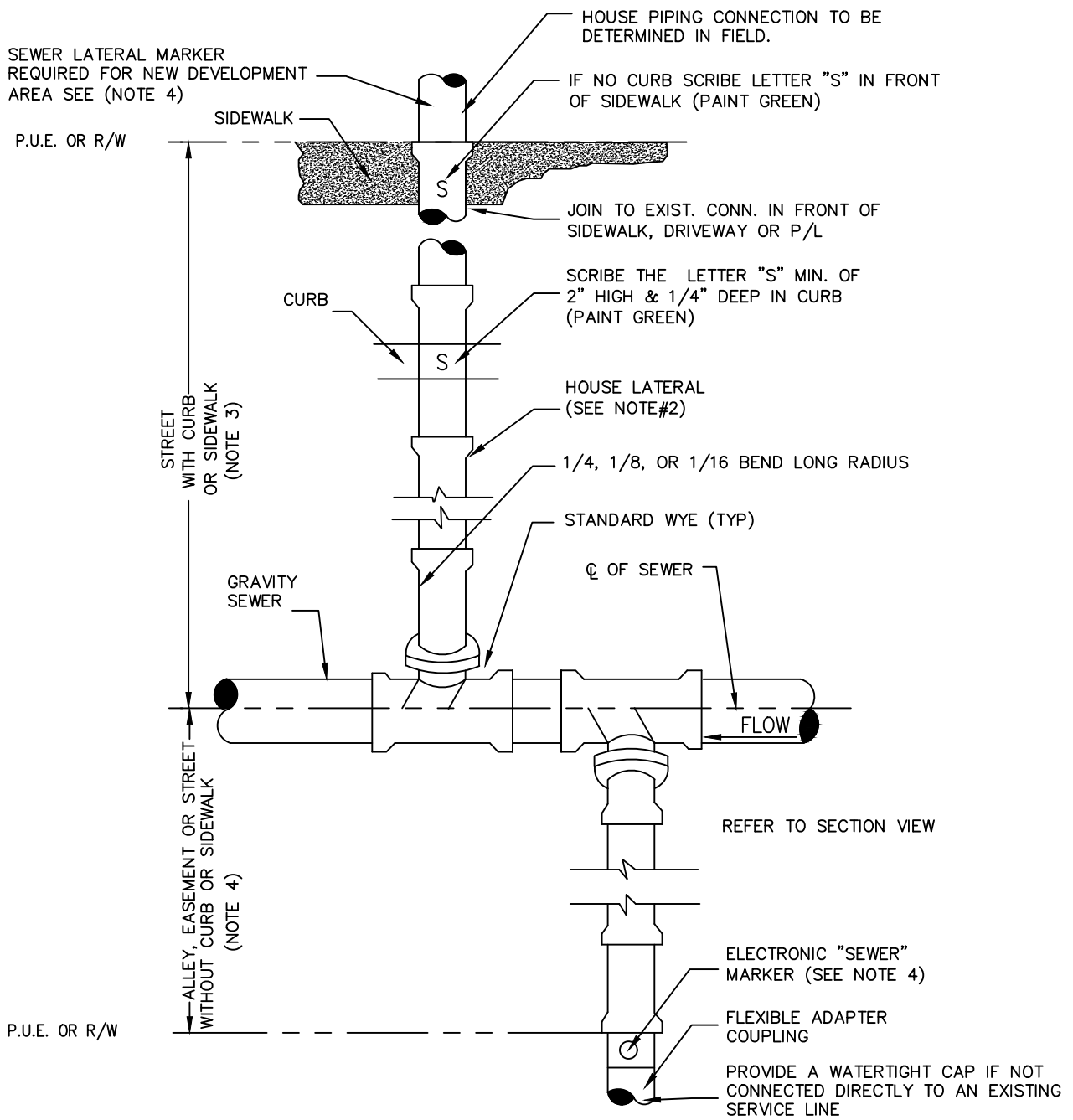


MANHOLE

TEMPORARY ONLY. TOP OF LINE REQUIRES MANHOLE

			OLIVEHURST PUBLIC UTILITY DISTRICT	
			TYPICAL CONCRETE COLLARS	
5-05	NEW DETAIL	SCD	Garry E. Laughlin	
DATE	REVISIONS	BY	District Engineer	5-6-2005
			APPROVED	DATE

5-26



NOTES:

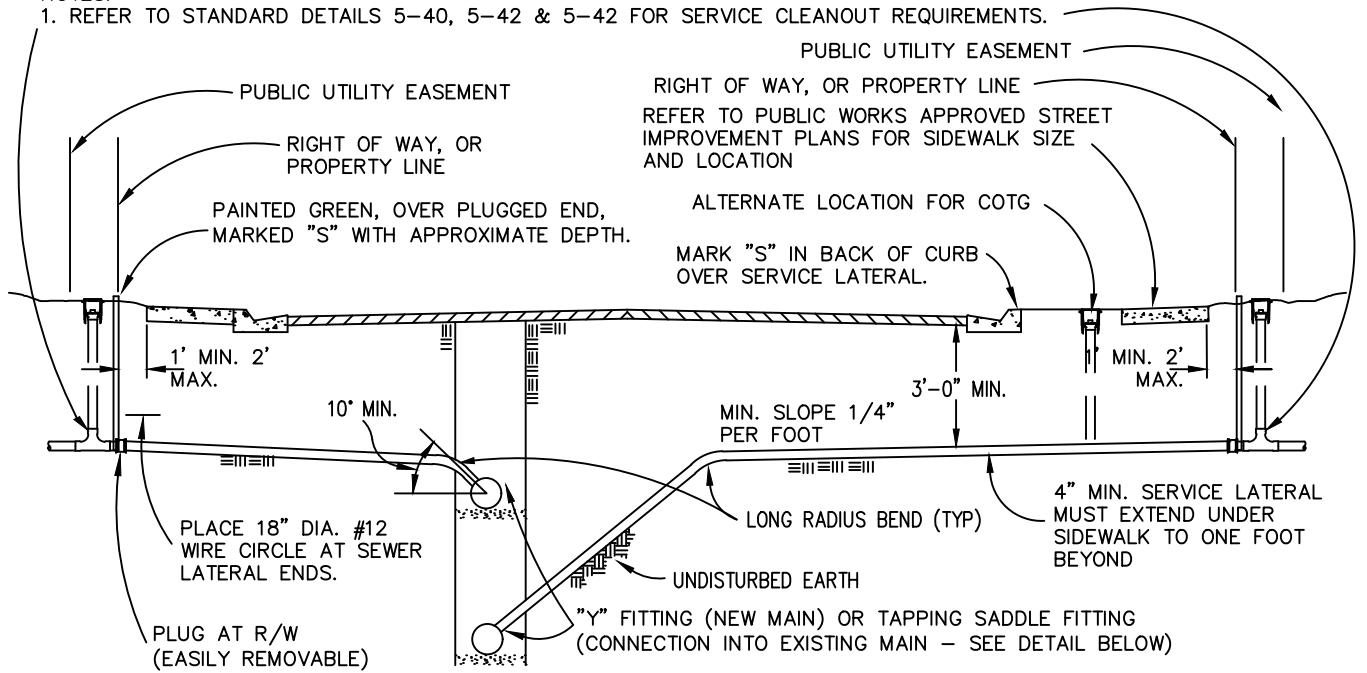
1. ALL PIPING, FITTINGS, AND PLACEMENT SHALL BE PER O.P.U.D. IMPROVEMENT STANDARDS AND TECHNICAL SPECIFICATIONS.
2. FINAL INSTALLATION DETAILS TO BE SUBMITTED TO O.P.U.D. FOR APPROVAL.
3. IN AREAS WITH CURB – THE LETTER "S" IS TO BE STAMPED ON THE BACK TOP OF THE CURB AT EACH SERVICE LOCATION. THE STAMP SHALL BE APPROVED BY THE DISTRICT PRIOR TO USE.
4. FOR SEPTIC TANK PHASE-OUT PROJECTS WHERE NO CONCRETE CURB EXIST, AN ELECTRONIC "SEWER" MARKER IS REQUIRED FOR ALL LATERALS WHICH ARE "NOT IN USE". FOR NEW DEVELOPMENT AREAS WHERE THE SEWER LATERAL IS "NOT IN USE", A LANDSCAPE TIMBER OR 3x3 MIN. P.T. POST (TOP PAINTED GREEN) SHALL BE INSTALLED UP TO GRADE AND CAPPED.
5. THE MINIMUM SIZE OF ALL RESIDENTIAL SERVICE LINES SHALL BE FOUR (4) INCHES. THE MAXIMUM LENGTH OF A RESIDENTIAL SERVICE LINE SHALL BE 60 FEET (LENGTH BETWEEN SEWER MAIN OR MANHOLE TO CUSTOMERS PROPERTY LINE).
6. THE MINIMUM SIZE OF ALL COMMERCIAL SERVICE LINES SHALL BE SIX (6) INCHES.
7. NO SEWER SERVICE CONNECTIONS PERMITTED ON ANY GRAVITY SEWER LINE WHICH IS SIXTEEN (16) INCHES OR LARGER.

			OLIVEHURST PUBLIC UTILITY DISTRICT	
			SEWER CONNECTION PLAN VIEW	
			Garry E. Laughlin	
			District Engineer	
5-05	NEW DETAIL	SCD	5-6-2005	
DATE	REVISIONS	BY	APPROVED	DATE

5-30

NOTES:

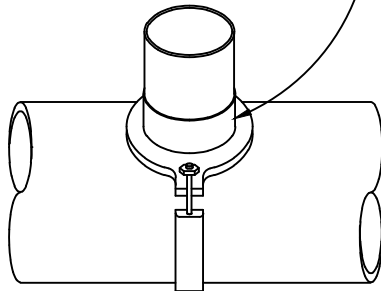
1. REFER TO STANDARD DETAILS 5-40, 5-42 & 5-42 FOR SERVICE CLEANOUT REQUIREMENTS.



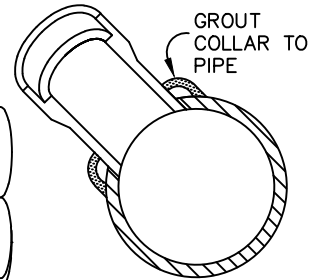
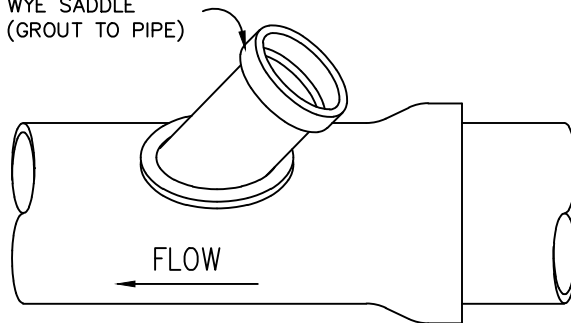
NOTES:

- SERVICES SHALL HAVE SAME BEDDING AND BACKFILL AS MAIN SEWER.
- ANY REPAIRS DONE TO SERVICES OR MAINS SHALL HAVE COMPRESSION COUPLINGS WITH STAINLESS STEEL SHEAR RINGS

ROMAC INDUSTRIES, INC., "CB" SEWER SADDLE (CONNECTED TO PIPE W/STAINLESS STEEL STRAP) OR DISTRICT APPROVED EQUAL.



TAPPING COLLAR WYE SADDLE (GROUT TO PIPE)

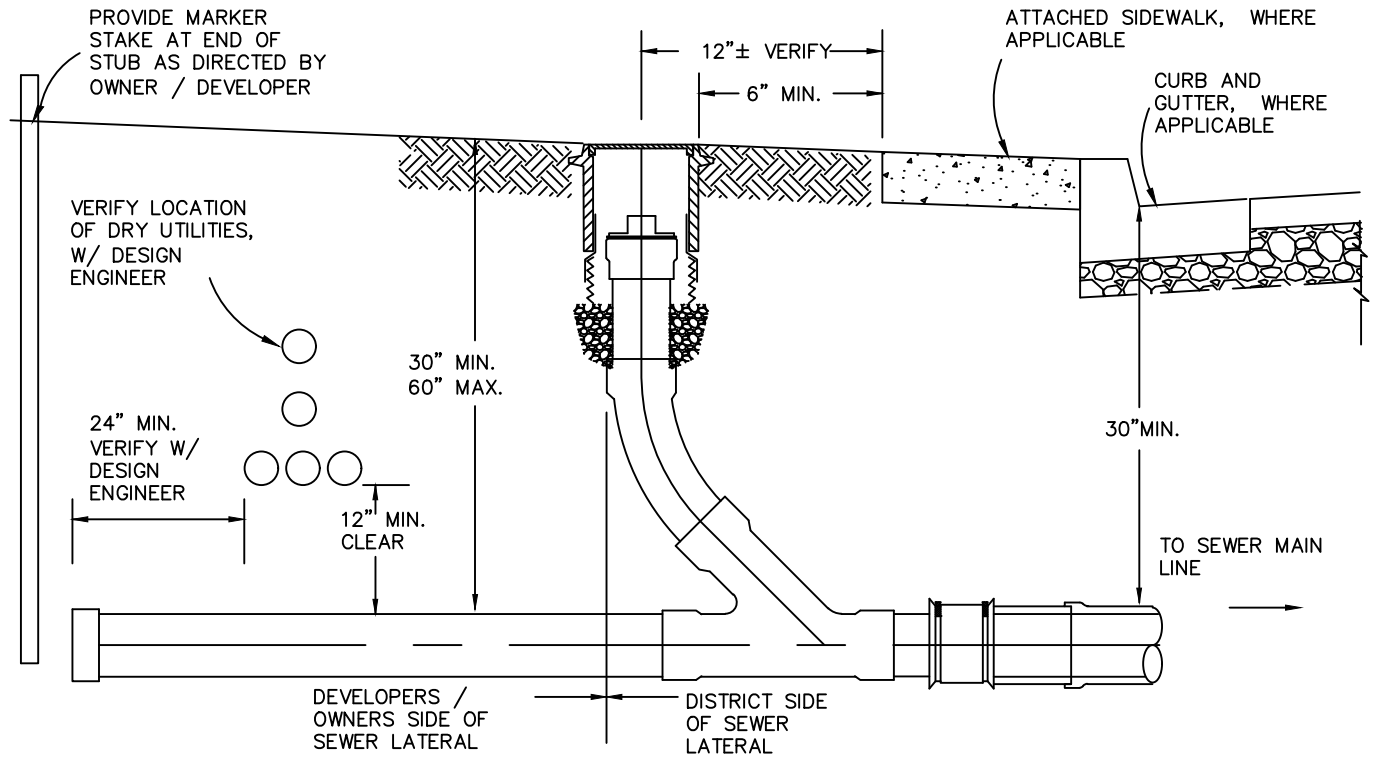
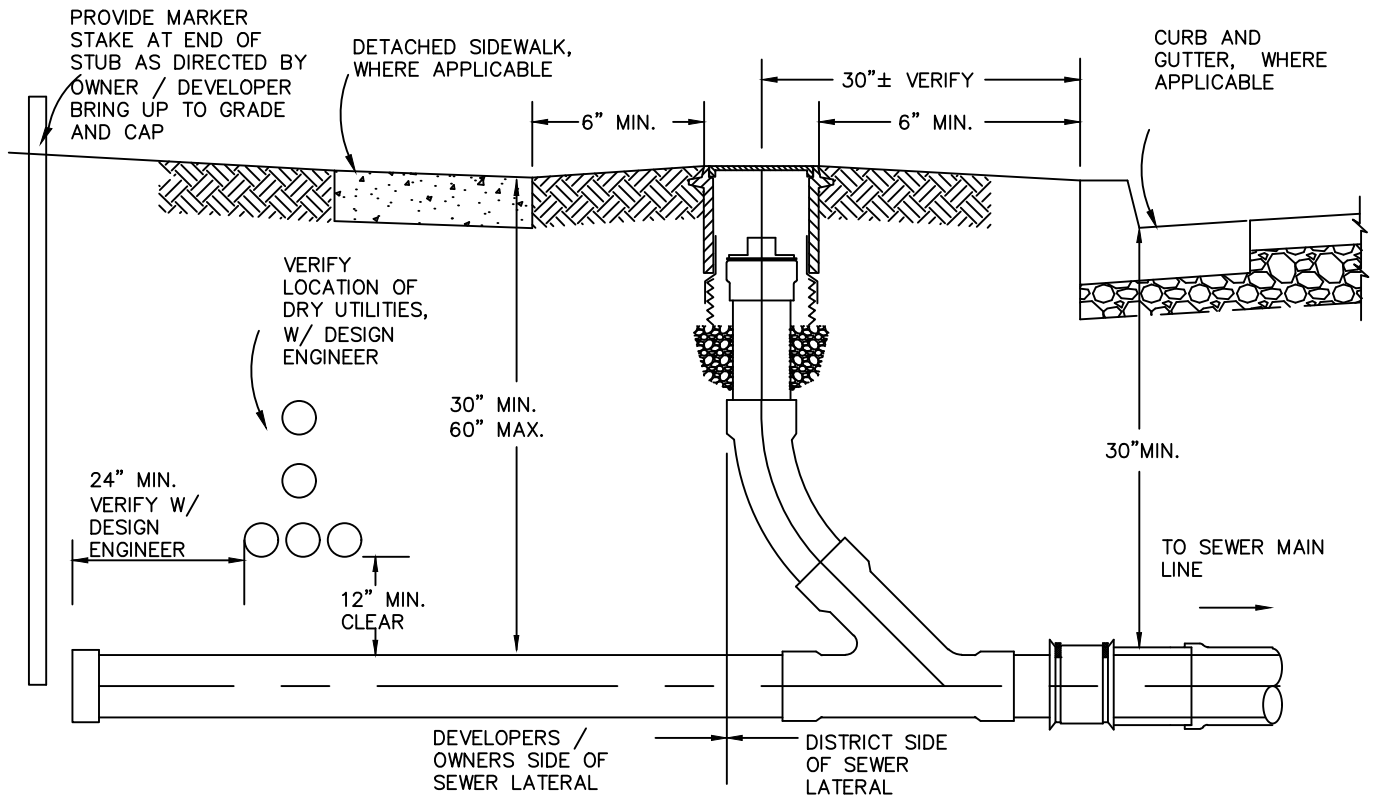


NOTES:

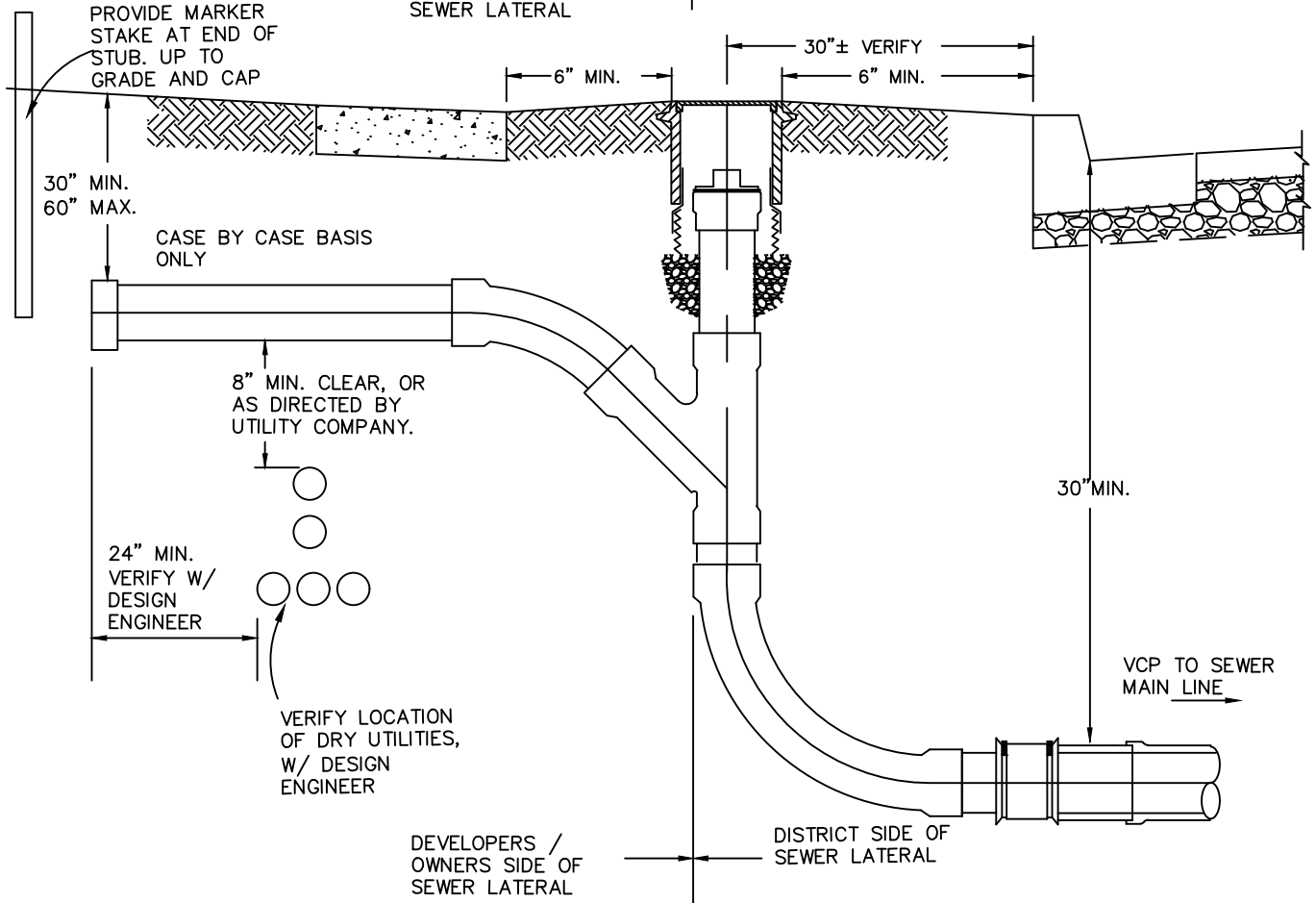
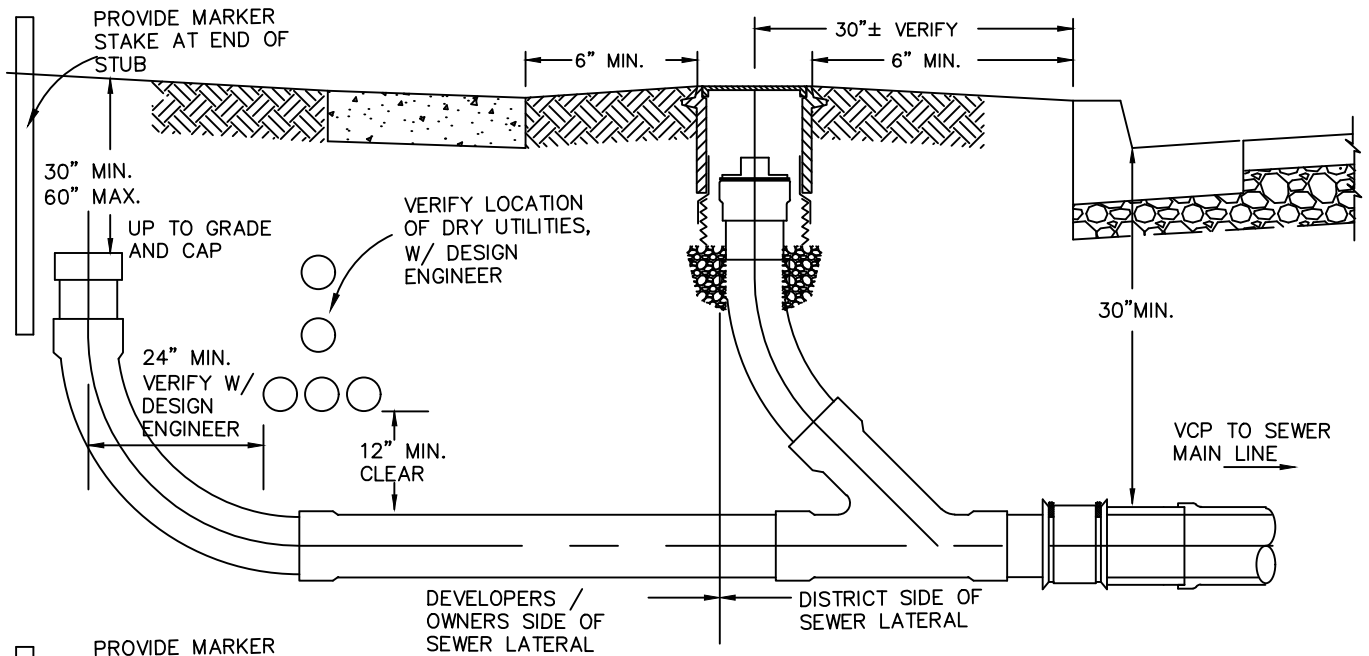
- ALL PIPING, FITTINGS, AND PLACEMENT SHALL BE PER O.P.U.D. IMPROVEMENT STANDARDS AND TECHNICAL SPECIFICATIONS.
- FINAL INSTALLATION DETAILS TO BE SUBMITTED TO O.P.U.D. FOR APPROVAL.
- IN AREAS WITH CURB - THE LETTER "S" IS TO BE STAMPED ON THE BACK TOP OF THE CURB AT EACH SERVICE LOCATION. THE STAMP SHALL BE APPROVED BY THE DISTRICT PRIOR TO USE.
- FOR SEPTIC TANK PHASE-OUT PROJECTS WHERE NO CONCRETE CURB EXIST, AN ELECTRONIC "SEWER" MARKER IS REQUIRED FOR ALL LATERALS WHICH ARE "NOT IN USE". FOR NEW DEVELOPMENT AREAS WHERE THE SEWER LATERAL IS "NOT IN USE", A LANDSCAPE TIMBER OR 3x3 MIN. P.T. POST (TOP PAINTED GREEN) SHALL BE INSTALLED UP TO GRADE AND CAPPED
- THE MINIMUM SIZE OF ALL RESIDENTIAL SERVICE LINES SHALL BE FOUR (4) INCHES. THE MAXIMUM LENGTH OF A RESIDENTIAL SERVICE LINE SHALL BE 60 FEET (LENGTH BETWEEN SEWER MAIN OR MANHOLE TO CUSTOMERS PROPERTY LINE).
- THE MINIMUM SIZE OF ALL COMMERCIAL SERVICE LINES SHALL BE SIX (6) INCHES.
- NO SEWER SERVICE CONNECTIONS PERMITTED ON ANY GRAVITY SEWER LINE WHICH IS SIXTEEN (16) INCHES OR LARGER.

			OLIVEHURST PUBLIC UTILITY DISTRICT	
			SEWER CONNECTION SECTION VIEW	
8-05	DELETE VERTICAL LATERAL CONNECTION	ADC	Garry E. Laughlin District Engineer	
3-05	FORMERLY STD. DTL. NO. SS-6	SCD		
DATE	REVISIONS	BY	APPROVED	3-17-2005 DATE

5-31



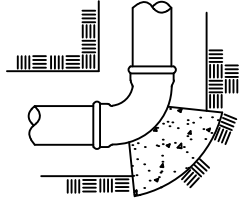
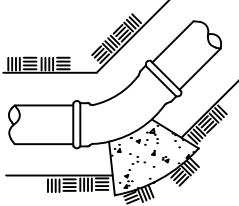
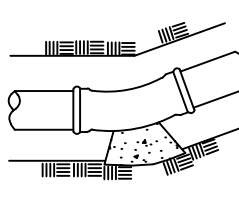
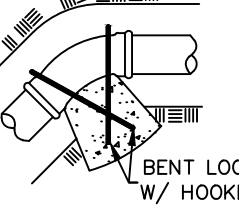
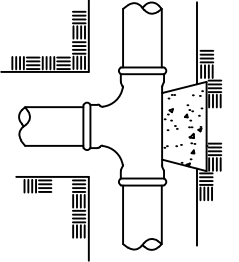
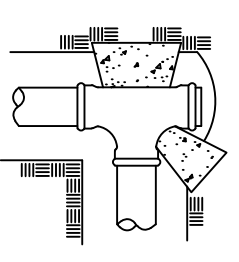
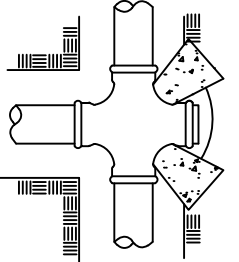
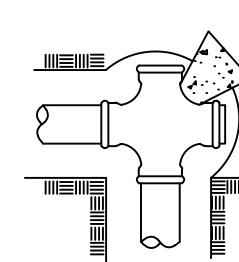
			OLIVEHURST PUBLIC UTILITY DISTRICT
			SEWER SERVICE LATERAL
5-05	FORMERLY STD. DTL. NO. SS-11	SCD	Garry E. Laughlin
DATE	REVISIONS	BY	District Engineer
			5-6-2005
			DATE
			5-41



			OLIVEHURST PUBLIC UTILITY DISTRICT	
			SEWER SERVICE LATERAL	
5-05	FORMERLY STD. DTL. NO. SS-12	SCD	Garry E. Laughlin	
DATE	REVISIONS	BY	District Engineer	5-6-2005
			APPROVED	DATE

5-42

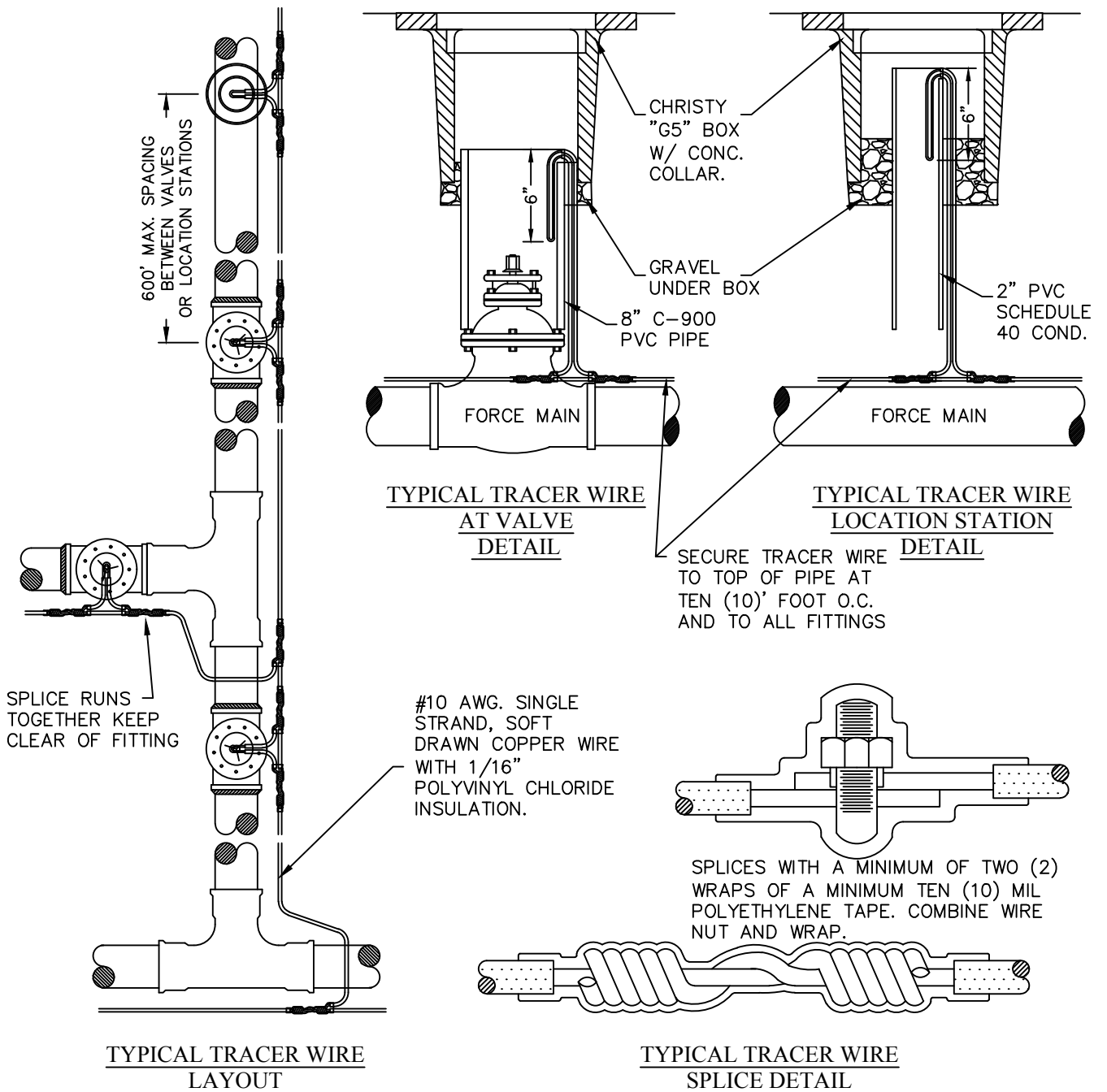
MINIMUM REQUIRED BEARING AREA IN TOTAL SQUARE FEET

TYPE OF FITTING		90° BEND	45° BEND	22 1/2° BEND 11 1/4° BEND	BEND WITH HANGING RESTRAINT
TYPICAL INSTALLATION					
SIZE OF PIPE	4"	2	1	1	1 CU. YD.
	6"	4	2	1	1 CU. YD.
	8"	7	4	2	1.5 CU. YD.
	10"	11	6	3	2 CU. YD.
	12"	15	8	5	2.5 CU. YD.
	18"	32	17	8	3 CU. YD.
TYPE OF FITTING		TEE OR DEAD END	TEE WITH PLUG	CROSS W/ PLUG	CROSS W/PLUGS
TYPICAL INSTALLATION					
SIZE OF PIPE	4"	2	2 EA	2 EA	2
	6"	4	4 EA	4 EA	4
	8"	7	7 EA	7 EA	7
	10"	11	11 EA	11 EA	11
	12"	15	15 EA	15 EA	15
	18"	32	32 EA	32 EA	32

NOTES:

1. THRUST BLOCKS SHALL BE CONSTRUCTED OF CLASS "B" CONCRETE.
2. BEARING AREAS GIVEN ARE FOR CLASS 150 PIPE AT TEST PRESSURE OF 65 P.S.I. IN SOIL WITH 2,000 P.S.F. BEARING CAPACITY. INSTALLATIONS USING DIFFERENT PIPE, TEST PRESSURES, AND/OR SOIL TYPES SHOULD ADJUST AREAS ACCORDINGLY, SUBJECT TO APPROVAL OF DISTRICT ENGINEER.
3. THRUST BLOCKS SHALL BE POURED AGAINST FIRM UNDISTURBED SOIL.
4. PROVIDE A COATING ON ALL BOLTS AND A MINIMUM OF TWO WRAPS OF A 10 mil POLYETHYLENE ENCASEMENT OF ALL PIPING AND FITTING TO PREVENT CONCRETE FROM DIRECT CONTACT.
5. ALL JOINTS AND BOLTS SHALL BE KEPT CLEAR OF CONCRETE.
6. THRUST BLOCKS SHALL BE PLACED 48 HOURS BEFORE TESTING.
7. ALL PLUGS SHALL BE SECURED WITH THRUST BLOCKS OR JOINT RESTRAINTS.

			OLIVEHURST PUBLIC UTILITY DISTRICT	
			THRUST BLOCKS	
			Garry E. Laughlin	
			District Engineer	
5-05	FORMERLY STD. DTL. NO. W-14	SCD	6-6-2005	
DATE	REVISIONS	BY	APPROVED	DATE
			6-02	



NOTES:

1. ALL TRACER WIRE SHALL BE #10 AWG. SINGLE STRAND, SOFT DRAWN COPPER WIRE WITH 1/16" POLYVINYL CHLORIDE INSULATION (FOR DIRECT BURIAL USE ONLY).
2. ALL TRACER WIRE SHALL BE CONTINUOUS BETWEEN VALVE BOXES AND TRACER STATIONS.
3. TRACER / LOCATING WIRE SHALL BE LAID ON TOP OF THE LINE, AND SHALL BE SECURED BY TAPE (OR OTHER APPROVED METHOD) TO THE LINE (OR THE POLYETHYLENE ENCASEMENT IF DUCTILE IRON) AT TEN (10) FOOT MAXIMUM INTERVALS AND TAPPED AT ALL FITTINGS. TAPE SHALL BE TEN (10) MIL POLYETHYLENE.
4. ALL SPLICES SHALL BE TIGHT WRAPPED (A MINIMUM OF 12 TIMES TOTAL) AND SOLDERED OR CLAMPED WITH ONE (1) ELECTRICAL SPLIT BOLT CONNECTOR. COVER ALL SPLICES WITH A MINIMUM OF TWO (2) WRAPS OF A MINIMUM TEN (10) MIL POLYETHYLENE TAPE.
5. THE CONTRACTOR SHALL CONDUCT A CONTINUITY TEST ON ALL SPLICES AND BETWEEN THE WIRE RISER LOOPS.
6. A FINAL CONTINUITY TEST SHALL BE DONE IN THE PRESENCE OF THE DISTRICT.
7. BARE TRACER WIRE SHALL NOT TOUCH ANY VALVES OR FITTINGS.

			OLIVEHURST PUBLIC UTILITY DISTRICT	
			TRACER WIRE	
5-05	FORMERLY STD. DTL. NO. W-8	SCD	Garry E. Laughlin District Engineer	
DATE	REVISIONS	BY	APPROVED	DATE
				6-08

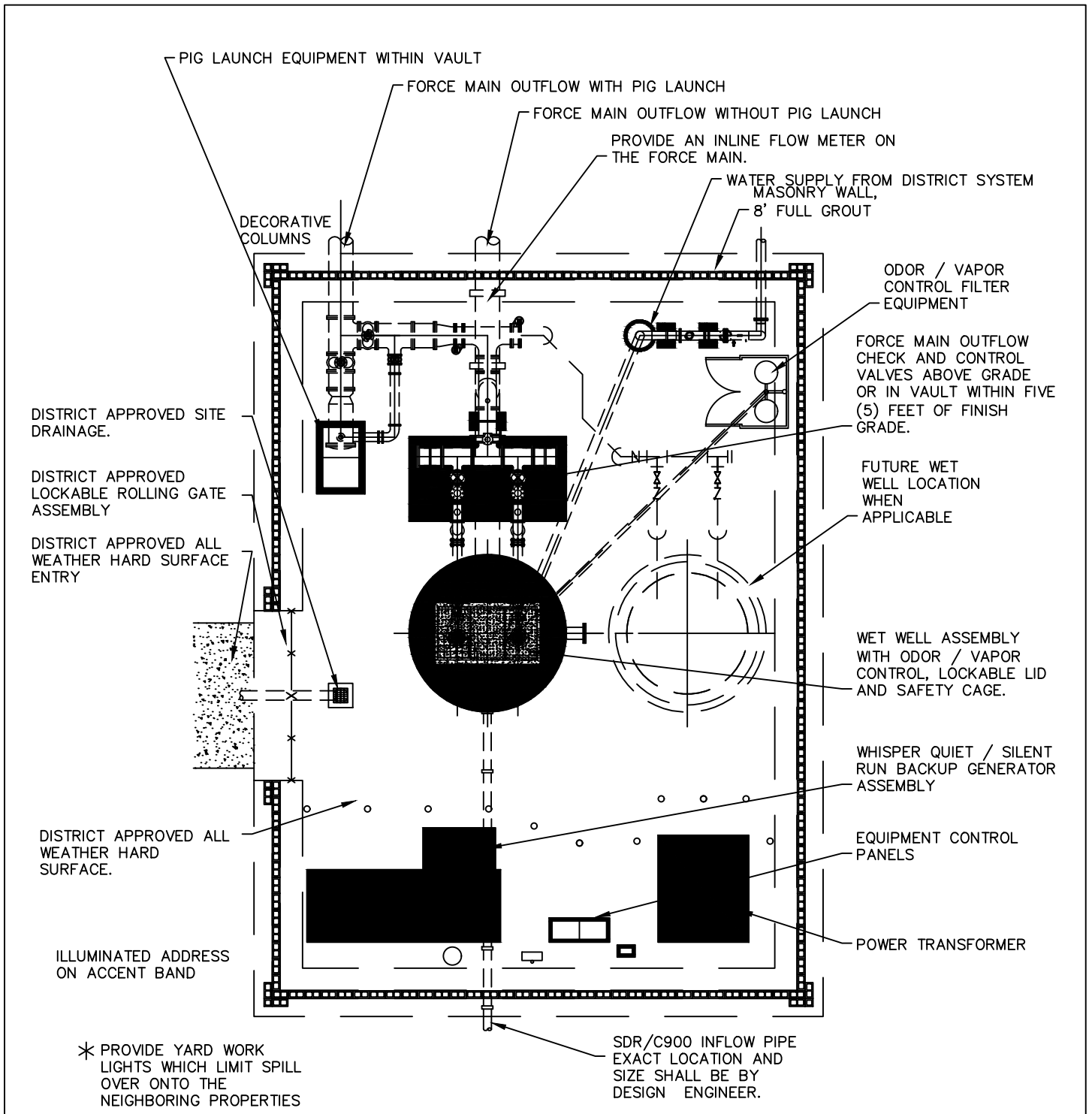
GENERAL SEWER LIFT STATION REQUIREMENTS:

- 1 ALL SANITARY SEWER LIFT STATION SYSTEM DESIGN, MATERIALS, INSTALLATION, AND TESTING SHALL BE PER THE CURRENT OPUD IMPROVEMENT STANDARDS.

 WET WELL STORAGE, CAPACITY, AND SIZE:
 A) NO SANITARY SEWER MAIN LINE PIPE STORAGE WILL BE ALLOWED.
 B) ACTUAL WET WELL STORAGE CAPACITY IN ALL CASES SHALL BE ADEQUATE TO CARRY THE DESIGN FLOW FROM THE ENTIRE TRIBUTARY AREA, EVEN THOUGH SAID AREA MAY NOT LIE WITHIN THE PROJECT BOUNDARIES. IT SHALL BE CALCULATED SO AS TO PROVIDE FOR AT LEAST THE MINIMUM DESIGN STORAGE MULTIPLIED BY TWO (2) PLUS A MINIMUM OF ONE (1) FOOT BELOW LOWEST GRAVITY INLET.
 C) THE MINIMUM WET WELL SIZE SHALL BE EIGHT (8) FEET IN DIAMETER UNLESS OTHERWISE APPROVED BY THE DISTRICT ENGINEER.
- 2
- 3 THE PUMPS SHALL BE VAUGHN SUBMERSIBLE CHOPPER PUMPS, EQUIPPED WITH 3-PHASE ELECTRIC EXPLOSION PROOF MOTOR AND RAIL SYSTEM.
 MOTOR CONTROL PANEL SHALL BE A TOUCHSCREEN PANEL EQUIPPED WITH A DIGITAL LEVEL AND PROGRAMMABLE CONTROLLER. THE DISTRICT MUST RECEIVE A COPY OF THE PROGRAMMING SOFTWARE FOR TROUBLESHOOTING AND DIAGNOSTIC NEEDS. THE PANEL SHALL BE FURNISHED WITH AN ALARM LIGHT (EXTENDED ABOVE THE ENCLOSURE AND VISIBLE FROM THE STREET), REMOTE ALARM TRANSMITTERS, AND AUDIBLE ALARM AS DIRECTED BY THE DISTRICT.
- 4
- 5 THE INTERIOR OF ALL WET WELLS SHALL BE PROPERLY CLEANED AND DRIED AND SHALL BE ARMOROCK POLYMER CONCRETE OR PROVEN EQUAL. MANUFACTURER SPECIFICATIONS AND INSTALLATION INSTRUCTIONS CAN BE FOUND AT ARMOROCK.COM
- 6 ALL LIFT STATION WET WELLS SHALL HAVE A SPARK TEST PERFORMED OVER THE ENTIRE SURFACE OF THE WET WELL TO VERIFY THAT NO HOLES AND / OR ANY DEFECTS EXIST. THE CONTRACTOR SHALL COORDINATE WITH THE DISTRICT AND HAVE THE DISTRICT ENGINEER AND / OR INSPECTOR PRESENT DURING THE TESTING.
- 7 A GENERATOR SHALL BE DESIGNED TO BE A QUIET OPERATING, LOW EXHAUST EMISSIONS, DUTY RATED-STANDBY POWER SYSTEM WITH A SELF-CONTAINED FUEL SUPPLY.

 THE SEWER LIFT STATION SYSTEM SHALL BE PROVIDED WITH AN ODOR CONTROL VENTILATION SYSTEM, WHICH CONSISTS OF REPLACEABLE FILTER DEVICE(S), DESIGNED TO PROPERLY VENT THE WET WELL ASSEMBLY AND LIMIT THE ESCAPE OF ALL OBNOXIOUS SEWAGE GASES AND ODORS. THE DIVERSION OF ODOR TO THE VENTILATION PIPING SHALL BE ACHIEVED BY POSITIVE FLOW FROM A MECHANICAL FAN (500 CFM, OR AS DIRECTED BY THE DISTRICT ENGINEER).
- 8
- 9 WATER SUPPLY SHALL BE PROVIDED ON-SITE BY PROVIDING A DISTRICT APPROVED WATER PIPE.
- 10 PERIMETER WALLS SHALL CONSIST OF AN ENGINEERED MASONRY WALL WITH A LOCKABLE GATE ASSEMBLY.
- 11 LIFT STATION SITE SHALL HAVE A DISTRICT APPROVED HARD ALL WEATHER FINISH SURFACE.

			OLIVEHURST PUBLIC UTILITY DISTRICT	
			GENERAL LIFT STATION REQUIREMENTS	
6-19	CHANGED NOTE 4	CNO	Garry E. Laughlin District Engineer	7-01
5-05	NEW DETAIL	SCD		
DATE	REVISIONS	BY	APPROVED	5-6-2005 DATE

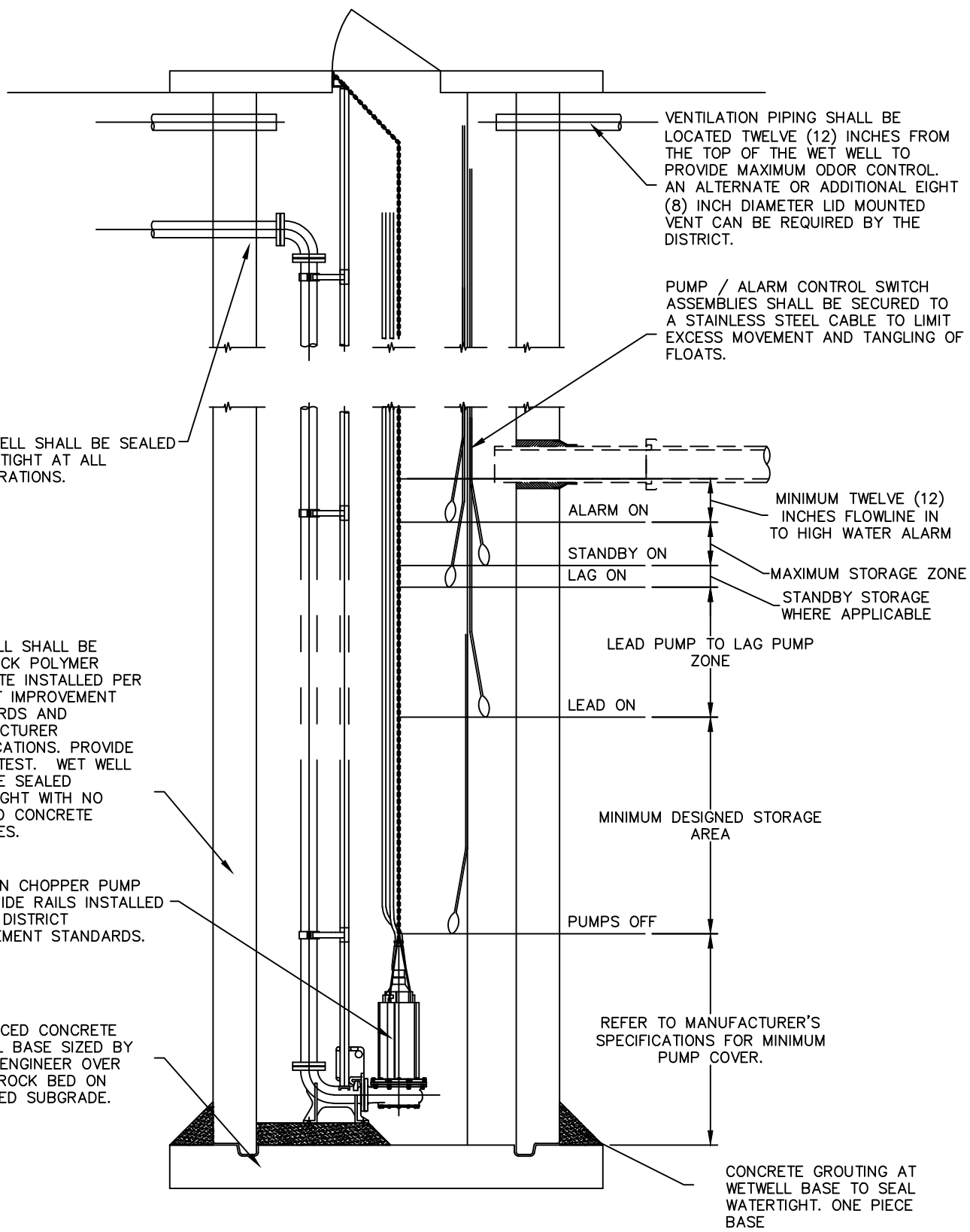


NOTES:

1. DESIGN ENGINEER SHALL SUBMIT TENTATIVE DESIGN PLAN FOR REVIEW AND COMMENT PRIOR TO FINAL DESIGN OF SANITARY SEWER LIFT STATION.
2. THE COMPLETE SITE AND ACCESS TO A PUBLIC WAY SHALL BE GRANT DEEDED TO THE DISTRICT PRIOR TO FINAL ACCEPTANCE OF THE PROJECT.

			OLIVEHURST PUBLIC UTILITY DISTRICT	
			TYPICAL WET WELL SITE PLAN	
			Garry E. Laughlin	
			District Engineer	
5-05	NEW DETAIL	SCD	5-6-2005	
DATE	REVISIONS	BY	APPROVED	DATE

7-10



			OLIVEHURST PUBLIC UTILITY DISTRICT	
			TYPICAL WET WELL SECTION	
			Garry E. Laughlin	
			District Engineer	
5-05	NEW DETAIL	SCD	5-6-2005	
DATE	REVISIONS	BY	APPROVED	DATE

7-20

GENERAL WATER LINE REQUIREMENTS:

- 1 ALL WATER SYSTEM DESIGN, MATERIALS, INSTALLATION, AND TESTING SHALL BE PER THE CURRENT OPUD IMPROVEMENT STANDARDS.
- 2 THE MINIMUM COVER SHALL BE THIRTY-SIX (36) INCHES. MINIMUM NET VERTICAL CLEARANCE BETWEEN SUB-GRADE / BOTTOM OF SPECIAL TREATED SOIL SECTION SHALL BE EIGHTEEN (18) INCHES AND TWELVE (12) INCHES BETWEEN UTILITIES. COVER / CLEARANCE SHALL BE AS MEASURED FROM THE MAXIMUM OUTSIDE DIAMETER AT THE BELL OF THE PIPE.
- PIPING MATERIALS: ALL PIPING SHALL BE APPROVED BY THE DISTRICT AND SHALL CONFORM TO THE REQUIREMENTS OF THE CURRENT A.W.W.A. STANDARDS FOR WATER PIPE WITH A MINIMUM DESIGNED PRESSURE 150 PSI.
 - A. DUCTILE IRON WITH AN AWWA ACCEPTED INTERIOR SURFACE LINER AND A SEAL COATING,
 - B. C-900 DR-18 (NOMINAL SIZE 4" TO 12") OR C-905 DR-25 (NOMINAL SIZE 14" TO 24") PVC (POLYVINYL CHLORIDE) (BLUE IN COLOR), MANUFACTURED FROM COMPOUNDS THAT MEET ASTM D1784, CELL CLASS 12454B.
- 3 THE MAXIMUM DEFLECTION OR BENDING OF ANY PVC PIPE SHALL NOT EXCEED THE MANUFACTURERS WRITTEN SPECIFICATIONS OR APPROXIMATELY 5' AND SHALL NOT BE WITHIN THE ACTUAL PIPE JOINT UNLESS APPROVED IN WRITING BY THE PIPE MANUFACTURER. APPROXIMATE BENDING RADIUS 4" = 125', 6" = 175', 8" = 225', 10" = 275', 12" = 325', 14" = 400', LARGER PIPE AND AN SMALLER RADIUS SHALL BE ACHIEVED BY THE USE OF DUCTILE IRON FITTINGS.
- 4 THE TRENCHING, BEDDING, LAYING, COVER, AND BACKFILL SHALL BE PER OPUD IMPROVEMENT STANDARDS, SECTION 4 AND SECTION 8.
- 5 THE NEW / REPAIRED WATER SYSTEM SHALL ONLY BE LOADED BY A DISTRICT-APPROVED METHOD.
- 6 ALL WATER LINES SHALL BE PRESSURE TESTED PER THE FOLLOWING: HYDROSTATIC @ 150 PSI FOR A MINIMUM OF TWO (2) HOURS AND OBSERVED BY A REPRESENTATIVE OF THE DISTRICT. THE MAXIMUM LOSS RATE SHALL BE: 0.02 GALLONS PER HOUR PER INCH OF PIPE DIAMETER PER 100 FOOT OF PIPE.
- 7 DISINFECTION AND FLUSHING: BEFORE BEING PLACED IN SERVICE, ALL NEW WATER SYSTEMS AND ANY REPLACEMENT OF THE EXISTING WATER SYSTEM, OR EXPOSED SECTION OF THE EXISTING SYSTEM SHALL BE DISINFECTED TO THE SATISFACTION OF THE DISTRICT.
- 8 BACTERIOLOGICAL TESTING SHALL BE DONE BY A DISTRICT APPROVED TESTER AND PROVIDED BY THE CONTRACTOR / DEVELOPER AT NO COST TO THE DISTRICT.
- 9 ALL WATER SYSTEMS MUST BE PRESSURE TESTED & OPUD APPROVED PRIOR TO CONSTRUCTING ANY ROADWAY STRUCTURAL SECTIONS.
- 10

ADDITIONAL NOTES:

- 1. ALL PIPING AND FITTINGS LESS THAN 3" SHALL BE A.W.W.A. AND DISTRICT APPROVED BRASS, BRONZE, POLY , OR STAINLESS STEEL.
- 2. ALL PIPING AND FITTINGS 3" AND LARGER SHALL BE A.W.W.A. AND DISTRICT APPROVED DUCTILE IRON OR PVC.
- 3. ALL BURIED BOLTS SHALL BE A.W.W.A. AND DISTRICT APPROVED STAINLESS STEEL OR CORE TEN "T" BOLTS.

			OLIVEHURST PUBLIC UTILITY DISTRICT	
			GENERAL WATER LINE REQUIREMENTS	
			Garry E. Laughlin	
5-05	FORMERLY STD. DTL. NO. WS-01	SCD	5-6-2005	
DATE	REVISIONS	BY	APPROVED	DATE

8-01

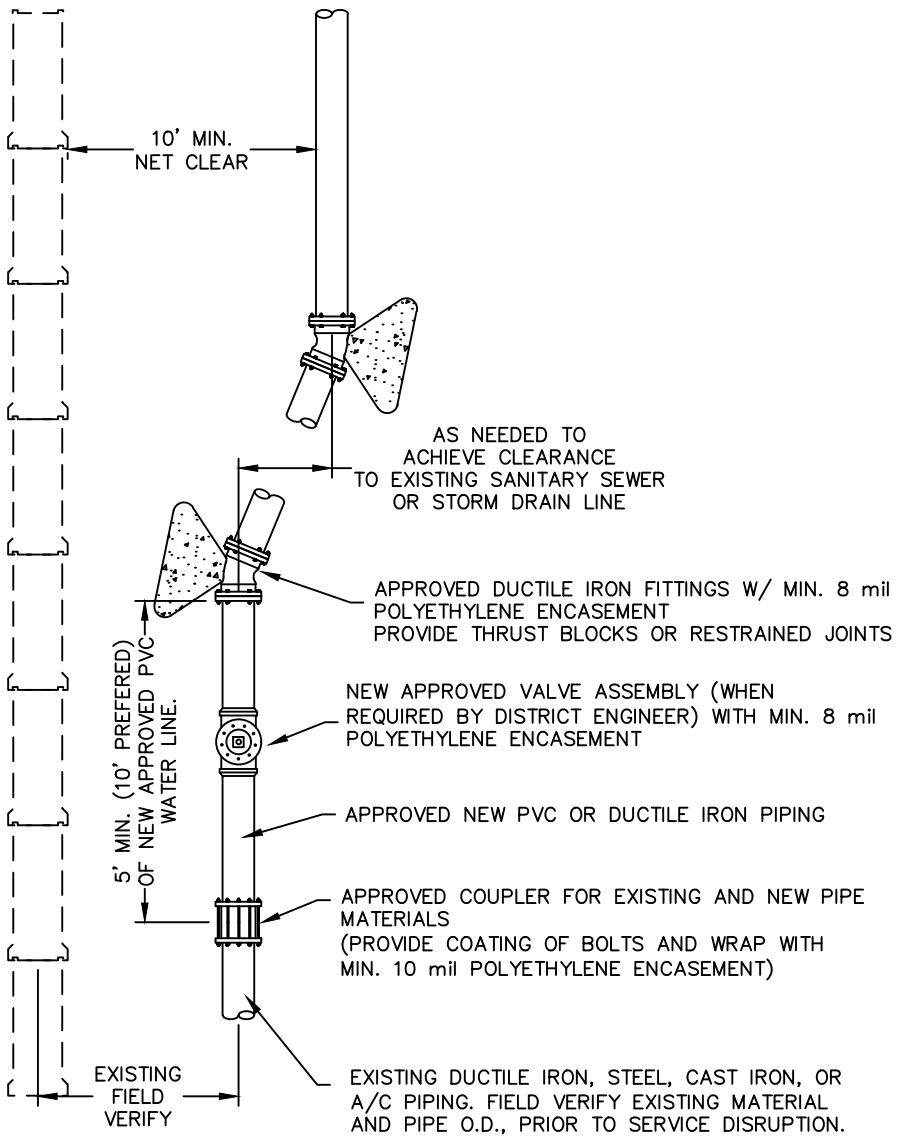
MINIMUM REQUIRED BEARING AREA IN TOTAL SQUARE FEET

TYPE OF FITTING		90° BEND	45° BEND	22 1/2° BEND 11 1/4° BEND	BEND WITH HANGING RESTRAINT
TYPICAL INSTALLATION					
SIZE OF PIPE	4"	2	1	1	1 CU. YD.
	6"	4	2	1	1 CU. YD.
	8"	7	4	2	1.5 CU. YD.
	10"	11	6	3	2 CU. YD.
	12"	15	8	5	2.5 CU. YD.
	18"	32	17	8	3 CU. YD.
TYPE OF FITTING		TEE OR DEAD END	TEE WITH PLUG	CROSS W/ PLUG	CROSS W/PLUGS
TYPICAL INSTALLATION					
SIZE OF PIPE	4"	2	2 EA	2 EA	2
	6"	4	4 EA	4 EA	4
	8"	7	7 EA	7 EA	7
	10"	11	11 EA	11 EA	12
	12"	15	15 EA	15 EA	16
	18"	32	32 EA	32 EA	28

NOTES:

1. MINIMUM REQUIRED THRUST BLOCK BEARING AREAS LISTED IN THE ABOVE TABLE ARE SHOWN IN SQUARE FEET UNLESS OTHERWISE NOTED AND ARE FOR CLASS 150 PIPE AT TEST PRESSURE OF 150 P.S.I. IN SOIL WITH A MINIMUM 2,000 P.S.F. BEARING CAPACITY.
2. INSTALLATION IN ANY AREA HAVING A SOIL TYPE WITH A LESSER BEARING CAPACITY AND/OR SITE CONDITIONS AND PIPE SIZES NOT INDICATED IN THE ABOVE TABLE SHALL BE ENGINEERED BY THE DESIGN ENGINEER, AND ARE SUBJECT TO ACCEPTANCE BY THE DISTRICT ENGINEER. (THE DISTRICT SHALL BE PROVIDED WITH A COPY OF THE GEOTECHNICAL ENGINEER'S REPORT)
3. ALL THRUST BLOCKS SHALL BE CONSTRUCTED OF CLASS "B" CONCRETE AND SHALL BE POURED AGAINST FIRM UNDISTURBED SOIL. (THRUST BLOCKS SHALL EXTEND OUT A MINIMUM OF 18" FROM 4" THRU 10" PIPE AND 24" FROM 12" AND LARGER PIPE)
4. PROVIDE A COATING ON ALL BOLTS AND A MINIMUM OF TWO WRAPS OF A 8 mil POLYETHYLENE ENCASEMENT OF ALL PIPING AND FITTING TO PREVENT CONCRETE FROM DIRECT CONTACT.
5. ALL JOINTS AND BOLTS SHALL BE KEPT A MINIMUM OF 1/2" CLEAR OF CONCRETE.
6. THRUST BLOCKS SHALL BE PLACED 48 HOURS BEFORE TESTING.
7. ALL PLUGS SHALL BE SECURED WITH THRUST BLOCKS OR JOINT RESTRAINTS.
8. ALL BURIED METAL STRAPS SHALL BE STAINLESS STEEL OR COATED AND PROTECTED FROM CORROSION AND BE A GAUGE AND SIZE CAPABLE OF ACHIEVING THE DESIGN STRENGTHS.

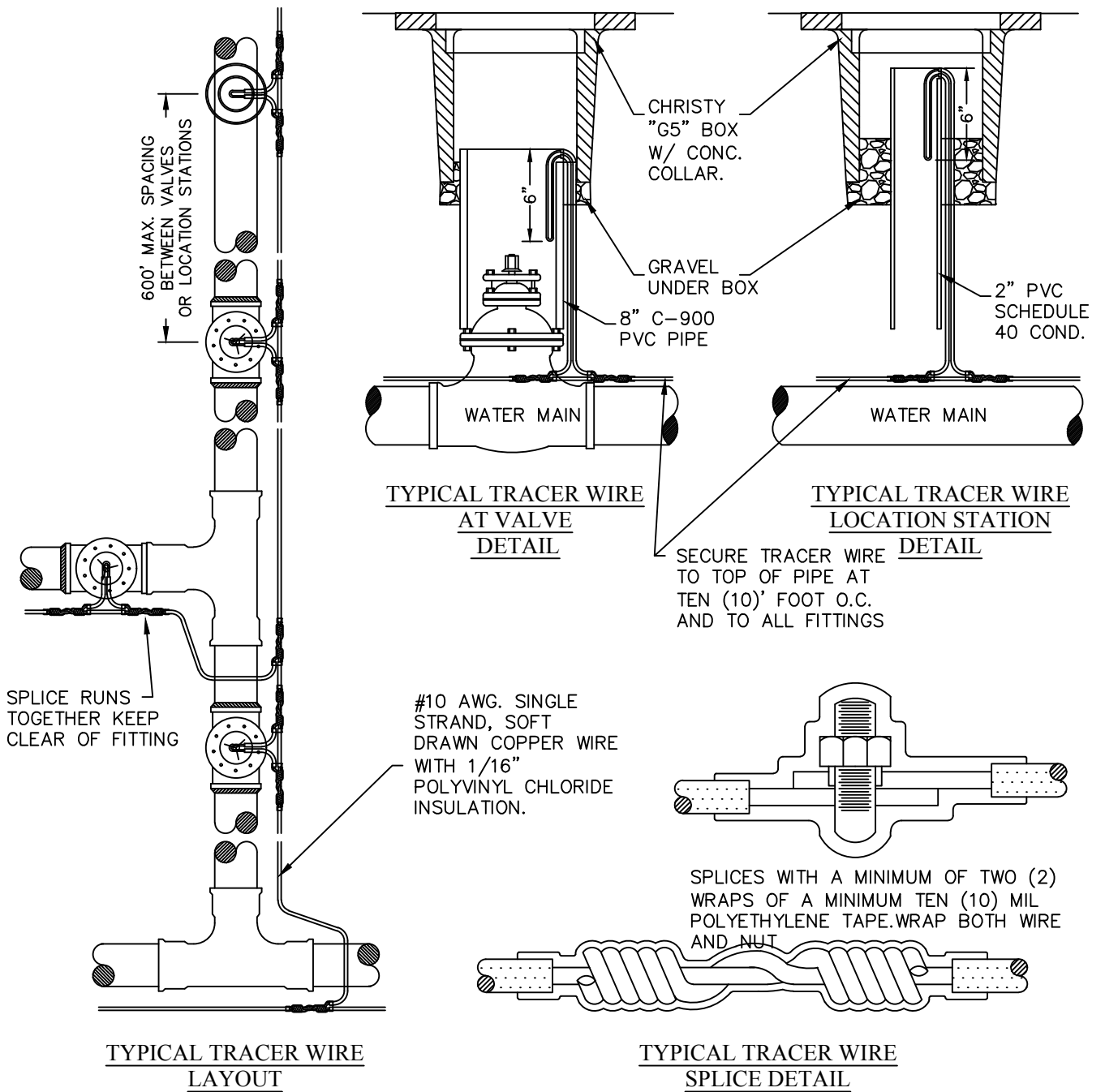
			OLIVEHURST PUBLIC UTILITY DISTRICT	
			THRUST BLOCKS	
			Garry E. Laughlin	
5-05	FORMERLY STD. DTL. NO. W-14	SCD	District Engineer	
DATE	REVISIONS	BY	APPROVED	DATE
				8-02



NOTES:

1. REFER TO SECTION 4 OF THE IMPROVEMENT STANDARDS FOR TRENCH REQUIREMENTS.

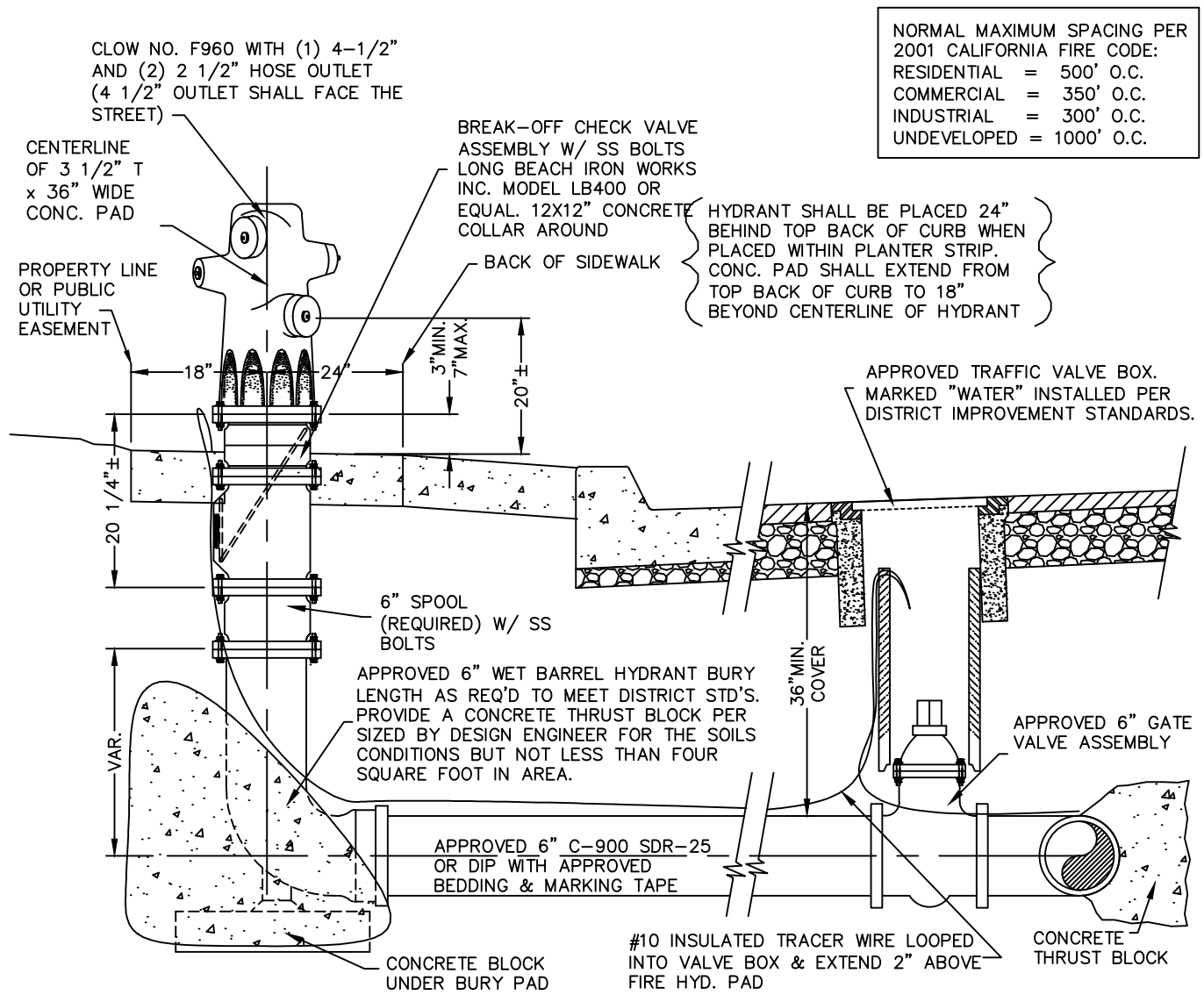
			OLIVEHURST PUBLIC UTILITY DISTRICT	
			CONNECTING TO EXISTING WATER MAIN	
			Garry E. Laughlin	
5-05	FORMERLY STD. DTL. NO. W-10	SCD	District Engineer	
DATE	REVISIONS	BY	APPROVED	DATE
			5-6-2005	8-06



NOTES:

1. ALL TRACER WIRE SHALL BE #10 AWG. SINGLE STRAND, SOFT DRAWN COPPER WIRE WITH 1/16" POLYVINYL CHLORIDE INSULATION (FOR DIRECT BURIAL USE ONLY).
2. ALL TRACER WIRE SHALL BE CONTINUOUS BETWEEN VALVE BOXES AND TRACER WIRE STATIONS.
3. TRACER / LOCATING WIRE SHALL BE LAID ON TOP OF THE LINE, AND SHALL BE SECURED BY TAPE (OR OTHER APPROVED METHOD) TO THE LINE (OR THE POLYETHYLENE ENCASMENT IF DUCTILE IRON) AT TEN (10) FOOT MAXIMUM INTERVALS AND TAPPED AT ALL FITTINGS. TAPE SHALL BE TEN (10) MIL POLYETHYLENE.
4. ALL SPLICES SHALL BE TIGHT WRAPPED (A MINIMUM OF 12 TIMES TOTAL) CLAMPED WITH ONE (1) ELECTRICAL SPLIT BOLT CONNECTOR. COVER ALL SPLICES WITH A MINIMUM OF TWO (2) WRAPS OF A MINIMUM TEN (10) MIL POLYETHYLENE TAPE.
5. THE CONTRACTOR SHALL CONDUCT A CONTINUITY TEST ON ALL SPLICES AND BETWEEN THE WIRE RISER LOOPS.
6. A FINAL CONTINUITY TEST SHALL BE DONE IN THE PRESENCE OF THE DISTRICT.

			OLIVEHURST PUBLIC UTILITY DISTRICT	
			TRACER WIRE	
5-05	FORMERLY STD. DTL. NO. W-8	SCD	Garry E. Laughlin District Engineer	
DATE	REVISIONS	BY	APPROVED	DATE
				8-08



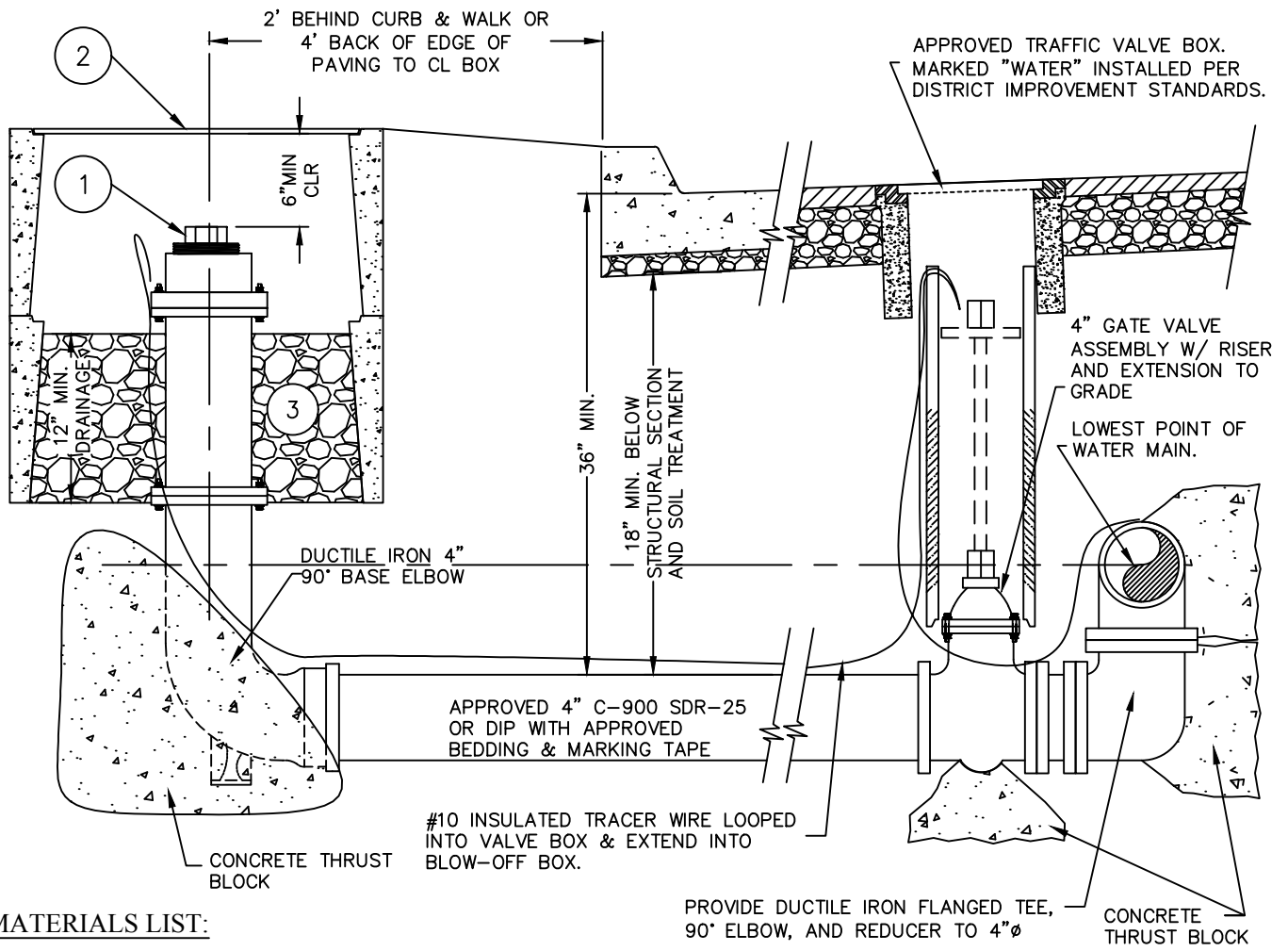
NORMAL MAXIMUM SPACING PER 2001 CALIFORNIA FIRE CODE:
 RESIDENTIAL = 500' O.C.
 COMMERCIAL = 350' O.C.
 INDUSTRIAL = 300' O.C.
 UNDEVELOPED = 1000' O.C.

NOTES:

1. REFLECTIVE PAVEMENT MARKERS SHALL BE PLACED PER STANDARD DETAIL 8-11, UNLESS INSTRUCTED OTHERWISE BY THE DISTRICT.
2. ALL BOLTS, PIPING AND FITTINGS TO BE DUCTILE IRON, CLASS 150 C-900, BRASS, BRONZE, OR STAINLESS STEEL.
3. THE FIRE HYDRANT SHALL BE PAINTED WITH ONE COAT OF A SOUND METAL PRIMER AND TWO COATS OF # 1147 "BRIGHT SAFETY YELLOW".

			OLIVEHURST PUBLIC UTILITY DISTRICT	
			FIRE HYDRANT	
5-05	FORMERLY STD. DTL. NO. W-1	SCD	Garry E. Laughlin	8-10
DATE	REVISIONS	BY	APPROVED	
			District Engineer	5-6-2005
				DATE

NO BLOWOFF, INSTALL HYDRANT



MATERIALS LIST:

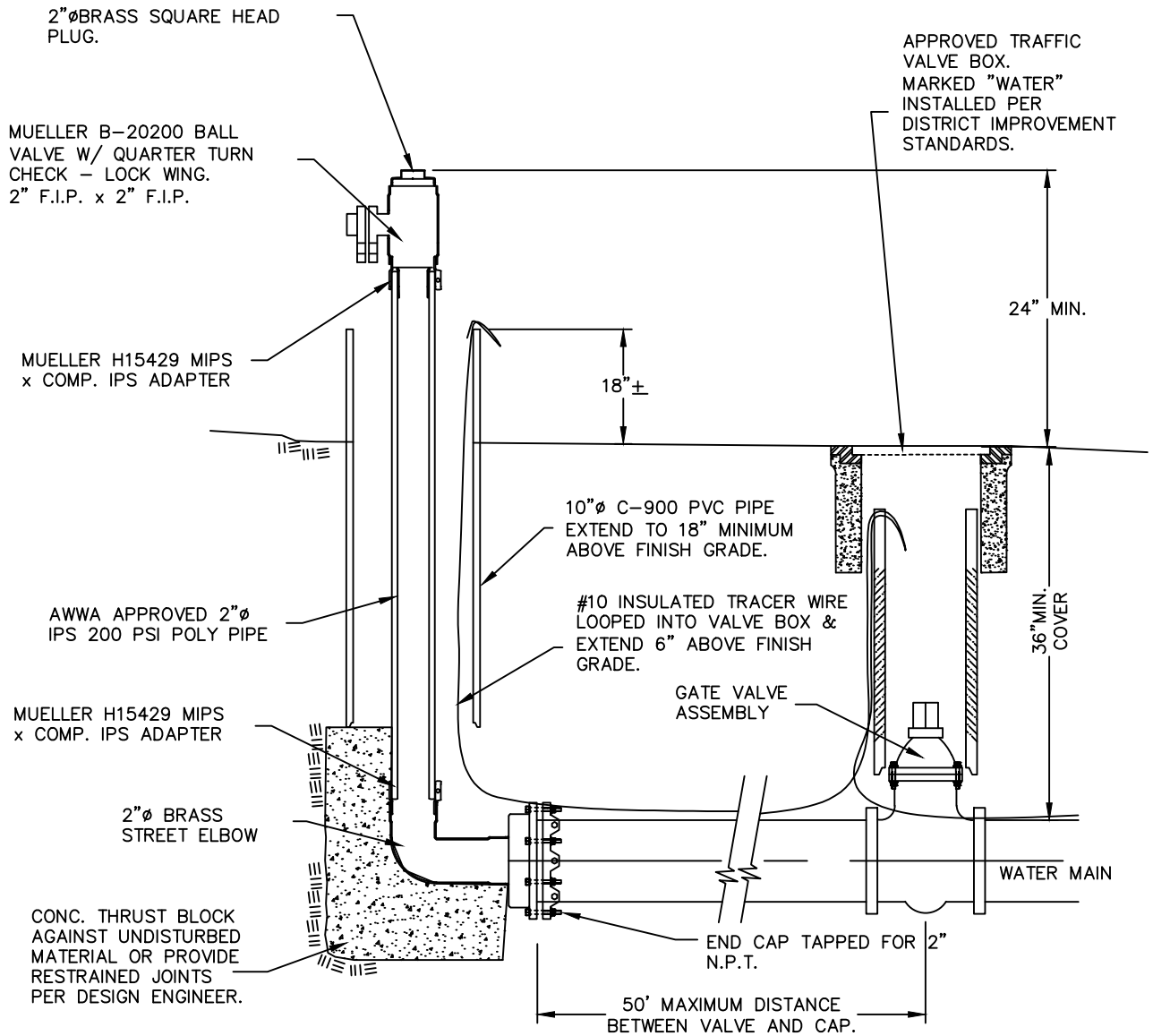
- 1 4" BRASS SQUARE HEAD PLUG
- 2 CHRISTY B1324BOX (B1324X12 EXTENSIONS AS NEEDED) W/ B1324-61JH BOLT DOWN LID.
- 3 PROVIDE 12" MIN. OF 3/4" CRUSH ROCK IN BOTTOM OF BOX FOR DRAINAGE.

NOTES:

- 1. ALL BOLTS, PIPING AND FITTINGS TO BE DUCTILE IRON, CLASS 150 C-900, BRASS, BRONZE, COPPER, OR STAINLESS STEEL.
- 2. NO BOTTOM BLOW-OFF SHALL EVER BE PLACED WITHIN ANY VEHICLE OR PEDESTRIAN TRAFFIC AREAS.
- 3. A BOTTOM BLOW-OFF SHALL ONLY BE INSTALLED AT EXTREME LOW POINTS ALONG MAIN LINES.

			OLIVEHURST PUBLIC UTILITY DISTRICT	
			BOTTOM BLOW-OFF ASSEMBLY	
5-05	NEW DETAIL	SCD	Garry E. Laughlin	
DATE	REVISIONS	BY	District Engineer	
			5-6-2005	
			DATE	

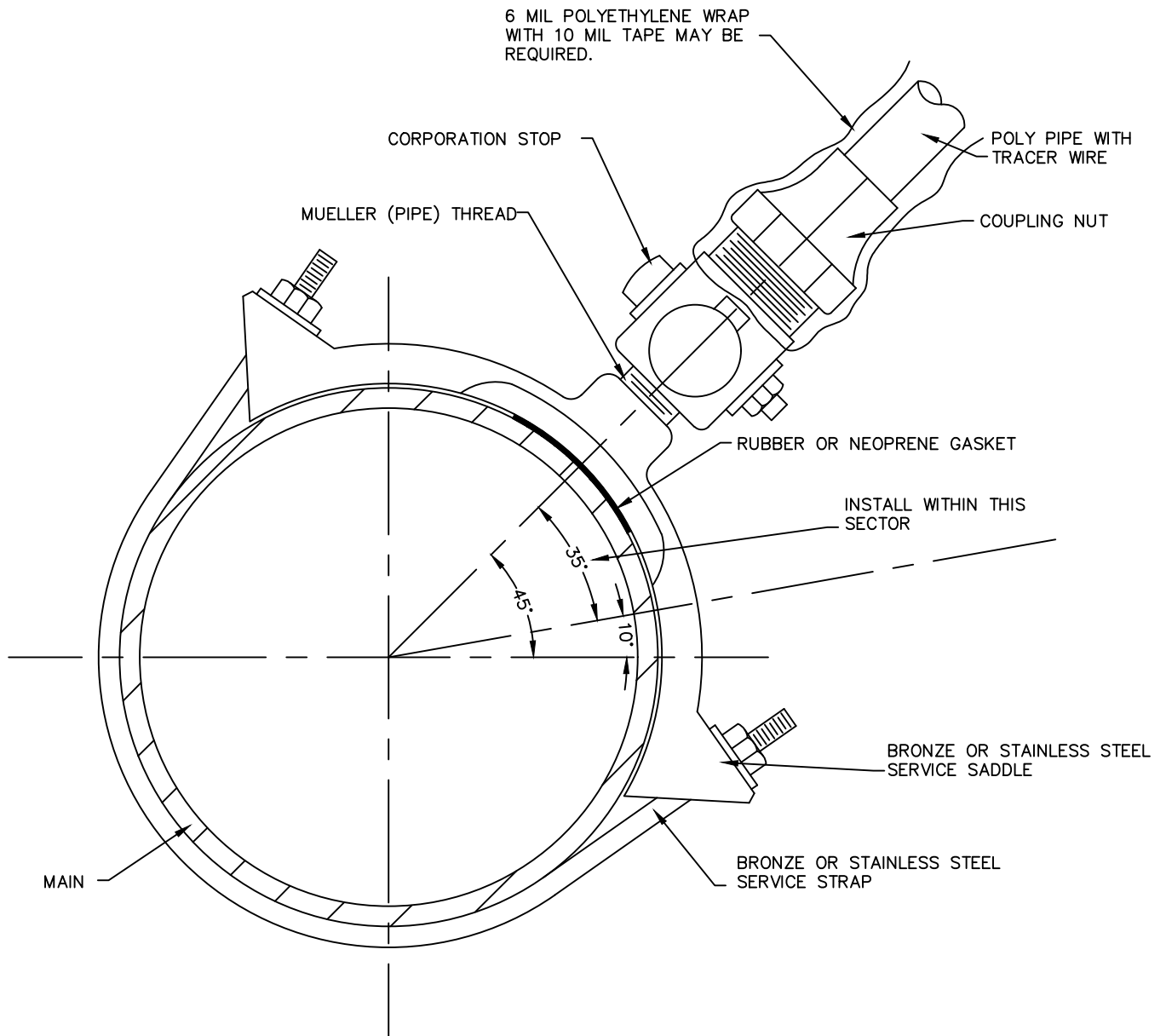
8-14



NOTES:

1. PAINT BLOWOFF ASSEMBLY AND RISER PIPE WITH A BRIGHT SAFETY ORANGE COLOR AND PROVIDE 2" WIDE WHITE REFLECTIVE TAPE AROUND 4"± FROM TOP OF RISER.
2. THRUST BLOCKS SHALL BE POURED AGAINST FIRM UNDISTURBED SOIL.
3. PROVIDE A COATING ON ALL BOLTS AND A MINIMUM OF TWO WRAPS OF A 8 mil POLYETHYLENE ENCASEMENT OF ALL PIPING AND FITTING TO PREVENT CONCRETE FROM DIRECT CONTACT.
4. ALL JOINTS AND BOLTS SHALL BE KEPT CLEAR OF CONCRETE.
5. TEMPORARY BLOWOFFS MUST BE PUT IN BOX TO PREVENT TAMPERING

			OLIVEHURST PUBLIC UTILITY DISTRICT	
			TEMPORARY 2" BLOWOFF	
			Garry E. Laughlin	
			District Engineer	
			5-6-2005	
			8-16	
5-05	FORMERLY STD. DTL. NO. W-9A	SCD		
DATE	REVISIONS	BY	APPROVED	DATE

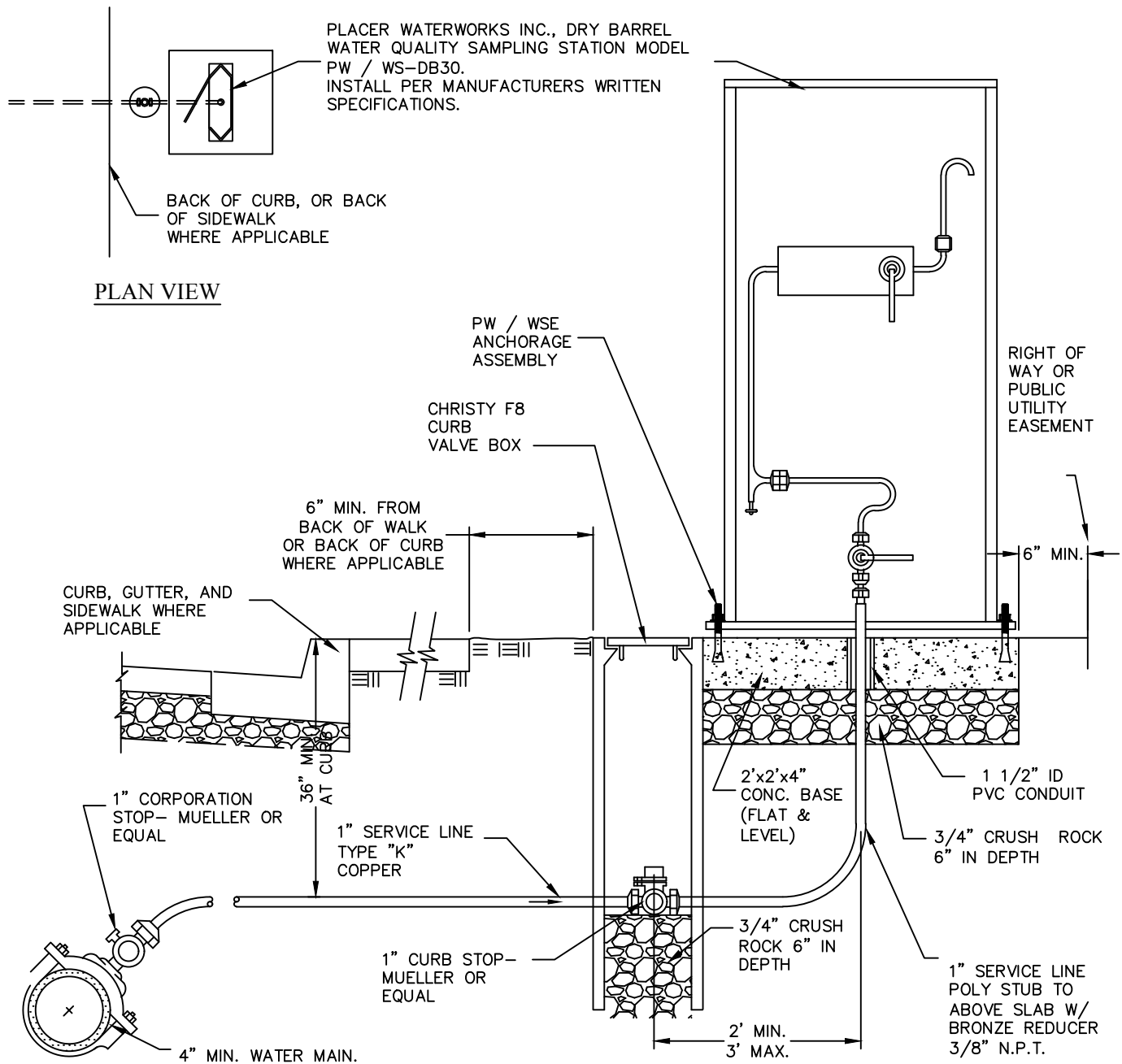


NOTES:

1. ALL SERVICE MATERIALS AND FITTINGS SHALL BE A.W.W.A. STANDARD, POLY, BRASS, BRONZE OR STAINLESS STEEL. INSTALL MUELLER CO. CORPORATION STOPS.
2. SERVICE TAPS OF THE WATER MAINS SHALL BE DONE TO INSURE THAT CUTTINGS, FILLINGS AND PLUGS DO NOT ENTER THE WATER MAINS.

			OLIVEHURST PUBLIC UTILITY DISTRICT	
			TYPICAL SERVICE SADDLE	
			Garry E. Laughlin	
5-05	NEW DETAIL	SCD	District Engineer	
DATE	REVISIONS	BY	APPROVED	5-6-2005 DATE

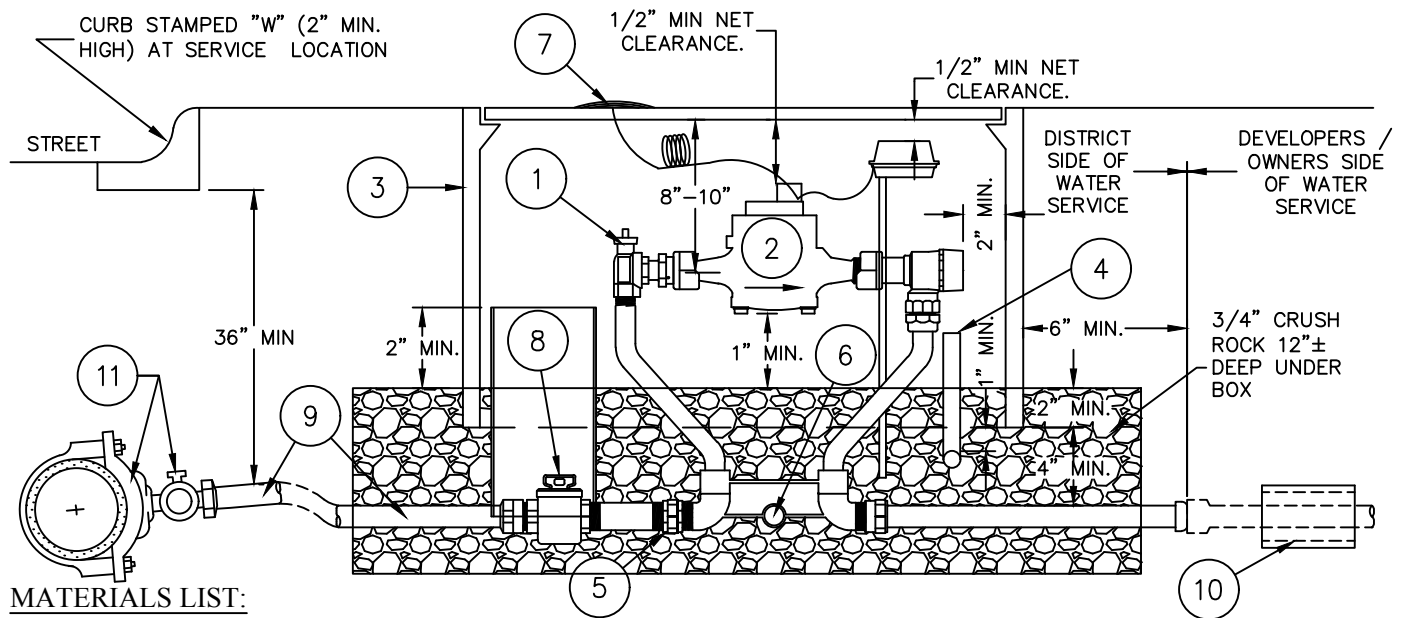
8-30



NOTES:

1. ALL PIPING AND FITTINGS TO BE BRASS, BRONZE, POLY, OR STAINLESS STEEL.
2. MINIMUM DEPTH OF COVER SHALL BE 36".
3. SHALL BE LOCATED WITHIN THE PLANTER AREA BETWEEN BACK OF CURB AND THE SIDEWALK IN DETACHED WALK AREAS AND BEHIND THE SIDEWALK IN ATTACHED WALK AREAS, OR AS DIRECTED BY THE DISTRICT.
4. ALL HARDWARE & EQUIPMENT SHALL BE PROVIDED AND INSTALLED BY CONTRACTOR.
5. ALL PRODUCT INFORMATION AND FINAL INSTALLATION DETAILS TO BE SUBMITTED TO O.P.U.D. FOR APPROVAL PRIOR TO ANY INSTALLATION.
6. A WATER SAMPLER STATION SHALL BE INSTALLED AT EACH PARK, BUT NOT LESS THAN A MINIMUM OF ONE PER EVERY TWO-HUNDRED AND FIFTY (250) LIVING UNITS, OR AS DIRECTED BY THE DISTRICT.

			OLIVEHURST PUBLIC UTILITY DISTRICT	
			WATER SAMPLING STATION	
			Garry E. Laughlin	
			District Engineer	
			5-6-2005	
			DATE	
5-05	FORMERLY STD. DTL. NO. W-22	SCD	8-31	
DATE	REVISIONS	BY		



MATERIALS LIST:

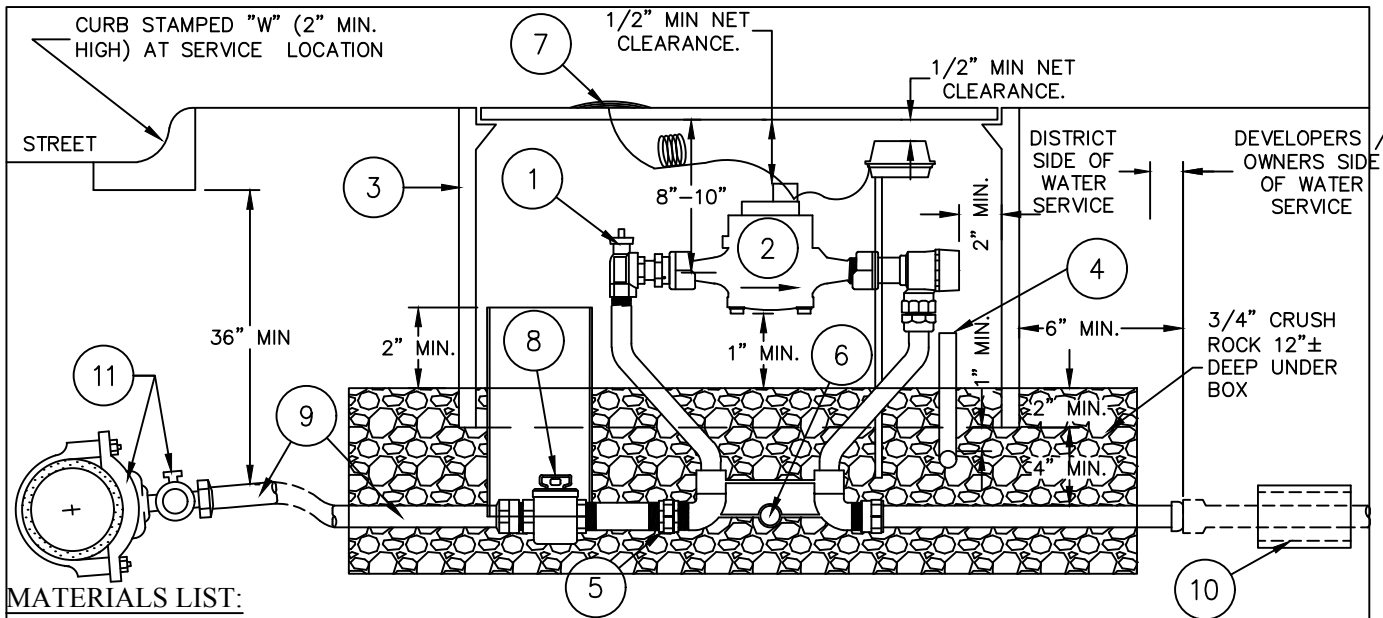
- 1 METER SETTER MUELLER COPPER METER YOKE/SETTER (BALL STYLE W/DUAL CHECKS), W/ LOCKWING ANGLE BALL STOP VALVE AND DUAL CHECK VALVE (W/ MIP METER THREADS ON INLET AND OUTLET). STANDARD SERVICE SIZE SHALL BE 3/4" MODEL B-24118-2A (THE DISTRICT RECOMMENDS USING THE 12" HIGH SETTER).
- 2 WATER METER SHALL BE BADGER METERS, READING CU. FT., TRPL WITH MXU. DEVELOPER / CONTRACTOR SHALL PROVIDE THE METER & CERTIFICATE FOR MXU. STANDARD SERVICE SIZE SHALL BE 3/4" RCDL 9.0" LL. THE REMOTE TRANSMITTER ASSEMBLY SHALL ONLY BE INSTALLED BY THE METER MANUFACTURER'S REPRESENTATIVE.
- 3 METER BOX & LID FOR TOUCH PAD. INSTALL BOX EXTENSION SHALL BE SIZED AS NEEDED FOR METER TO LID CLEARANCE. CONTRACTOR / DEVELOPER RESPONSIBILITY. USE CHRISTI MODEL B30 W/ B30P LID FOR 3/4" & 1" METERS, B36 W/ B36P FOR 1 1/2" & 2" METERS. INSTALL BRICK BLOCKS UNDER EACH CORNER AND AT THE MIDDLE EACH OF THE LONG SIDE OF THE PERIMETER OF THE METER BOX. (MINIMUM OF SIX (6) BLOCKS PER BOX). PROVIDE TRAFFIC RATED BOX & LID IN ALL TRAFFIC AREAS.
- 4 -
- 5 METER COUPLING MUELLER H-10890 OR EQUAL (3/4" X 4" M.I.P. X SWIVEL NUT)
- 6 -
- 7 TOUCH PAD ASSEMBLY PURCHASED AND INSTALLED BY CONTRACTOR / DEVELOPER. APPROX. THREE (3) FEET OF SLACK IN WIRE)
- 8 CURB STOP MUELLER B-25166 BALL METER VALVE W/ LOCKWING OR EQUAL. PROVIDE 3"Ø MIN. PVC RISER EXTENDING TO 2" ABOVE GRAVEL W/ A REMOVABLE SEAL. (RECOMMEND 90° CURB STOP AND CLOSE NIPPLE TO SETTER)
- 9 TYPE K COPPER PIPE, NO SPLICING ALLOWED UNDER ANY HARD SURFACE AREAS. STANDARD SERVICE SHALL BE 3/4"Ø.
- 10 CONTRACTOR / DEVELOPER SHALL PROVIDE MIN. 2"Ø CONDUIT SLEEVE FOR WATER SERVICE UNDER SIDEWALK.
- 11 MUELLER-BRONZE SERVICE SADDLES - H13000 SERIES, BR2B SERIES, WITH MUELLER BRONZE CORPORATION BALL VALVE.

NOTES:

- 1. ALL BOLTS, PIPING AND FITTINGS TO BE BRASS, BRONZE, COPPER, OR STAINLESS STEEL.
- 2. ONLY TO BE USED FOR EXISTING CONNECTIONS

			OLIVEHURST PUBLIC UTILITY DISTRICT	
			STANDARD 3/4"Ø WATER SERVICE	
			Garry E. Laughlin	
			District Engineer	
5-05	FORMERLY STD. DTL. NO. W-18	SCD	5-6-2005	
DATE	REVISIONS	BY	APPROVED	DATE

8-32A



MATERIALS LIST:

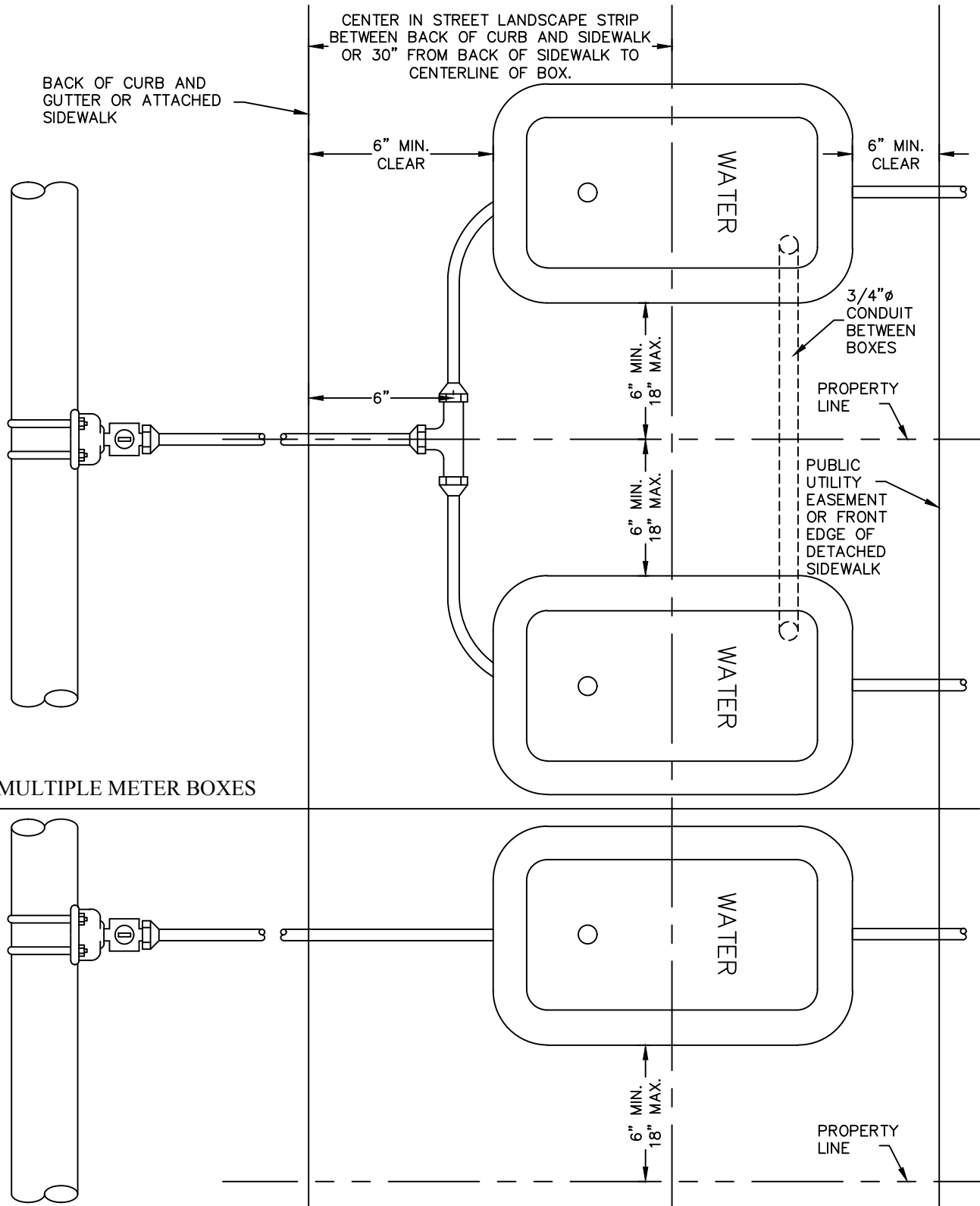
- 1 METER SETTER MUELLER COPPER METER YOKE/SETTER (BALL STYLE W/DUAL CHECKS), W/ LOCKWING ANGLE BALL STOP VALVE AND DUAL CHECK VALVE (W/ MIP METER THREADS ON INLET AND OUTLET).THE DISTRICT RECOMMENDS USING THE 12" HIGH SETTER.
- 2 WATER METER SHALL BE BADGER METERS, READING CU. FT., TRPL WITH MXU. DEVELOPER / CONTRACTOR SHALL PROVIDE THE METER & CERTIFICATE FOR MXU. THE REMOTE TRANSMITTER ASSEMBLY SHALL ONLY BE INSTALLED BY THE METER MANUFACTURER'S REPRESENTATIVE OR THE DISTRICT.
- 3 METER BOX & LID FOR TOUCH PAD. INSTALL BOX EXTENSION SHALL BE SIZED AS NEEDED FOR METER TO LID CLEARANCE. CONTRACTOR / DEVELOPER RESPONSIBILITY. USE CHRISTI MODEL B36 W/ B36P FOR 1 1/2" & 2" METERS. INSTALL BRICK BLOCKS UNDER EACH CORNER AND AT THE MIDDLE EACH OF THE LONG SIDE OF THE PERIMETER OF THE METER BOX. (MINIMUM OF SIX (6) BLOCKS PER BOX). PROVIDE TRAFFIC RATED BOX & LID IN ALL TRAFFIC AREAS.
- 4 -
- 5 METER COUPLING MUELLER WITH SWIVEL NUT.
- 6 -
- 7 TOUCH PAD ASSEMBLY PURCHASED AND INSTALLED BY CONTRACTOR / DEVELOPER. APPROX. THREE (3) FEET OF SLACK IN WIRE)
- 8 CURB STOP MUELLER B-25166 BALL METER VALVE W/ LOCKWING OR EQUAL. PROVIDE 3"Ø MIN. PVC RISER EXTENDING TO 2" ABOVE GRAVEL W/ A REMOVABLE SEAL. (RECOMMEND 90° CURB STOP AND CLOSE NIPPLE TO SETTER)
- 9 Polyethylene Water Service PIPE, must be continuous run from water main to curb stop. STANDARD SERVICE SHALL BE 1 1/2"Ø. See installation guide by Plastic Pipe & Fitting Assn.
- 10 CONTRACTOR / DEVELOPER SHALL PROVIDE MIN. 3"Ø CONDUIT SLEEVE FOR WATER SERVICE UNDER SIDEWALK.
- 11 MUELLER-BRONZE SERVICE SADDLES - H13000 SERIES, BR2B SERIES, WITH MUELLER BRONZE CORPORATION BALL VALVE.

NOTES:

1. ALL BOLTS, PIPING AND FITTINGS TO BE BRASS, BRONZE, POLY, OR STAINLESS STEEL.

			OLIVEHURST PUBLIC UTILITY DISTRICT	
			STANDARD 1 1/2"Ø WATER SERVICE	
10-16	CHANGE SERVICE LINE MATERIAL	JCT	John C. Tillotson, P.E. District Engineer	8-10-2016 DATE
6-14	CHANGE METER MFR	JCT		
9-12	CHANGE SVC SIZE TO 1 1/2, FIRE SPRINKLER	JCT		
5-05	FORMERLY STD. DTL. NO. W-18	SCD		
DATE	REVISIONS	BY		

8-32



MULTIPLE METER BOXES

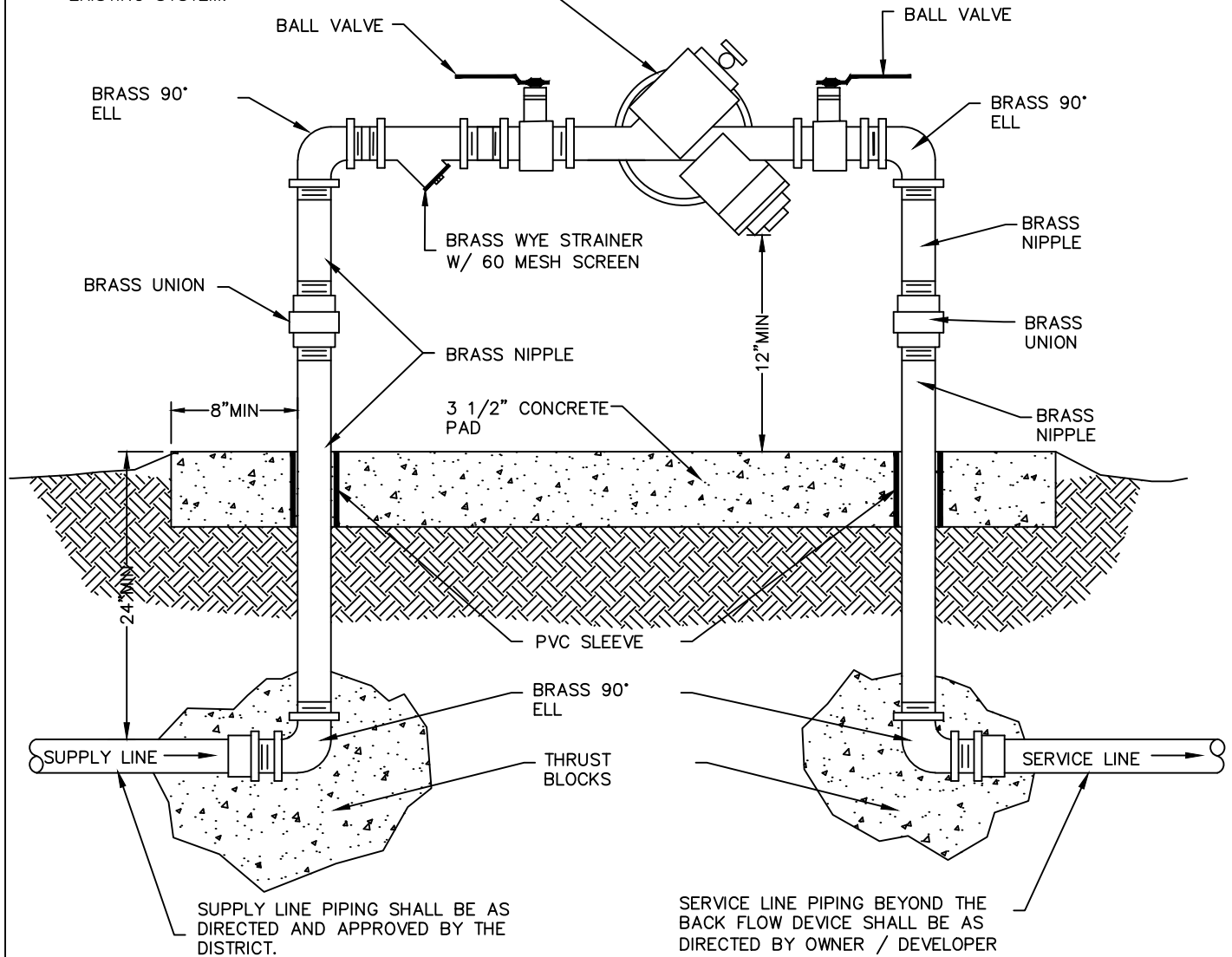
NOTES: SINGLE METER BOX

1. REFER TO IMPROVEMENT STANDARD DETAILS FOR METER BOXES FOR ADDITIONAL REQUIREMENTS AND MATERIALS.
2. BOXES REQUIRE MINIMUM OF 5' SEPARATION (CENTER TO CENTER) FROM HYDRANTS, STREETLIGHTS, TRANSFORMERS, ETC

			OLIVEHURST PUBLIC UTILITY DISTRICT	
			WATER METER BOXES	
			Garry E. Laughlin	
			District Engineer	
5-05	FORMERLY STD. DTL. NO. W-2C	SCD	5-6-2005	
DATE	REVISIONS	BY	APPROVED	DATE

8-34

BACKFLOW PREVENTION DEVICE.
 THE INSTALLED DEVICE MUST BE CERTIFIED
 AND INSPECTED BY THE DISTRICT PRIOR TO
 THE DRAWING OF ANY WATER FROM THE
 EXISTING SYSTEM.



SUPPLY LINE PIPING SHALL BE AS DIRECTED AND APPROVED BY THE DISTRICT.

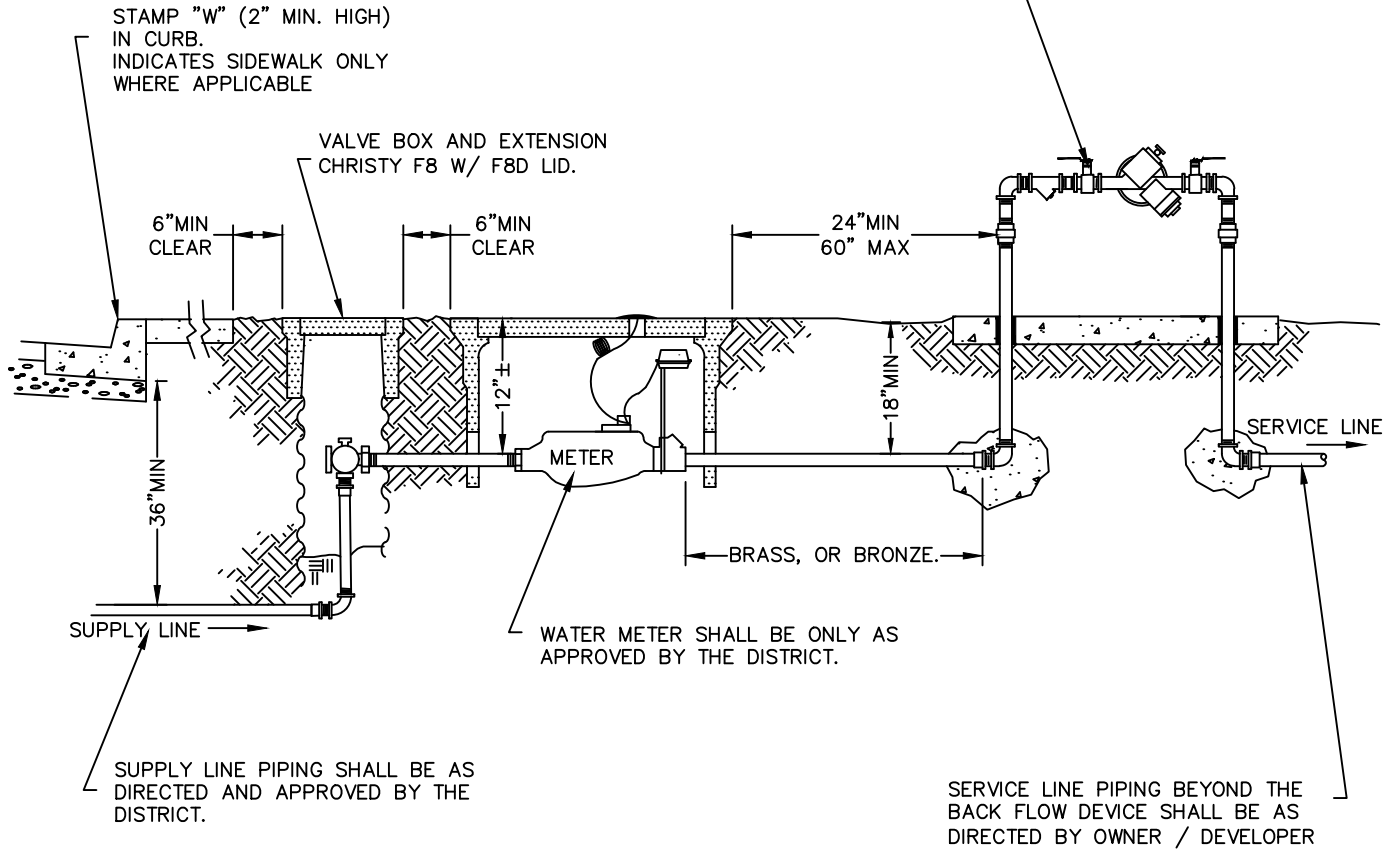
SERVICE LINE PIPING BEYOND THE BACK FLOW DEVICE SHALL BE AS DIRECTED BY OWNER / DEVELOPER

NOTES:

1. ALL PIPING AND FITTINGS SHALL BE BRASS, BRONZE, OR STAINLESS STEEL.
2. ALL BOLTS SHALL BE TYPE 304 STAINLESS STEEL.
3. ALL BACK FLOW PREVENTION DEVICES SHALL BE TESTED BY A DISTRICT APPROVED CERTIFIED TESTER WITH A CURRENT AWWA CERTIFICATION AND INSPECTED BY THE DISTRICT PRIOR TO BEING PLACED INTO SERVICE.
4. THE BACK FLOW PREVENTION DEVICE SHALL BE INSTALLED ABOVE GROUND, IN A HORIZONTAL & LEVEL POSITION. THE ASSEMBLY SHALL BE LOCATED ON THE CUSTOMER'S SIDE & NO FURTHER THAN FIVE (5) FEET FROM THE WATER METER.
5. DEVICE EQUIPMENT SHALL BE INSTALLED A MIN. OF 24" FROM ANY STRUCTURE OR HARDSCAPING.
6. WHEN UNIT IS NEAR A STRUCTURE - MOUNT TEST COCKS ON OPEN OR NON-OBSTRUCTED SIDE.
7. ALL ABOVE GROUND ASSEMBLY SHALL RECEIVE TWO (2) COATS OF RED PRIMER & ONE COAT OF EXT. BLACK ENAMEL.
8. CONTRACTOR / DEVELOPER SHALL PROVIDE A LOCKABLE INSULATED CAGE.
9. NO OUTLET, TAP, TEE, OR CONNECTION BETWEEN THE WATER MAIN AND THE BACK FLOW PREVENTER IS ALLOWED UNLESS APPROVED BY THE DISTRICT ENGINEER.

			OLIVEHURST PUBLIC UTILITY DISTRICT	
			2" & LESS BACKFLOW DEVICE	
5-05	NEW DETAIL	SCD	Garry E. Laughlin District Engineer APPROVED _____ DATE 5-6-2005	
DATE	REVISIONS	BY		
			8-40	

BACKFLOW PREVENTION DEVICE.
THE INSTALLED DEVICE MUST BE CERTIFIED
AND INSPECTED BY THE DISTRICT PRIOR TO
THE DRAWING OF ANY WATER FROM THE
DISTRICT SYSTEM.

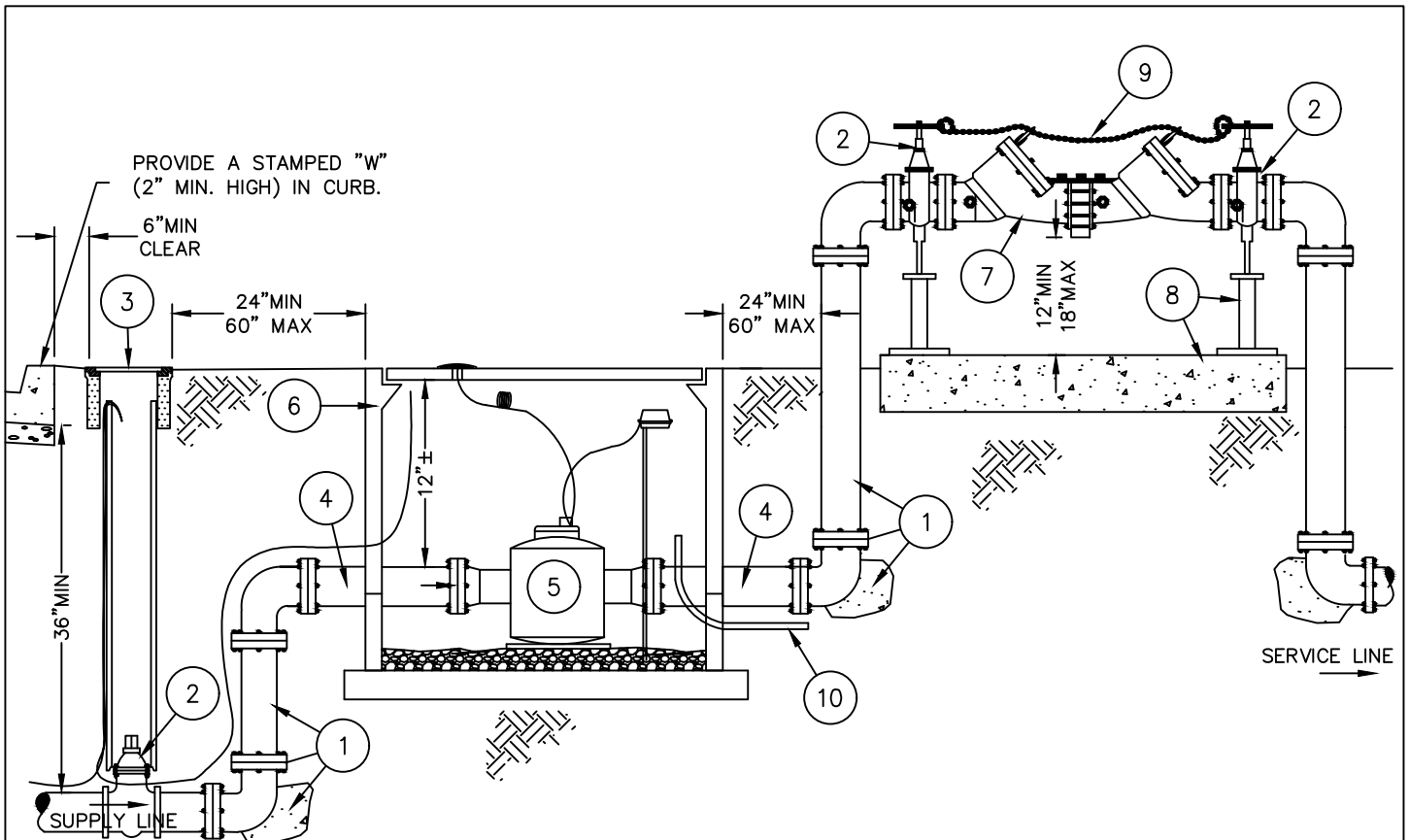


NOTES:

1. ALL PIPING AND FITTINGS SHALL BE BRASS, BRONZE, OR STAINLESS STEEL.
2. ALL BOLTS SHALL BE TYPE 304 STAINLESS STEEL.
3. ALL BACK FLOW PREVENTION DEVICES SHALL BE TESTED BY A DISTRICT APPROVED CERTIFIED TESTER WITH A CURRENT AWWA CERTIFICATION AND INSPECTED BY THE DISTRICT PRIOR TO BEING PLACED INTO SERVICE.
4. THE BACK FLOW PREVENTION DEVICE SHALL BE INSTALLED ABOVE GROUND, IN A HORIZONTAL & LEVEL POSITION. THE ASSEMBLY SHALL BE LOCATED ON THE CUSTOMER'S SIDE & NO FURTHER THAN FIVE (5) FEET FROM THE WATER METER.
5. DEVICE EQUIPMENT SHALL BE INSTALLED A MIN. OF 24" FROM ANY STRUCTURE OR HARDSCAPING.
6. WHEN UNIT IS NEAR A STRUCTURE - MOUNT TEST COCKS ON OPEN OR NON-OBSTRICTED SIDE.
7. ALL ABOVE GROUND ASSEMBLY SHALL RECEIVE TWO (2) COATS OF RED PRIMER & ONE COAT OF EXT. BLACK ENAMEL.
8. CONTRACTOR / DEVELOPER SHALL PROVIDE A LOCKABLE, INSULATED CAGE.
9. NO OUTLET, TAP, TEE, OR CONNECTION BETWEEN THE WATER MAIN AND THE BACK FLOW PREVENTER IS ALLOWED UNLESS APPROVED BY THE DISTRICT ENGINEER.

			OLIVEHURST PUBLIC UTILITY DISTRICT	
			2" & LESS BACKFLOW DEVICE	
			Garry E. Laughlin	
			District Engineer	
5-05	NEW DETAIL	SCD	5-6-2005	
DATE	REVISIONS	BY	APPROVED	DATE

8-41



PROVIDE A STAMPED "W"
(2" MIN. HIGH) IN CURB.

6" MIN
CLEAR

24" MIN
60" MAX

24" MIN
60" MAX

12" MIN
18" MAX

36" MIN

12" ±

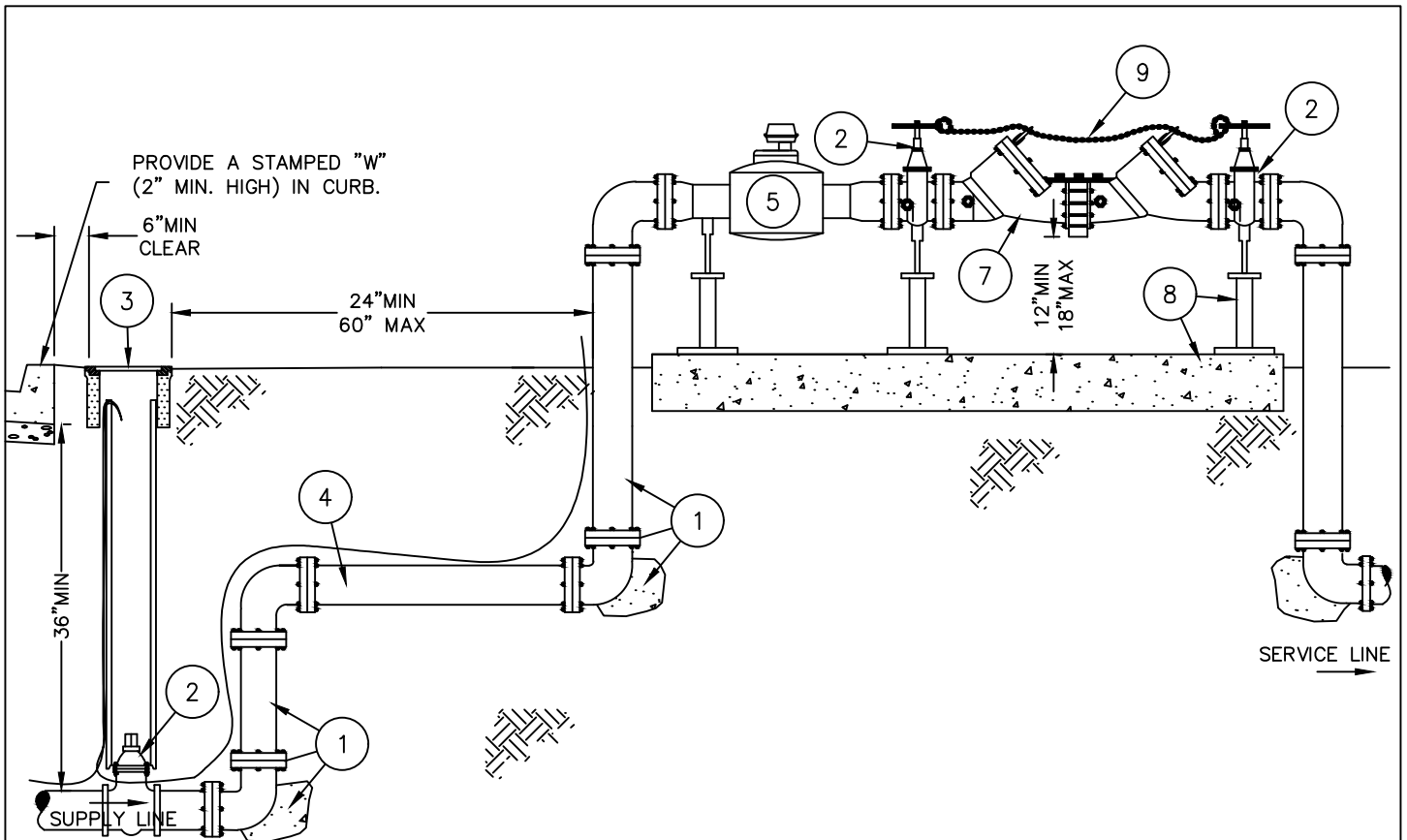
SERVICE LINE
→

- 1 FLANGED DUCTILE IRON PIPE AND FITTINGS W/ TYPE 304 STAINLESS STEEL BOLTS. PROVIDE TRACER WIRE AND THRUST BLOCKS PER OPUD IMPROVEMENT STANDARDS SECTION 8.
- 2 MUELLER GATE VALVE, REFER TO IMPROVEMENT STANDARDS SECTION 8. PROVIDE HANDLE ON ABOVE GRADE VALVES.
- 3 CHRISTY G5 TRAFFIC VALVE BOX. MARKED "WATER" INSTALLED PER DISTRICT IMPROVEMENT STANDARDS.
- 4 MINIMUM SPOOL LENGTH UPSTREAM AND DOWNSTREAM OF METER SHALL BE FIVE (5) TIMES THE PIPE DIAMETER.
WATER METER SHALL BE INVENSYS "W" TURBO METER W/ STRAINER, READING CU. FT., TRPL WITH MXU. DEVELOPER / CONTRACTOR SHALL PROVIDE THE METER & CERTIFICATE FOR MXU. THE REMOTE TRANSMITTER ASSEMBLY SHALL ONLY BE INSTALLED BY THE METER MANUFACTURER'S REPRESENTATIVE.
- 5
- 6 CHRISTY B40 METER BOX W/ B40P LID FOR TOUCH PAD. PROVIDE CONC. OR BRICK BLOCK UNDER THE ENTIRE BOTTOM PERIMETER OF THE METER BOX.
- 7 BACKFLOW PREVENTION DEVICE. THE INSTALLED DEVICE MUST BE CERTIFIED AND INSPECTED BY THE DISTRICT PRIOR TO THE DRAWING OF ANY WATER FROM THE EXISTING SYSTEM.
- 8 3 1/2" CONC. SLAB W/ ADJUSTABLE SUPPORT STAND BOLTED INTO CONC. W/ A MINIMUM OF TWO (2) WEDGE BOLTS.
- 9 INSTALL 3/8" NON-CASE HARDENED CHAIN W/ ONE (1) DISTRICT LOCK.
- 10 PROVIDE 3/4"Ø PVC CONDUIT TO OTHER MANIFOLD BOXES.

NOTES:

- 1. ALL PIPING AND FITTINGS SHALL BE FLANGED DUCTILE IRON.
- 2. ALL BOLTS SHALL BE TYPE 304 STAINLESS STEEL.
- 3. ALL BACK FLOW PREVENTION DEVICES SHALL BE TESTED BY A DISTRICT APPROVED CERTIFIED TESTER WITH A CURRENT AWWA CERTIFICATION AND INSPECTED BY THE DISTRICT PRIOR TO BEING PLACED INTO SERVICE.
- 4. THE BACK FLOW PREVENTION DEVICE SHALL BE INSTALLED ABOVE GROUND, IN A HORIZONTAL & LEVEL POSITION. THE ASSEMBLY SHALL BE LOCATED ON THE CUSTOMER'S SIDE & NO FURTHER THAN FIVE (5) FEET FROM THE WATER METER.
- 5. DEVICE EQUIPMENT SHALL BE INSTALLED A MIN. OF 24" FROM ANY STRUCTURE OR HARDSCAPING.
- 6. WHEN UNIT IS NEAR A STRUCTURE – MOUNT TEST COCKS ON OPEN OR NON-OBSTRUCTED SIDE.
- 7. CONTRACTOR / DEVELOPER SHALL PROVIDE A LOCKABLE INSULATED CAGE.
- 8. NO OUTLET, TAP, TEE, OR CONNECTION BETWEEN THE WATER MAIN AND THE BACK FLOW PREVENTER IS ALLOWED UNLESS APPROVED BY THE DISTRICT ENGINEER.

			OLIVEHURST PUBLIC UTILITY DISTRICT	
			3" & LARGER BACKFLOW DEVICE	
			Garry E. Laughlin	
			District Engineer	
5-05	NEW DETAIL	SCD	8-42	
DATE	REVISIONS	BY		
			APPROVED	DATE



- ① FLANGED DUCTILE IRON PIPE AND FITTINGS W/ TYPE 304 STAINLESS STEEL BOLTS. PROVIDE TRACER WIRE AND THRUST BLOCKS PER OPUD IMPROVEMENT STANDARDS SECTION 8.
- ② MUELLER GATE VALVE, REFER TO IMPROVEMENT STANDARDS SECTION 8. PROVIDE HANDLE ON ABOVE GRADE VALVES.
- ③ CHRISTY G5 TRAFFIC VALVE BOX. MARKED "WATER" INSTALLED PER DISTRICT IMPROVEMENT STANDARDS.
- ④ MINIMUM SPOOL LENGTH UPSTREAM AND DOWNSTREAM OF METER SHALL BE FIVE (5) TIMES THE PIPE DIAMETER.
WATER METER SHALL BE INVENSYS "W" TURBO METER W/ STRAINER, READING CU. FT., TRPL WITH MXU.
- ⑤ DEVELOPER / CONTRACTOR SHALL PROVIDE THE METER & CERTIFICATE FOR MXU. THE REMOTE TRANSMITTER ASSEMBLY SHALL ONLY BE INSTALLED BY THE METER MANUFACTURER'S REPRESENTATIVE.

- ⑦ BACKFLOW PREVENTION DEVICE. THE INSTALLED DEVICE MUST BE CERTIFIED AND INSPECTED BY THE DISTRICT PRIOR TO THE DRAWING OF ANY WATER FROM THE EXISTING SYSTEM.
- ⑧ 3 1/2" CONC. SLAB W/ ADJUSTABLE SUPPORT STAND BOLTED INTO CONC. W/ A MINIMUM OF TWO (2) WEDGE BOLTS.
- ⑨ INSTALL 3/8" NON-CASE HARDENED CHAIN W/ ONE (1) DISTRICT LOCK.

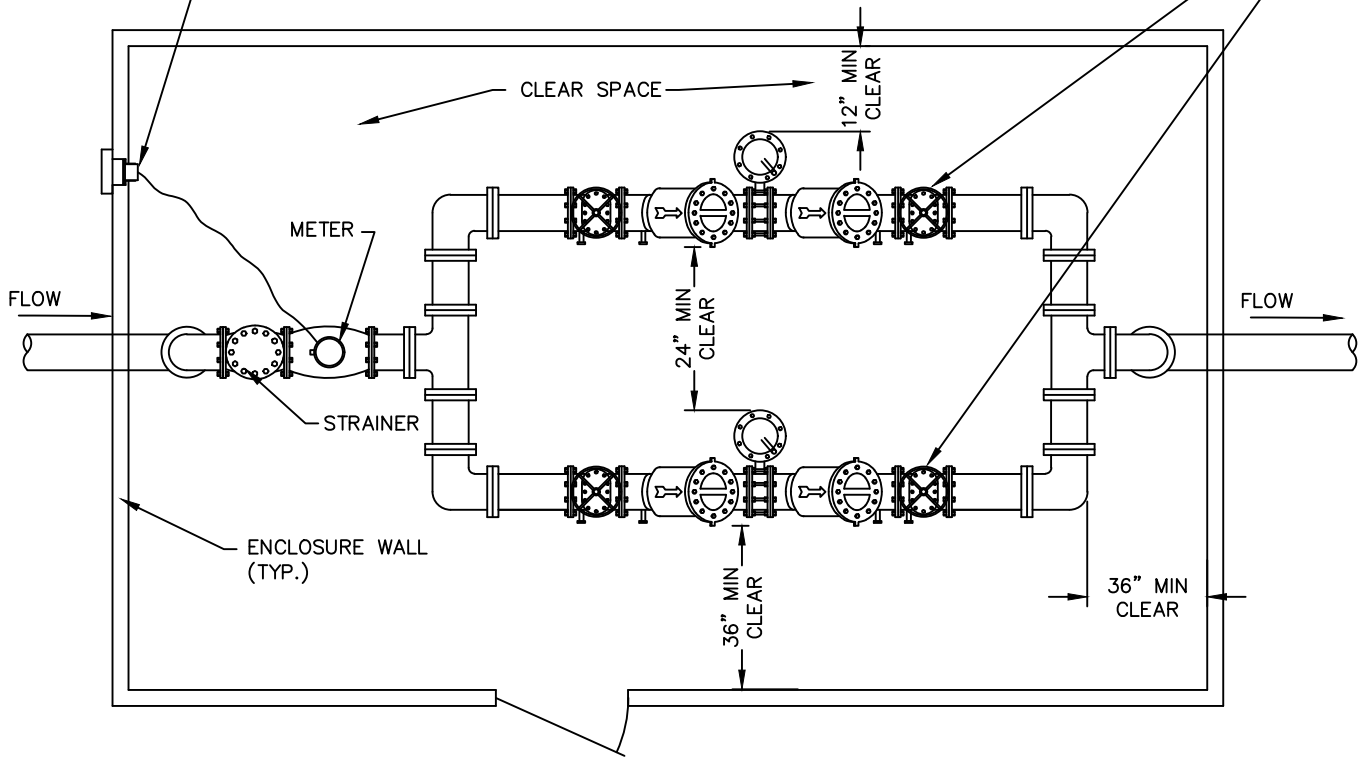
NOTES:

- 1. ALL PIPING AND FITTINGS SHALL BE FLANGED DUCTILE IRON.
- 2. ALL BOLTS SHALL BE TYPE 304 STAINLESS STEEL.
- 3. ALL BACK FLOW PREVENTION DEVICES SHALL BE TESTED BY A DISTRICT APPROVED CERTIFIED TESTER WITH A CURRENT AWWA CERTIFICATION AND INSPECTED BY THE DISTRICT PRIOR TO BEING PLACED INTO SERVICE.
- 4. THE BACK FLOW PREVENTION DEVICE SHALL BE INSTALLED ABOVE GROUND, IN A HORIZONTAL & LEVEL POSITION. THE ASSEMBLY SHALL BE LOCATED ON THE CUSTOMER'S SIDE & NO FURTHER THAN FIVE (5) FEET FROM THE WATER METER.
- 5. DEVICE EQUIPMENT SHALL BE INSTALLED A MIN. OF 24" FROM ANY STRUCTURE OR HARDSCAPING.
- 6. WHEN UNIT IS NEAR A STRUCTURE – MOUNT TEST COCKS ON OPEN OR NON-OBSTRUCTED SIDE.
- 7. CONTRACTOR / DEVELOPER SHALL PROVIDE A LOCKABLE INSULATED CAGE.
- 8. NO OUTLET, TAP, TEE, OR CONNECTION BETWEEN THE WATER MAIN AND THE BACK FLOW PREVENTER IS ALLOWED UNLESS APPROVED BY THE DISTRICT ENGINEER.

			OLIVEHURST PUBLIC UTILITY DISTRICT	
			3" & LARGER BACKFLOW DEVICE	
			Garry E. Laughlin	
			District Engineer	
5-05	NEW DETAIL	SCD	<div style="font-size: 2em; font-weight: bold; margin: 0;">8-43</div>	
DATE	REVISIONS	BY		
			APPROVED	DATE

OWNER/CONTRACTOR SHALL PROVIDE AND INSTALL CONDUIT FOR A REMOTE METER READER AND "MXU" RADIO READ THROUGH ENCLOSURE WALL. THE OWNER HAS THE OPTION TO FURNISH AND INSTALL A FLUSH MOUNT OR SURFACE LOCKABLE BOX AND CONDUIT.

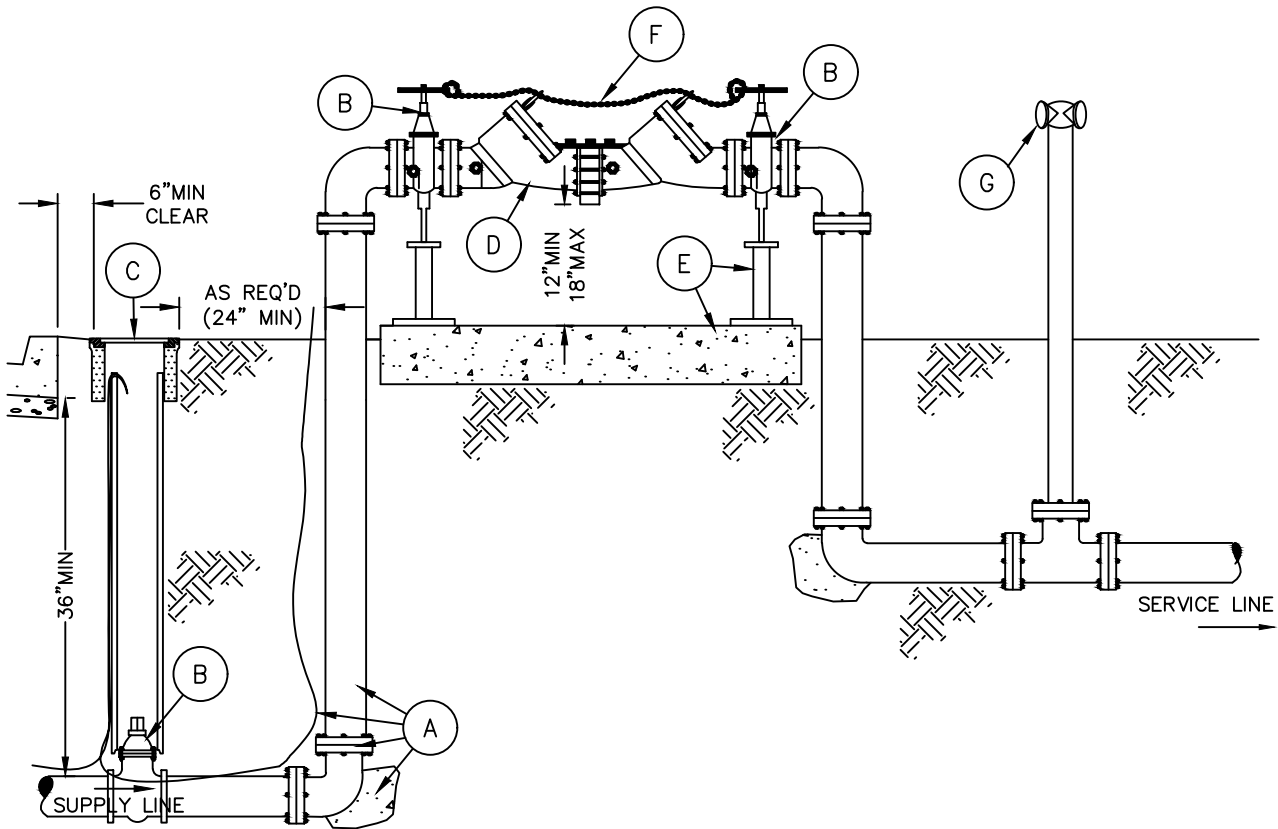
BACKFLOW PREVENTION DEVICES. THE INSTALLED DEVICE MUST BE CERTIFIED AND INSPECTED BY THE DISTRICT PRIOR TO THE DRAWING OF ANY WATER FROM THE DISTRICT SYSTEM.



NOTES:

1. ALL PIPING AND FITTINGS SHALL BE FLANGED DUCTILE IRON.
2. ALL BOLTS SHALL BE TYPE 304 STAINLESS STEEL.
3. ALL BACK FLOW PREVENTION DEVICES SHALL BE TESTED BY A DISTRICT APPROVED CERTIFIED TESTER WITH A CURRENT AWWA CERTIFICATION AND INSPECTED BY THE DISTRICT PRIOR TO BEING PLACED INTO SERVICE.
4. THE BACK FLOW PREVENTION DEVICE SHALL BE INSTALLED ABOVE GROUND, IN A HORIZONTAL & LEVEL POSITION. THE ASSEMBLY SHALL BE LOCATED ON THE CUSTOMER'S SIDE & NO FURTHER THAN FIVE (5) FEET FROM THE WATER METER.
5. DEVICE EQUIPMENT SHALL BE INSTALLED A MIN. OF 24" FROM ANY STRUCTURE OR HARDCAPING.
6. WHEN UNIT IS NEAR A STRUCTURE - MOUNT TEST COCKS ON OPEN OR NON-OBSTRUCTED SIDE.
7. CONTRACTOR / DEVELOPER SHALL PROVIDE A LOCKABLE INSULATED CAGE.
8. NO OUTLET, TAP, TEE, OR CONNECTION BETWEEN THE WATER MAIN AND THE BACK FLOW PREVENTER IS ALLOWED UNLESS APPROVED BY THE DISTRICT ENGINEER.
9. BACKFLOW ASSEMBLIES SHALL NOT BE INSTALLED IN BASEMENTS OR VAULTS.
10. SUPPORTS RECOMMENDED FOR ASSEMBLIES 3" AND LARGER.

			OLIVEHURST PUBLIC UTILITY DISTRICT	
			LARGE PARALLEL BACKFLOW UNITS	
5-05	NEW DETAIL	SCD	Garry E. Laughlin District Engineer	
DATE	REVISIONS	BY	APPROVED	DATE
				5-6-2005



- (A) FLANGED DUCTILE IRON PIPE AND FITTINGS W/ TYPE 304 STAINLESS STEEL BOLTS. PROVIDE TRACER WIRE AND THRUST BLOCKS PER OPUD IMPROVEMENT STANDARDS SECTION 8.
- (B) MUELLER GATE VALVE, REFER TO IMPROVEMENT STANDARDS SECTION 8. PROVIDE HANDLE ON ABOVE GRADE VALVES.
- (C) CHRISTY G5 TRAFFIC VALVE BOX, MARKED "WATER" & INSTALLED PER DISTRICT IMPROVEMENT STANDARDS.
- (D) BACKFLOW PREVENTION DEVICE. THE INSTALLED DEVICE MUST BE CERTIFIED AND INSPECTED BY THE DISTRICT PRIOR TO THE DRAWING OF ANY WATER FROM THE EXISTING SYSTEM.

- (E) 3 1/2" CONC. SLAB W/ ADJUSTABLE SUPPORT STAND BOLTED INTO CONC. W/ A MINIMUM OF TWO (2) WEDGE BOLTS.
- (F) INSTALL 3/8" NON-CASE HARDENED CHAIN W/ ONE (1) DISTRICT LOCK.
- (G) FIRE DEPARTMENT CONNECTION (FDC) SHALL BE INSTALLED 18" FROM BACK OF S/W (OR AS CLOSE AS POSSIBLE), 30' MIN./50' MAX FROM A FIRE HYDRANT. IF THE FDC SERVES MORE THAN ONE BUILDING, A POST INDICATOR VALVE IS REQUIRED FOR EACH BUILDING.

NOTES:

1. INSTALLATION & TESTING OF THE SERVICE CONNECTION SHALL BE AS SPECIFIED IN THE STANDARD SPECIFICATIONS.
2. ALL PIPING AND FITTINGS SHALL BE FLANGED DUCTILE IRON.
3. ALL BOLTS SHALL BE TYPE 304 STAINLESS STEEL.
4. ALL BACKFLOW PREVENTION DEVICES SHALL BE TESTED BY A DISTRICT APPROVED CERTIFIED TESTER WITH A CURRENT AWWA CERTIFICATION AND INSPECTED BY THE DISTRICT PRIOR TO BEING PLACED INTO SERVICE.
5. THE BACKFLOW PREVENTION DEVICE SHALL BE INSTALLED ABOVE GROUND, IN A HORIZONTAL & LEVEL POSITION.
6. DEVICE EQUIPMENT SHALL BE INSTALLED A MIN. OF 24" FROM ANY STRUCTURE OR HARDSCAPING.
7. WHEN UNIT IS NEAR A STRUCTURE - MOUNT TEST COCKS ON OPEN OR NON-OBSTRUCTED SIDE.
8. CONTRACTOR / DEVELOPER SHALL PROVIDE A LOCKABLE INSULATED CAGE.
9. NO OUTLET, TAP, TEE, OR CONNECTION BETWEEN THE WATER MAINLINE AND THE BACKFLOW PREVENTER IS ALLOWED UNLESS APPROVED BY THE DISTRICT ENGINEER.

			OLIVEHURST PUBLIC UTILITY DISTRICT	
			FIRE SERVICE CONNECTION	
			Garry E. Laughlin	
			District Engineer	
12-06	NEW DETAIL	ADC	8-45	
DATE	REVISIONS	BY		
			APPROVED	DATE

APPENDIX 2
Yuba County General Notes

SYMBOLS

	CENTERLINE
	PROPERTY LINE
	FENCE LINE
	RIGHT OF WAY
	POWER LINE
	SEWER LINE (INDICATE SIZE)
	STORM DRAIN (INDICATE SIZE)
	WATER LINE
	NATURAL GAS LINE
	FLOWLINE
	GUARDRAIL
	AC DIKE
	EXISTING EMBANKMENT SLOPE
	NEW EMBANKMENT SLOPE
	BO BLOW OFF
	FH FIRE HYDRANT
	RED REDUCER
	TB THRUST BLOCK
	WM WATER METER
	WCAP WATER PLUG
	WV WATER VALVE
	CULVERT
	DI DRAIN INLET
	CO CLEAN OUT
	MH MANHOLE
	UTILITY POLE
	STREET LIGHT
	SIGN
	TREE
	BARRICADE

YUBA COUNTY GENERAL NOTES

GENERAL:

- ALL CONSTRUCTION MATERIALS AND WORKMANSHIP SHALL CONFORM TO THE LATEST EDITION OF THE YUBA COUNTY IMPROVEMENT STANDARDS, THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS DATED MAY 2006 OR LATEST EDITION AND ANY OTHER AGENCIES' STANDARDS AS APPLICABLE.
- CONTRACTOR SHALL HAVE APPROVED PLANS IN HIS POSSESSION AND SHALL SCHEDULE PRECONSTRUCTION MEETING PRIOR TO CONSTRUCTION.
- TO SCHEDULE A PUBLIC WORKS INSPECTION, CALL (530) 749-5656 AT LEAST TWO (2) WORKING DAYS PRIOR TO INSPECTION, EXCLUDING WEEKENDS AND HOLIDAYS.
- IF WORK IS BEING DONE WITHIN THE COUNTY RIGHT OF WAY, CONTRACTOR SHALL OBTAIN AN ENCROACHMENT PERMIT FROM PUBLIC WORKS PRIOR TO COMMENCEMENT OF CONSTRUCTION.
- CONTRACTOR SHALL SUBMIT A TRAFFIC CONTROL PLAN TO PUBLIC WORKS FOR APPROVAL AT LEAST TWO (2) WORKING DAYS PRIOR TO PRECONSTRUCTION MEETING, EXCLUDING WEEKENDS AND HOLIDAYS. ANY CHANGES TO THE TRAFFIC CONTROL PLAN SHALL BE SUBMITTED TO PUBLIC WORKS FOR APPROVAL PRIOR TO CONSTRUCTION.
- CONTRACTOR SHALL PROVIDE FOR PUBLIC SAFETY AND TRAFFIC CONTROL IN ACCORDANCE WITH STATE OF CALIFORNIA MANUAL OF TRAFFIC CONTROLS. CONTRACTOR SHALL PROVIDE FOR SAFE VEHICULAR AND PEDESTRIAN ACCESS AT ALL TIMES DURING CONSTRUCTION.
- CONTRACTOR SHALL CONTACT ALL UTILITY COMPANIES FOR VERIFICATION OF THE LOCATIONS OF ALL UNDERGROUND FACILITIES. CALL UNDERGROUND SERVICE ALERT (USA) AT 1-800-227-2600 TWO (2) WORKING DAYS BEFORE ANY EXCAVATION. THE CONTRACTOR SHALL CONTACT THE PUBLIC WORKS DEPARTMENT 8 WORKING DAYS PRIOR TO ANY WORK NEAR COUNTY OPERATED TRAFFIC SIGNALS FOR MARKING OUT FACILITIES. IF THE CONTRACTOR FAILS TO NOTIFY THE COUNTY AND DAMAGES TO TRAFFIC SIGNAL FACILITIES OCCUR, THE CONTRACTOR WILL BE RESPONSIBLE TO PAY ALL COSTS TO REPAIR THE DAMAGED FACILITIES.
- THE CONTRACTOR IS RESPONSIBLE FOR THE PRESERVATION OF PROPERTY PER SECTION 7-1.11, 8-1.10 AND 15-1.02 OF THE STATE'S STANDARD SPECIFICATION.
- CONTRACTOR IS RESPONSIBLE FOR THE PROTECTION OF ALL EXISTING MONUMENTS AND OTHER SURVEY MARKERS. MONUMENTS AND SURVEY MARKERS DESTROYED DURING CONSTRUCTION SHALL BE REPLACED BY A LICENSED LAND SURVEYOR AT THE CONTRACTOR'S EXPENSE. CONTRACTOR SHALL PROVIDE COUNTY SURVEYOR WITH 2 WORKING DAYS NOTICE PRIOR TO MONUMENT REPLACEMENT.
- THE PRIME CONTRACTOR SHALL DESIGNATE A PERSON(S) WHO SHALL HAVE THE AUTHORITY TO REPRESENT AND ACT FOR THE CONTRACTOR ON THE JOB SITE DURING ALL WORKING AND NON-WORKING HOURS AND PROVIDE PUBLIC WORKS WITH CONTACT AND EMERGENCY CONTACT PHONE INFORMATION.
- CONTRACTOR SHALL HAVE APPROVED PLANS AVAILABLE ON SITE DURING CONSTRUCTION AND CONTRACTOR SHALL CONSTRUCT ALL IMPROVEMENTS TO THE LINE AND GRADE SHOWN ON THE PLANS. ANY DEVIATION FROM THE PLANS SHALL REQUIRE THE WRITTEN APPROVAL OF PUBLIC WORKS.
- THE CONTRACTOR SHALL BE IN COMPLIANCE WITH DUST CONTROL PER SECTION 10, STATE OF CALIFORNIA STANDARD SPECIFICATIONS AND AS REQUIRED BY THE FEATHER RIVER AIR QUALITY MANAGEMENT DISTRICT.
- WHERE WORK IS TO BE DONE IN AN OFF-SITE EASEMENT, THE CONTRACTOR SHALL NOTIFY THE PROPERTY OWNER IN WRITING AT LEAST 2 WORKING DAYS PRIOR TO COMMENCING WORK.
- CONTRACTOR IS RESPONSIBLE FOR THE PROTECTION OF EXISTING TRAFFIC DELINEATION AND SIGNS. ANY TRAFFIC DELINEATION OR SIGNS DAMAGED DURING ROAD CONSTRUCTION SHALL BE REPLACED WITH LIKE KIND OR AS APPROVED BY PUBLIC WORKS AT THE CONTRACTORS EXPENSE.
- EPOXY 12-INCH LONG #4 REBAR AT 2 FEET ON CENTER WHEN ADJOINING CONCRETE IS NOT POURED MONOLITHICALLY.
- PRIOR TO PLACING CURB, GUTTER, SIDEWALK, ASPHALT CONCRETE, OR BASE MATERIAL, ALL UNDERGROUND FACILITIES WITHIN THE ROAD RIGHT-OF-WAY SHALL BE INSTALLED, BACKFILL COMPLETED, AND THE CONTRACTOR SHALL SUBMIT DOCUMENTATION TO THE YUBA COUNTY PUBLIC WORKS DEPARTMENT THAT EACH OF THE UTILITY COMPANIES HAVING FACILITIES WITHIN THE WORK AREA HAVE SATISFACTORILY PASSED ACCEPTANCE TESTS.

YUBA COUNTY
DEPARTMENT OF PUBLIC WORKS

GENERAL NOTES,
SYMBOLS & ABBREVIATIONS

APPROVED BY: DATE: 8-29-06

001

YUBA COUNTY GENERAL NOTES (CONTINUED)

ABBREVIATIONS

AB	AGGREGATE BASE
AC	ASPHALT CONCRETE
ADT	AVERAGE DAILY TRAFFIC COUNT
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS
BC	BEGIN CURVE
BMP	BEST MANAGEMENT PRACTICES
C & G	CURB AND GUTTER
CIP	CAST IN PLACE
CL	CENTERLINE
CMP	CORRUGATED METAL PIPE
CO	CLEANOUT
CR	CURB RETURN
CSP	CORRUGATED STEEL PIPE
DI	DRAIN INLET
DW	DRIVEWAY
EC	END CURVE
EL	ELEVATION
EP	EDGE OF PAVEMENT
FES	FLARED END SECTION
FL	FLOWLINE
FOC	FACE OF CURB
GB	GRADE BREAK
HDPE	HIGH DENSITY POLYETHYLENE
HP	HINGE POINT/HIGH POINT
ID	INSIDE DIAMETER
INV	PIPE INVERT
LE	LANDSCAPE EASEMENT
LIP	LIP OF GUTTER
MAX	MAXIMUM
MH	MANHOLE
MIN	MINIMUM
MON	MONUMENT
NTS	NOT TO SCALE
OD	OUTSIDE DIAMETER
PCC	PORTLAND CEMENT CONCRETE
PG	PERFORMANCE GRADE
PI	POINT OF INTERSECTION
PL	PROPERTY LINE
PP	POWER POLE
PSE	PUBLIC SERVICE EASEMENT
PUE	PUBLIC UTILITY EASEMENT
PVC	POLY-VINYL-CHLORIDE
RCP	REINFORCED CONCRETE PIPE
R/W	RIGHT OF WAY
SB	SUBBASE
SD	STORM DRAIN
SG	SUBGRADE
SS	SANITARY SEWER
STA	STATION
STD	STANDARD
SW	SIDEWALK
SWPPP	STORM WATER POLLUTION PREVENTION PLAN
TBC	TOP BACK OF CURB
TBW	TOP BACK OF WALK
TI	TRAFFIC INDEX
TYP	TYPICAL
WV	WATER VALVE
YC	YUBA COUNTY

GENERAL:


17. THE STORM DRAIN SYSTEM SHALL HAVE WATERTIGHT JOINTS AT ALL CONNECTIONS.
18. BEFORE THE STORM DRAIN SYSTEM IS ACCEPTED, IT SHALL BE FLUSHED CLEAN AND ALL FOREIGN MATERIAL REMOVED TO THE SATISFACTION OF PUBLIC WORKS.
19. PRIOR TO ACCEPTANCE OF IMPROVEMENTS, CONTRACTOR SHALL SUBMIT WRITTEN APPROVAL FROM PG&E FOR STREET LIGHTS, MAINTENANCE BOND AND AS-BUILT PLANS.
20. ALL STRUCTURAL CONCRETE SHALL HAVE A 28 DAY COMPRESSIVE STRENGTH OF 3600 PSI AND ALL OTHER CONCRETE SHALL HAVE A MINIMUM STRENGTH OF 2500 PSI.
21. EROSION AND SEDIMENT CONTROL MEASURES FOR THIS PROJECT SHALL BE IN COMPLIANCE WITH THE STORM WATER POLLUTION PREVENTION PLAN (SWPPP) PREPARED FOR THE PROJECT IN ACCORDANCE WITH THE STATE'S GENERAL PERMIT FOR CONSTRUCTION ACTIVITIES AND THE COUNTY ACCEPTED EROSION AND SEDIMENT CONTROL PLAN. ACCORDING TO STATE LAW, IT IS THE RESPONSIBILITY OF THE PROPERTY OWNER THAT THE SWPPP BMP'S AND BINDER ARE KEPT UP TO DATE TO REFLECT CHANGING SITE CONDITIONS AND THE BINDER IS AVAILABLE ON THE PROJECT SITE AT ALL TIMES FOR REVIEW BY LOCAL AND STATE INSPECTORS.
22. THERE SHALL BE A ONE (1) YEAR MAINTENANCE PERIOD AFTER THE IMPROVEMENTS ARE ACCEPTED. THERE SHALL BE AN ADDITIONAL ONE (1) YEAR MAINTENANCE PERIOD FOR ANY ITEMS NEEDING REPAIRS AT THE END OF THE MAINTENANCE PERIOD.
23. IN URBAN SUBDIVISIONS A MINIMUM OF ONE STREET TREE PER 40' OF STREET FRONTAGE MEASURED FROM CURB RETURN TO CURB RETURN SHALL BE PLANTED ALONG EACH BLOCK. THERE SHALL BE A MINIMUM OF ONE STREET TREE PER LOT WITH SOME LOTS REQUIRING MORE THAN ONE STREET TREE TO MEET THE FRONTAGE REQUIREMENTS. ALL STREET TREES ARE TO BE LOCATED IN AN IRRIGATED AND LANDSCAPED AREA BETWEEN THE SIDEWALKS AND CURB. ALL TREES SHALL BE PLANTED AND INSPECTED PRIOR TO COMMUNITY DEVELOPMENT DIVISION'S CLEARANCE FOR A FINAL CERTIFICATE OF OCCUPANCY.
24. CONTRACTOR SHALL PROVIDE A COPY OF THE APPROVED AND SIGNED UTILITY PLAN AND COMPOSITE PLAN PRIOR TO COMMENCING ANY DRY UTILITY INSTALLATION.
25. THERE SHALL BE A 2 FOOT MINIMUM CLEARANCE BETWEEN THE BACK OF CURB AND THE OUTER EDGE OF THE STREET LIGHT POLE OR STREET LIGHT FOUNDATION FOR DETACHED SIDEWALK.

EARTHWORK:

1. ALL EXCAVATION, EMBANKMENT, AND BACKFILL SHALL CONFORM TO THE PROVISIONS IN SECTION 19, "EARTHWORK" OF THE STATE STANDARD SPECIFICATIONS.
2. CLEARING AND GRUBBING SHALL CONFORM TO THE PROVISIONS OF SECTION 16 OF THE STATE STANDARD SPECIFICATIONS.
3. CONSTRUCTION ACTIVITIES OCCURRING BETWEEN OCTOBER 1 AND APRIL 30 SHALL TREAT THE SUBGRADE FOR STABILIZATION AS PROPOSED BY GEOTECHNICAL ENGINEER AND AS APPROVED BY PUBLIC WORKS.
4. FROM OCTOBER 1 TO APRIL 30 NO MORE THAN 300' OF OPEN TRENCHES ARE ALLOWED THROUGHOUT PROJECT SITE AT ONE TIME AND ALL TRENCHES SHALL BE BACKFILLED PRIOR TO RAIN EVENTS.
5. CONTRACTOR IS NOTIFIED THAT JETTING IS NOT ALLOWED IN ANY TRENCHES.
6. ANY TRENCHES IN THE SECTION FROM BACK OF CURB TO BACK OF SIDEWALK SHALL BE BACKFILLED WITH NATIVE MATERIAL AND COMPACTED TO 90% RELATIVE COMPACTION.
7. ALL COMPACTION TESTS SHALL BE CERTIFIED BY A REGISTERED CIVIL ENGINEER PRIOR TO SUBMITTING TEST RESULTS TO THE PUBLIC WORKS DEPARTMENT.
8. COMPACTION AROUND MANHOLES, DI'S AND BOXES SHALL BE TESTED ON FOUR SIDES (EQUALLY SPACED) AT 2 FOOT VERTICAL INTERVALS.
9. IF COMPACTION REQUIREMENTS CAN NOT BE MET THEN A RECOMMENDATION FROM A GEOTECHNICAL ENGINEER SHALL BE SUBMITTED FOR APPROVAL BY THE PUBLIC WORKS DEPARTMENT.

YUBA COUNTY
DEPARTMENT OF PUBLIC WORKS

GENERAL NOTES,
SYMBOLS & ABBREVIATIONS


APPROVED BY: _____ DATE: 8-29-06

002

YUBA COUNTY GENERAL NOTES (CONTINUED)

ABBREVIATIONS

AB	AGGREGATE BASE
AC	ASPHALT CONCRETE
ADT	AVERAGE DAILY TRAFFIC COUNT
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS
BC	BEGIN CURVE
BMP	BEST MANAGEMENT PRACTICES
C & G	CURB AND GUTTER
CIP	CAST IN PLACE
CL	CENTERLINE
CMP	CORRUGATED METAL PIPE
CO	CLEANOUT
CR	CURB RETURN
CSP	CORRUGATED STEEL PIPE
DI	DRAIN INLET
DW	DRIVEWAY
EC	END CURVE
EL	ELEVATION
EP	EDGE OF PAVEMENT
FES	FLARED END SECTION
FL	FLOWLINE
FOC	FACE OF CURB
GB	GRADE BREAK
HDPE	HIGH DENSITY POLYETHYLENE
HP	HINGE POINT/HIGH POINT
ID	INSIDE DIAMETER
INV	PIPE INVERT
LE	LANDSCAPE EASEMENT
LIP	LIP OF GUTTER
MAX	MAXIMUM
MH	MANHOLE
MIN	MINIMUM
MON	MONUMENT
NTS	NOT TO SCALE
OD	OUTSIDE DIAMETER
PCC	PORTLAND CEMENT CONCRETE
PG	PERFORMANCE GRADE
PI	POINT OF INTERSECTION
PL	PROPERTY LINE
PP	POWER POLE
PSE	PUBLIC SERVICE EASEMENT
PUE	PUBLIC UTILITY EASEMENT
PVC	POLY-VINYL-CHLORIDE
RCP	REINFORCED CONCRETE PIPE
R/W	RIGHT OF WAY
SB	SUBBASE
SD	STORM DRAIN
SG	SUBGRADE
SS	SANITARY SEWER
STA	STATION
STD	STANDARD
SW	SIDEWALK
SWPPP	STORM WATER POLLUTION PREVENTION PLAN
TBC	TOP BACK OF CURB
TBW	TOP BACK OF WALK
TI	TRAFFIC INDEX
TYP	TYPICAL
WV	WATER VALVE
YC	YUBA COUNTY

PAVING:

1. AB SHALL CONFORM TO THE PROVISIONS OF SECTION 26 OF THE STATE STANDARD SPECIFICATIONS FOR CLASS 2 AGGREGATE BASE.
2. AC SHALL CONFORM TO THE STATE'S STANDARD SPECIFICATIONS PG 64-10 (VALLEY) OR PG 64-28 (FOOTHILLS), 1/2 INCH MINIMUM TO 3/4 INCH MAXIMUM. PRIME COAT SHALL BE SC-70 AND SHALL BE APPLIED IF AGGREGATE BASE IS SUBJECTED TO TRAFFIC OR INCLEMENT WEATHER PRIOR TO PAVING.
3. FOR PAVEMENT WIDENING, AC SURFACES SHALL BE SAWCUT A MINIMUM OF ONE FOOT INSIDE THE EP TO A NEAT, STRAIGHT LINE AND REMOVED AS DETERMINED BY PUBLIC WORKS. ASPHALT EMULSION SHALL BE APPLIED TO THE EXPOSED EDGE PRIOR TO PAVING. THE EXPOSED BASE MATERIAL SHALL BE GRADED AND RECOMPACTED PRIOR TO PAVING.
4. FROM OCTOBER 1 TO APRIL 30, PRIOR TO PAVING, ALL BACK OF CURB SHALL BE BACKFILLED TO WITHIN 1 INCH OF TOP OF CURB AND SHALL BE SLOPED AWAY FROM CURB UNLESS APPROVED BY PUBLIC WORKS AND SHALL BE MAINTAINED UNTIL LANDSCAPING IS IN PLACE.
5. THE FINISHED GRADE OF AC SHALL BE PLACED 0.25" ABOVE THE LIP OF GUTTER.
6. PRIOR TO ACCEPTANCE OF IMPROVEMENTS, IF THE FINISHED PAVEMENT SURFACE REQUIRES SAW CUTTING FOR REPAIRS, THE PAVEMENT SHALL BE GROUND FROM LIP OF GUTTER TO LIP OF GUTTER AND FROM INTERSECTION TO INTERSECTION AND SHALL BE REPAVED OR AS DETERMINED BY PUBLIC WORKS.

YUBA COUNTY
DEPARTMENT OF PUBLIC WORKS

GENERAL NOTES,
SYMBOLS & ABBREVIATIONS

APPROVED BY:

8-29-06
DATE:

003

APPENDIX 3
Yuba County Encroachment Permit Application &
general Conditions

**DRIVEWAY/ENCROACHMENT
PERMIT APPLICATION**

YUBA COUNTY DEPARTMENT OF PUBLIC WORKS
915 8th Street, Suite 125
Marysville, CA 95901
PHONE: (530) 749-5420 FAX: (530) 749-5424
Email: publicworks@co.yuba.ca.us

_____ Located _____ North Of _____
(Site Address) (Intersecting Road or Landmark)

APN: _____

Owner: _____ **Applicant Name:** _____

Address: _____ **Applicant Address:** _____

Phone: _____ **Phone:** _____

Email: _____ **Email:** _____

General Contractor: _____ **Sub-Contractor:** _____

Address: _____ **Address:** _____

Phone: _____ **Phone:** _____

Email: _____ **Email:** _____

List any additional sub-contractors on a separate sheet

Application is made for permission to excavate, construct and/or otherwise encroach on county right of way by performing the work described below:

1. Description of Work:

2. Estimated cost of work in right of way: _____

3. Attach 3 sets of plans (show location, dimensions, etc. Include all pertinent information).

4. Submit traffic control plan if applicable.

5. Submit work schedule (include hours, days and what will take place each day).

Upon Signature,

Applicant agrees to abide by the conditions of this permit and its provisions. Applicant also acknowledges that the permit will expire within one year if construction has not been completed and no extension has been requested.

Signature: _____ **Date:** _____

YUBA COUNTY DEPARTMENT OF PUBLIC WORKS DRIVEWAY CONSTRUCTION & ENCROACHMENT PERMIT GENERAL PROVISIONS

1. AUTHORITY:

Each permit is issued in accordance with Chapter 5.5 of Division 2, commencing with Section 1450 et seq., of the Streets and Highways Code (SHC) and Yuba County Ordinance Code, Chapter 9.50 and 11.52.

2. REVOCATION:

Except as otherwise provided for public corporations, franchise holders, and utilities, permits are revocable on five (5) days notice. These General Provisions, Utility Maintenance Provisions, and any permit issued hereunder are revocable or subject to modification or abrogation at any time without prejudice, however, to prior rights, including those evidenced by joint use agreements, franchise rights, reserved rights, or any other agreements for operation purposed in the County highway right-of-way.

3. RESPONSIBLE PARTY:

No party other than the named permittee or their agent is authorized to work under any permit.

4. ACCEPTANCE OF PROVISIONS:

It is understood and agreed by the permittee that doing of any work under this permit shall constitute an acceptance of the provisions of this permit and all attachments.

5. NOTICE PRIOR TO STARTING WORK:

Before starting work under the permit, the permittee shall notify the designated department representative two (2) working days prior to initial start of work. When work has been interrupted for more than five (5) working days, an additional notification is required before restarting work unless a pre-arranged agreement has been made with the department's representative. Unless otherwise specified, all work shall be performed on weekdays and during normal working hours of the department's representative.

6. STANDARDS OF CONSTRUCTION:

All work performed within the highway shall conform to the latest edition of the Yuba County Improvement Standards and the current California Department of Transportation Standard Specifications and any Special Provisions relating thereto.

7. INSPECTION AND APPROVAL BY THE DEPARTMENT:

All work shall be subject to monitoring, inspection, and approval by the Department. The permittee shall request a final inspection and acceptance of the work.

8. KEEP PERMIT ON THE WORK SITE:

The permit or a copy thereof shall be kept at the site of the work and must be shown to any representative of the department or any law enforcement officer on demand. **WORK SHALL BE SUSPENDED IF PERMIT IS NOT AT JOB SITE AS PROVIDED.**

9. CONFLICTING PERMITS:

If a prior encroachment conflicts with the proposed work, the new permittee must arrange for any necessary removal or relocation with the prior permittee. Any such removal or relocation will be at no expense to the department.

10. PERMITS FROM OTHER AGENCIES:

The party or parties to whom a permit is issued shall, whenever required by law, secure the written authorization for any work that must be approved by the Public Utilities Commission (PUC) of the State of California, CAL-OSHA, or any other public agency having jurisdiction. Failure to comply with the law, as noted above, will invalidate the department's permit.

11. PROVISIONS FOR PEDESTRIANS:

Where facilities exist, a minimum sidewalk and bike path width of four feet (4) shall be maintained at all times for safe passage through the work area. At no time shall pedestrians be diverted onto a portion of the street used for vehicular traffic. At locations where adjacent alternate walkways cannot be provided, appropriate signs and barricades shall be installed at the limits of construction and in advance of closure at the nearest crosswalk or intersection to divert pedestrians across the street.

12. PROTECTION OF TRAFFIC:

Adequate provisions shall be made for the protection of the traveling public. Warning signs, lights and safety devices, shall conform to the requirements of the Manual of Traffic Controls issued by the California Department of Transportation. Traffic control for day or nighttime lane closures shall be in conformance with California Department of Transportation Standard Plans for Traffic Control Systems. Nothing in the permit is intended, as to third parties, to impose on permittee any duty, or standard of care, greater than or different than the duty or standard of care imposed by law.

13. MINIMUM INTERFERENCE WITH TRAFFIC:

All work shall be planned and carried out so that there will be the least possible inconvenience to the traveling public. The permittee is authorized to place properly attired flagger(s) to stop and warn conventional highway traffic. Traffic shall not be unreasonably delayed. Flagging procedures shall be in conformance with the Instructions to Flaggers pamphlet and/or Manual of Traffic Controls for Construction and Maintenance Work Zones issued by the Department. A traffic control plan shall be submitted to the County for comment.

14. STORAGE OF EQUIPMENT AND MATERIAL:

No material shall be stored within eight (8) feet of the edge of the pavement or traveled way or within the shoulder lines where the shoulders are wider than eight (8) feet. Utilities are subject to the provisions of Section 22512 of the California Vehicle Code (CVC).

15. CARE OF DRAINAGE:

If the work contemplated in any permit shall interfere with the established drainage, ample provision shall be made by the permittee to provide for it as may be directed by the department.

16. MAKING REPAIRS:

In every case, the permittee shall be responsible for restoring to its former condition as nearly as may be possible any portion of the County highway facility which has been excavated or otherwise disturbed by permittee. The permittee shall maintain the surface over facilities placed under any permit. If the highway is not restored as herein provided for, or if the department elects to make repairs, permittee agrees by acceptance of permit to bear the cost thereof.

17. CLEAN UP RIGHT-OF-WAY:

Jobsite and right of way shall be kept clean at all times. Upon completion of the work all brush, timber, scraps, material, etc., shall be entirely removed and the County right-of-way shall be left in as presentable a condition as existed before work started.

18. COST OF WORK:

Unless otherwise stated on the permit or other separate written agreement, all cost incurred for work within the County right-of-way pursuant to this permit shall be borne by the permittee, and permittee hereby waives all claims for indemnification or contribution from the County for such work.

19. ACTUAL COST BILLING:

When the permittee is to be billed actual costs (as indicated on the face of the permit), such costs will be at the current hourly rate established by the department for permits.

20. SUBMIT PLAN:

For installation of all underground facilities, and all surface work or other activity of consequence, the permittee shall furnish two (2) sets of plans showing location and construction of other activity with its application. Prior to acceptance of the work, one (1) set of as-built plans shall be submitted to the Department of Public Works.

21. BONDING:

This permit shall not be effective for any purpose unless, and until the permittee files with the department a surety bond when required by the department in the form and amount required by the department. A bond is not ordinarily required of any public corporation or publicly or privately-owned utility but will be required of any utility that fails to meet any obligation arising out of the work permitted or done under a permit or fails to maintain its plant, work, or facilities. The said bond shall remain in force for a period of one (1) year after acceptance of the work by the department.

22. MAINTENANCE OF HIGHWAYS:

The permittee agrees, by acceptance of a permit, to properly maintain any encroachment. This will require inspection and repair of any damage to County facilities resulting from the encroachment.

23. RESPONSIBILITY FOR DAMAGE:

The County of Yuba and all officers and employees thereof, including but not limited to the Director of Public Works and the Deputy Director, shall not be answerable or accountable in any manner for injury to or death of any person, including but not limited to the permittee, persons employed by the permittee, persons acting in behalf of the permittee, or for damage to property from any cause. The permittee shall be responsible for any liability imposed by law and for injuries to or death of any person, including but not limited to the permittee, persons employed by the permittee, persons acting in behalf of the permittee, or damage to property arising out of work, or other activity permitted and done by the permittee under a permit, or arising out of the failure on the permittee's part to perform his obligations under any permit in respect to maintenance or any other obligations, or from any cause whatsoever during the progress of the work, or other activity, or at any subsequent time work or other activity is being performed under the obligations provided by and contemplated by the permit. The permittee shall indemnify and save harmless the County and all officers and employees thereof, including but not limited to the Director of Public Works and the Deputy Director, from all claims, suits or actions of every name, kind and description brought for or on account of injuries to or death of any person, including but not limited to the permittee, persons employed by the permittee, persons acting in behalf of the permittee and the public, or damage to property resulting from the performance of work or other activity under the permit, or arising out of the failure on the permittee's part to perform his obligations under any permit in respect to maintenance or any other obligations, or resulting from defects or obstructions, or from any cause whatsoever during the progress of the work, or other activity or at any subsequent time work or other activity is being performed under the obligations provided by and contemplated by the permit, except as otherwise provided by statute. The duty of the permittee to indemnify and save harmless includes the duties to defend as set forth in Section 2778 of the Civil Code. The permittee waives any and all rights to any type of expressed or implied indemnify against the County its officers or employees. It is the intent of the parties that the permittee will indemnify and hold harmless the County its officers and employees from any and all claims, suits or actions as set forth above regardless of the existence or degree of fault or negligence, whether active or passive, primary or secondary, on the part of the County the permittee, persons employed by the permittee, or persons acting in behalf of the permittee.

24. NO PRECEDENT ESTABLISHED:

This permit is issued with the understanding that any particular action is not to be

considered as establishing any precedent (1) on the question of the expediency of permitting any certain kind of encroachment to be erected within right-of-way of County highways, or (2) as to any utility of the acceptability of any such permits as to any other or future situation.

25. ARCHAEOLOGICAL:

The permittee shall cease work in the vicinity of any archaeological resources that are revealed. The Permit Engineer shall be notified immediately. A qualified archaeologist, retained by the permittee, will evaluate the situation and make recommendations to the Permit Engineer concerning the continuation of the work.

26. FUTURE MOVING OF INSTALLATIONS:

If the Encroachment Permit was issued at the request of the permittee, it is understood that whenever County construction, reconstruction or maintenance work on the highway requires the installation to be moved, adjusted or relocated, the permittee, at his sole expense, upon request of the department, shall comply with said request.

27. RIGHT OF ENTRY:

By signing the Permit Application, the applicant agrees to allow County Personnel right of entry to the property to inspect project site.

28. DEVIATIONS:

The permittee shall notify the department in writing of any proposed deviations or changes in the work to be done under any permit and shall not proceed therewith until he has obtained both the written consent of the department, and the written, signed and acknowledged consent to such deviation or change of any surety company whose bond or bonds are posted in connection with such work.

29. CHANGES ON PERMITS:

Any permit issued hereunder shall be subject to such conditions, changes or limitations as are from time to time deemed necessary by the department for the protection of the highways or to prevent undue interference with the traffic or to protect both persons and property within, upon or adjacent to the highways from damage or danger. In the case of changes or limitations or conditions to be made or imposed by the department after a permit is issued hereunder, the department shall notify the permittee thereof, in writing, either by mail to the address set forth on the application or by personal service upon the permittee. Such change in new limitation or condition shall be effective twenty-four (24) hours after deposit in the United States mail or immediately upon personal service.

30. PRESERVATION OF MONUMENTS:

Any monument set for the purpose of locating or preserving the lines of any road or property subdivisions, or a precise survey reference point, or a permanent survey bench mark within the county shall not be removed or disturbed or caused to be removed or disturbed without first obtaining permission in writing from the department to do so. Before monuments, reference points and bench marks are disturbed, or removed, they shall be tied out by a licensed surveyor or registered civil

engineer or under the directions of same. After completion of the work, the monuments, reference points and bench marks shall be accurately reset at the expense of permittee.

31. PROTECTION OF ADJOINING PROPERTY:

The permittee shall at all times and at his own expense preserve and protect from injury any adjoining property by providing proper foundations and taking other measures suitable for the purpose. Where in the protection of such property it is necessary to enter upon private property for the purpose of taking appropriate protective measures the permittee shall first attempt to obtain a license from the owner of such private property for such purposes. The permittee shall, at his own expense, shore up and protect all buildings, walls, fences or other property likely to be damaged during the progress of the excavation work and shall be responsible for all damage to any roads or other public or private property, real and personal, resulting from his failure properly to protect and carry out such work subject to the foregoing provisions relating to entry upon private property. Whenever it is necessary to trench through any lawn area, the permittee shall carefully cut the sod and upon completion of the work shall replace it or reseed the area if cutting a replacing sod is impractical. All construction and maintenance work shall be done in a manner calculated to leave the lawn area clean of earth and debris and in a condition as close as possible to that which existed before such work began. The permittee shall not remove, even temporarily, any trees, or shrubs which exist in parking strip areas without first obtaining the consent of the department or other county officials having control of such property.

32. SAVE HARMLESS AGREEMENT:

The permittee agrees to save and hold harmless the County and each and every officer and employee thereof from any liability or responsibility for any accident, loss or damage to persons or property arising out of or connected in any way with any work done by the permittee under any permit granted hereunder.

33. DISCLAIMER OF LIABILITY:

These provisions shall not be construed as imposing upon the County or any official or employee any liability or responsibility for damages to any person injured by the performance of any work for which the permit is issued hereunder, nor shall the County or any official or employee thereof be deemed to have assumed any such liability or responsibility by reason of inspections authorized hereunder, the issuance of any permit or the approval of any work permitted hereunder.

APPENDIX 4
Yuba County Traffic Control Devices

ARTICLE 4. TRAFFIC CONTROL DEVICES

9.10.250. Determination and designation of signs.

The Road Commissioner shall determine and designate the size, shape, and character of all official warning, regulatory, and direction signs, other than signs the size, shape, and character of which have been established by the State Department of Transportation pursuant to the Vehicle Code.

(Prior Code, § 9.10.250; Ord. No. 232)

State law reference(s)—Standards for traffic control devices, Vehicle Code §§ 21000.1, 21400.

9.10.260. Failure to post signs.

No provision of this Chapter for which signs are required shall be enforced against an alleged violator thereof unless appropriate signs are in place and sufficiently legible to be seen by an ordinarily observant person, giving notice of such provision.

(Prior Code, § 9.10.260; Ord. No. 232)

State law reference(s)—Signs required for certain provisions, Vehicle Code § 21103.

9.10.270. Traffic control signals; authorized.

- (a) The Board shall by resolution designate upon the basis of a traffic engineering investigation what intersections shall be controlled by official traffic control signals.
- (b) Whenever the Board finds upon the basis of a traffic engineering investigation that the conditions, because of which traffic control signals have been placed at an intersection pursuant to Subsection (a) above no longer exist, the Board shall by resolution direct that such traffic control signals be removed.

(Prior Code, § 9.10.270; Ord. No. 232)

State law reference(s)—Authority to regulate traffic by means of official traffic control signals, Vehicle Code § 21351.

9.10.280. Traffic control signals; placement.

The Road Commissioner is hereby authorized to place, maintain, operate, or remove, or cause to be placed, maintained, operated, or removed all official traffic control signals authorized by the Board as herein provided. Such official traffic signals shall conform to the provisions of Vehicle Code § 21450.

(Prior Code, § 9.10.280; Ord. No. 232)

9.10.290. Traffic control devices; hours of operation.

The Road Commissioner is hereby authorized to determine upon the basis of a traffic engineering investigation, the hours, and the days during which any traffic control device shall be in operation or be in effect,

except in those cases where such hours or days are specified in this Chapter or established by resolution of the Board.

(Prior Code, § 9.10.290; Ord. No. 232)

9.10.300. Traffic control devices; installation by Road Commissioner.

- (a) The Road Commissioner may place and maintain such traffic control devices in addition to those authorized by other provisions of this Chapter as may be necessary to regulate, guide or warn traffic, but the Road Commissioner shall make such determination upon the basis of traffic engineering principles and traffic investigations and in accordance with such standards, limitations and rules as may be established by ordinance or resolution of the Board.
- (b) Whenever the Road Commissioner finds upon the basis of a traffic engineering investigation that the conditions, because of which such traffic control devices have been installed as provided in Subsection (a) above, no longer exist, the Road Commissioner shall remove such traffic control devices.

(Prior Code, § 9.10.300; Ord. No. 232)

9.10.310. Traffic markings authorized.

- (a) The Road Commissioner is hereby authorized to place, upon the basis of a traffic engineering investigation, traffic guidelines dividing highways into the number of traffic lanes that are proper and necessary, and may place such other parking markings as are necessary to direct vehicular movements in accordance with requirements of this Chapter and the Vehicle Code.
- (b) Whenever the Road Commissioner finds upon the basis of a traffic engineering investigation that the conditions, because of which traffic guidelines or other markings are placed as provided in Subsection (a) above, no longer exist, the Road Commissioner shall remove such traffic guidelines or such markings.

(Prior Code, § 9.10.310; Ord. No. 232)

9.10.320. Distinctive roadway markings authorized.

- (a) Whenever the Road Commissioner determines and designates a distinctive roadway marking which shall indicate no driving over such marking, the Road Commissioner is authorized to designate by such marking those streets or parts of streets where the volume of traffic or the vertical or other curvature of the roadway renders it hazardous to drive on the left side of such marking or signs and marking. Such marking or signs and marking shall have the same effect as similar markings placed by the State Department of Transportation pursuant to provisions of the Vehicle Code.
- (b) Whenever the Road Commissioner finds that due to reconstruction, improvement or other changes that the conditions, because of which such distinctive roadway markings were placed as provided in Subsection (a) above, no longer exist, the Road Commissioner shall remove such distinctive roadway markings.

(Prior Code, § 9.10.320; Ord. No. 232)

9.10.330. Temporary removal of signals and other facilities; suspension of regulations.

Whenever, because of the construction, alteration, repair, or improvement of any highway, or because of other emergency, compliance with any prohibition pursuant to any action of the Board taken in accordance with this Chapter, will create a traffic hazard and the Road Commissioner so finds, he or she is hereby authorized to

either remove or cover up any traffic control device which informs persons of such prohibition. While such traffic control device is removed or covered the effect of such prohibition is suspended. At the end of such emergency, unless otherwise determined by the Board, the Road Commissioner shall replace or uncover such traffic control device.

(Prior Code, § 9.10.330; Ord. No. 232)

APPENDIX 5
Department of Water Resources
Variance Documents



State Water Resources Control Board Division of Drinking Water

Date: May 31, 2024

System No. CA5810003

Olivehurst Public Utility District
1970 Ninth Ave.
Olivehurst, CA 95961

Attention: John Tillotson, General Manager

Subject: Olivehurst Public Utility District (CA5810003): *Main Separation Alternative Request – Historic Olivehurst Pipeline Replacement Project*

This office has reviewed the *Waterworks Standards Main Separation Alternative Request Checklist (Checklist)* and attachments for the proposed Historic Olivehurst Pipeline Replacement Project in Olivehurst. Olivehurst Public Utility District submitted the Checklist on May 28, 2024.

California Waterworks Standards require all new water mains that cross any pipeline conveying sewage or stormwater to be constructed no less than 45-degrees to and at least one foot vertically above that pipeline and that no connection joints shall be made in the water main within eight horizontal feet of the crossing. The Checklist requests to waive these requirements at 16 crossings.

Additionally, California Waterworks Standards require new water mains to be installed at least four feet horizontally from parallel storm drains and ten feet horizontally from parallel sanitary sewers. The proposed water main will not meet these separation requirements at two sections.

The proposed alternatives are outlined in the attached tables. These alternatives were certified by Joseph Domenichelli, a California licensed Civil Engineer, to provide at least the same level of protection to public health as the minimum separation distances prescribed in the California Waterworks Standards (CCR, Title 22, Section 64572).

E. JOAQUIN ESQUIVEL, CHAIR | ERIC OPPENHEIMER, EXECUTIVE DIRECTOR

This letter constitutes written approval of these alternatives from the State Board as required in CCR, Title 22, Section 64551.100(a)(2) (Waivers and Alternatives). If you have questions, please contact Dan Cikuth at (530) 224-3271 or me at (530) 224-2487.



Rebecca Tabor, P.E.
Valley District Engineer
Division of Drinking Water
Field Operations Branch

Enclosures: Requested Separation Alternatives Tables

cc via email: Swarnjit Boyal, Olivehurst Public Utility District

Attachment 1: Olivehurst Public Utility District (CA5810003): Main Separation Alternative Request - Historical Olivehurst Pipeline Replacement Project Phase 1

Proposed Alternatives - Crossings Table

Crossing No.	Diameter (in)	Material	Proposed Pipe						Existing Utility	
			Crossing Above/Below	Vertical Separation (ft)	Crossing Angle (Deg)	Distance to Nearest Joint (ft)	Upstream Joint Type	Downstream Joint Type	Utility Type	Diameter (in)
1	8	Class 305 DR-14 PVC	Below	>1	90	9.0	Restrained	Restrained	SD	15
2	8	Class 305 DR-14 PVC	Below	>1	90	9.0	Restrained	Restrained	SD	36
3	8	Class 305 DR-14 PVC	Below	>1	90	4.0	Restrained	Restrained	SD	36
4	8	Class 305 DR-14 PVC	Below	>1	90	9.0	Restrained	Restrained	SD	24
5	8	Class 305 DR-14 PVC	Below	>1	90	4.0	Restrained	Restrained	SD	24
6	8	Class 305 DR-14 PVC	Below	>1	90	9.0	Restrained	Restrained	SS	8
7	8	Class 305 DR-14 PVC	Below	>1	90	6.0	Restrained	Restrained	SD	24
8	8	Class 305 DR-14 PVC	Below	>1	90	2.0	Restrained	Restrained	SD	8
9	8	Class 305 DR-14 PVC	Below	>1	90	9.0	Restrained	Restrained	SD	48
10	8	Class 305 DR-14 PVC	Below	>1	90	4.0	Restrained	Restrained	SD	12
11	8	Class 305 DR-14 PVC	Below	>1	90	2.0	Restrained	Restrained	SS	8
12	8	Class 305 DR-14 PVC	Below	>1	45	5.0	Restrained	Restrained	SD	24
13	8	Class 305 DR-14 PVC	Below	>1	90	9.0	Restrained	Restrained	SD	24
14	8	Class 305 DR-14 PVC	Below	>1	90	3.0	Restrained	Restrained	SD	30
15	8	Class 305 DR-14 PVC	Below	>1	90	6.0	Restrained	Restrained	SS	8
16	8	Class 305 DR-14 PVC	Below	>1	90	3.0	Restrained	Restrained	SD	24

Notes:
SD= Storm Drain
SS= Sanitary Sewer

Attachment 1: Olivehurst Public Utility District (CA5810003): Main Separation Alternative Request – Historical Olivehurst Pipeline Replacement Project Phase 1

Proposed Alternatives- Parallel Utilities

Location No.	Start Station	End Station	Proposed Pipe				Existing Utility	
			Diameter (in)	Material	Horizontal Separation to Existing Utility (ft)	Joint Type	Utility Type	Diameter (in)
17	15+90	17+75	8	PVC C900 DR14	<10	Restrained	SS	6
18	17+86	22+86	8	PVC C900 DR14	<10	Restrained	SS	6

Notes:

SD= Storm Drain

SS= Sanitary Sewer

May 28, 2024

Rebecca Tabor
State Water Resources Control Board, Division of Drinking Water
364 Knollcrest Drive, Suite 101
Redding, CA 96002

RE: Recommendation to Request Waiver from the California Waterworks Standards – Water Main Separation Requirements for Historic Olivehurst Pipeline Replacement Project.

Dear Rebecca Tabor:

This letter is to recommend that the Olivehurst Public Utility District request that the Division of Drinking Water consider granting a waiver from the California Waterworks Standards (Title 22, Chapter 16, Section 64572) regarding separation requirements for water mains from non-potable fluid pipelines. The district has identified the Western Avenue Service Area as requiring replacement of undersized and degrading steel pipelines to provide a more reliable and safer drinking water supply for both consumption and fire safety.

The project includes approximately 7,300 feet of water main pipeline replacement and is in the final stages of design and permitting. The project is bounded by the railroad to the West, 7th Avenue to the North, Fleming Way to the East, and 11th Avenue to the South.

The purpose of this letter is to request a waiver from the California Waterworks Standard relating to separation requirements of new water mains from existing non-potable fluid pipelines. As well as a blanket waiver for instances where the new installation of the water mains crossing: a) sewer service laterals, and b) drainage inlet laterals throughout the defined project area. As part of the contractual agreement, the water main shall be installed per detail 1-D1 in attachment B.

As shown on the plans (Attachment B), the new potable water mains will be installed at their ultimate location. There is a total of 9 crossings identified and a total of 1 sections of new water main paralleling existing non-potable fluid pipelines. The proposed crossings reflect a minimum of 12-inches of clearance between the water and storm drain or sewer main and will be constructed with 18-foot, joint-free, full length, Class 305 (DR14) C900 PVC centered on the crossings where possible. All joints within 8-feet on either side of the crossing will be restrained. Sections of the new water main paralleling existing storm drain, or sewer mains will be constructed with Class 305 (DR14) C900 PVC and will be restrained for the entire length where minimum horizontal separation does not comply with Section 64572 of the California Code of Regulations (CCR). These requested variances are shown on the plans and annotated below:

RE: Recommendation to Request Waiver from the California Waterworks Standards – Water Main Separation Requirements for Historic Olivehurst Pipeline Replacement Project.

May 28, 2024

Page 2 of 4

1. Sheet C16 8TH AVENUE at STA 13+80: 8" CL 305 C900 PVC restrained water main crossing more than 12" Below 15" Storm Drain Pipe
2. Sheet C17 8TH AVENUE at STA 23+19: 8" CL 305 C900 PVC restrained water main crossing more than 12" Below 36" Storm Drain Pipe
3. Sheet C18 9TH AVENUE at STA 1+38: 8" CL 305 C900 PVC restrained water main crossing more than 12" Below 36" Storm Drain Pipe
4. Sheet C18 9TH AVENUE at STA 1+64: 8" CL 305 C900 PVC restrained water main crossing more than 12" Below 24" Storm Drain Pipe
5. Sheet C20 10TH AVENUE at STA 1+06: 8" CL 305 C900 PVC restrained water main crossing more than 12" Below 24" Storm Drain Pipe
6. Sheet C20 10TH AVENUE at STA 1+11: 8" CL 305 C900 PVC restrained water main crossing more than 12" Below 8" Sanitary Sewer Pipe
7. Sheet C20 10TH AVENUE at STA 1+22: 8" CL 305 C900 PVC restrained water main crossing more than 12" Below 24" Storm Drain Pipe
8. Sheet C22 WESTERN AVENUE at STA 1+13: 8" CL 305 C900 PVC restrained water main crossing more than 12" Below 8" Storm Drain Pipe
9. Sheet C22 WESTERN AVENUE at STA 4+43: 8" CL 305 C900 PVC restrained water main crossing more than 12" Below 48" Storm Drain Pipe
10. Sheet C23 WESTERN AVENUE at STA 13+96: 8" CL 305 C900 PVC restrained water main crossing more than 12" Below 12" Storm Drain Pipe
11. Sheet C23 WESTERN AVENUE at STA 14+05: 8" CL 305 C900 PVC restrained water main crossing more than 12" Below 8" Sanitary Sewer Pipe
12. Sheet C23 WESTERN AVENUE at STA 14+14: 8" CL 305 C900 PVC restrained water main crossing more than 12" Below 24" Storm Drain Pipe
13. Sheet C24 WESTERN AVENUE at STA 20+60: 8" CL 305 C900 PVC restrained water main crossing more than 12" Below 24" Storm Drain Pipe
14. Sheet C24 WESTERN AVENUE at STA 20+79: 8" CL 305 C900 PVC restrained water main crossing more than 12" Below 30" Storm Drain Pipe
15. Sheet C24 WESTERN AVENUE at STA 20+85: 8" CL 305 C900 PVC restrained water main crossing more than 12" Below 8" Sanitary Sewer Pipe
16. Sheet C24 WESTERN AVENUE at STA 20+97: 8" CL 305 C900 PVC restrained water main crossing more than 12" Below 24" Storm Drain Pipe
17. Sheet C17 8TH AVENUE from STA 15+90 to STA 17+75: 8" CL 305 C900 PVC restrained water main paralleling more than 5' offset from 6" Sanitary Sewer Pipe
18. Sheet C17 8TH AVENUE from STA 17+86 to STA 22+86: 8" CL 305 C900 PVC restrained water main paralleling more than 5' offset from 6" Sanitary Sewer Pipe

RE: Recommendation to Request Waiver from the California Waterworks Standards – Water Main Separation Requirements for Historic Olivehurst Pipeline Replacement Project.

May 28, 2024

Page 3 of 4

In concurrence with the Engineer's professional opinion (Attachment A), the Olivehurst Public Utility District agrees that the proposed construction methods will provide a safe installation with virtually no chance of cross-contamination of potable water supply for the project.

If you have any questions, please feel free to contact me at (530)-743-8132, or by email at sboyal@opud.org

Sincerely,

Swarnjit Boyal
Public Works Engineer
Olivehurst Public Utility District

RE: Recommendation to Request Waiver from the California Waterworks Standards – Water Main Separation Requirements for Historic Olivehurst Pipeline Replacement Project.

May 28, 2024

Page 4 of 4

Attachments:

- Attachment A Engineer's Variance Recommendation Letter to Olivehurst Public Utility District for the Historic Olivehurst Pipeline Replacement Project
- Attachment B Historic Olivehurst Pipeline Replacement Project Plans annotated to highlight the areas of interest for DDW
- Attachment C New Water Main Crossing Existing Non-Potable Fluid Pipeline Table
- Attachment D New Water Main Parallel to Existing Non-Potable Fluid Pipeline Table

ATTACHMENT A



DOMENICHELLI AND ASSOCIATES, INC. CIVIL ENGINEERING

Swarnjit Boyal
Public Works Engineer
Olivehurst Public Utility District
PO Box 670
Olivehurst CA 95961

May 28, 2024

RE: Recommendation to Request Waiver from California Waterworks Standards for Water Main Separation Requirements for the Historic Olivehurst Pipeline Replacement Project – Phase 1.

Dear Mr. Boyal,

This letter is recommendation that the Olivehurst Public Utility District (Agency) proceed with requesting a separation waiver from the Division of Drinking Water (DDW) from the California Waterworks Standards (Title 22, Chapter 16, Section 64572) regarding separation requirements for water mains from non-potable fluid pipelines regarding the Historic Olivehurst Pipeline Replacement Project – Phase 1.

Water main installations are planned to occur in the following streets as shown on the plans (Attachment B): Western Avenue, 8th Avenue, 9th Avenue and 10th Avenue. Attachment C list the locations where the new water main crosses under a non-potable water pipeline. Attachment D lists the locations where the planned water main has less than 10-feet of parallel separation.

The following construction methods for vertical and horizontal separation includes:

1. The proposed crossings reflect a minimum of 12-inches of vertical clearance between the water main and storm drain or sewer mains. The crossing will be constructed with 18-foot joint-free, full-length, Class 305 (DR14) C900 PVC, joint-free, and on the crossings where possible. All joints within 9-feet on either side of the crossing will be mechanically restrained.
2. Sections of the water main that parallel existing storm drain or sewer main with less than 10-foot horizontal separation will be constructed with Class 305 (DR14) C900 PVC and will be mechanically restrained for the entire length where minimum horizontal separation does not comply with Section 64572 of the CCR.

My professional opinion is that the proposed pipe alignments and restraint methods satisfy the DDW requirements and will provide a safe installation with minimal risk of cross-contamination to the potable water supply. If you have any questions, please feel free to contact me at (916) 933-1997, or by email at: joed@daengineering.net.

Regards,

Joe Domenicelli, PE C68171



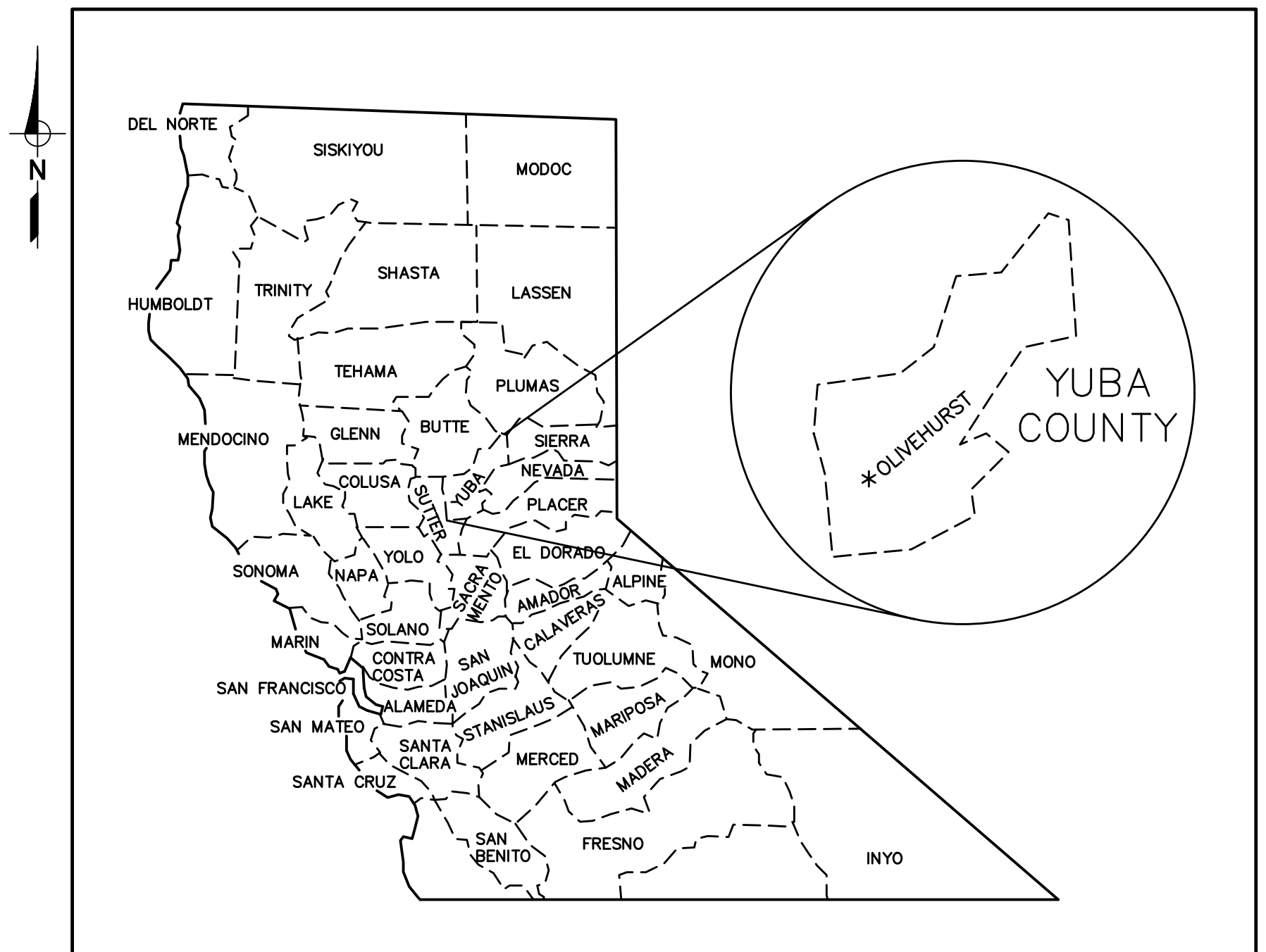
OLIVEHURST PUBLIC UTILITY DISTRICT

OLIVEHURST, YUBA COUNTY, CALIFORNIA HISTORIC OLIVEHURST PIPELINE REPLACEMENT PROJECT

PHASE 1 MAY, 2024



PROJECT LOCATION MAP
NO SCALE



VICINITY MAP
NO SCALE

INDEX OF DRAWINGS

DWG	SHEET	TITLE
G1	1	TITLE SHEET
G2	2	GENERAL NOTES
G3	3	ABBREVIATIONS & SYMBOLS
G4	4	OVERALL KEY MAP
G6	5	PHASE 1 KEY MAP
G8	6	METER SHEET
G9	7	METER SHEET
C15	8	8TH AVE. ALIGNMENT - STA. 1+00 TO STA. 8+50
C16	9	8TH AVE. ALIGNMENT - STA. 8+50 TO STA. 16+00
C17	10	8TH AVE. ALIGNMENT - STA. 16+00 TO STA. 24+00
C18	11	9TH AVE. ALIGNMENT - STA. 1+00 TO STA. 8+50
C19	12	9TH AVE. ALIGNMENT - STA. 8+50 TO STA. 14+20
C20	13	10TH AVE. ALIGNMENT - STA. 1+00 TO STA. 8+50
C21	14	10TH AVE. ALIGNMENT - STA. 8+50 TO STA. 14+25
C22	15	WESTERN AVE. ALIGNMENT - STA. 1+00 TO STA. 8+50
C23	16	WESTERN AVE. ALIGNMENT - STA. 8+50 TO STA. 15+00
C24	17	WESTERN AVE. ALIGNMENT - STA. 15+00 TA STA. 21+25
C25	18	8TH AVE PRIVATE ROAD ALIGNMENT - STA: 1+00 TO 5+65
D1	19	STANDARD DETAILS 1
D2	20	STANDARD DETAILS 2
D3	21	STANDARD DETAILS 3
D4	22	METER RELOCATION DETAILS
T1	23	TIE-IN DETAILS 1
T2	24	TIE-IN DETAILS 2

OLIVEHURST PUBLIC UTILITY DISTRICT FACILITIES

OLIVEHURST PUBLIC UTILITY DISTRICT FACILITIES SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE DISTRICT'S LATEST REVISED STANDARDS. THE CONTRACTOR SHALL PROVIDE TWO WORKING DAYS NOTICE TO THE OLIVEHURST PUBLIC UTILITY DISTRICT INSPECTOR (530-823-4885) PRIOR TO BEGINNING WORK ON WATER FACILITIES AND BY 7:30 A.M. EACH DAY WORK ON THE WATER FACILITIES OCCURS. THE DISTRICT'S APPROVAL OF THESE PLANS IS FOR WATER FACILITIES ONLY. UNDISCOVERED ERRORS AND OMISSIONS SHALL BE CORRECTED BY OTHERS. CONFLICTS WITH OTHER IMPROVEMENTS SHALL BE THE RESPONSIBILITY OF OTHERS.

OLIVEHURST PUBLIC UTILITY DISTRICT

AGENCY APPROVAL: DATE:

CALL BEFORE YOU DIG

THE CONTRACTOR SHALL CALL "UNDERGROUND SERVICE ALERT" (USA) AT 800-227-2600 AT LEAST 2 WORKING DAYS PRIOR TO PERFORMING ANY EXCAVATION

UTILITY CONTACT INFORMATION		
UTILITY	REPRESENTATIVE	PHONE
TELEPHONE	AT&T - ANNA SANTOS	(916)-484-2416
SEWER	OPUD - GREG AXLINE	(530)-743-4657
DRAINAGE	YUBA COUNTY PUBLIC WORKS - STEVAN M. CAMPPELL	(530)-749-5420
WATER	OPUD - VIRGIL WILLARD	(530)-743-4657
TELE/COMM	AT&T - ANNA SANTOS	(916)-484-2416
ELEC & GAS	PG&E -	(877)-743-7782
U.S.A.	CALL BEFORE YOU DIG	(800)-227-2600

Z:\IOPUD-002 HISTORIC WATER INFRASTRUCTURE\DWG - PHASE 1\DWG\IOPUD02-GS.DWG 20240511.105449

GENERAL NOTES

- GENERAL:
 - ALL WORK SHALL CONFORM TO THE APPLICABLE LOCAL, STATE AND FEDERAL CODES AND SPECIFICATIONS INCLUDING OSHA.
 - EXCAVATIONS SHALL BE CARRIED OUT IN THE DRY AND PROVISIONS SHALL BE MADE TO PREVENT THE BOTTOM OF EXCAVATION FROM FLOODING AT ALL TIMES.
 - IT IS THE CONTRACTOR'S RESPONSIBILITY TO ASSURE JOB SAFETY. LOCAL, STATE AND FEDERAL, INCLUDING OSHA LAWS AND RULES SHALL BE ENFORCED BY THE CONTRACTOR AT ALL TIMES.
 - THE CONTRACTOR SHALL NOTIFY UNDERGROUND SERVICE ALERT (USA), (800) 277-2600, 48 HOURS PRIOR TO ANY EXCAVATION. THE CONTRACTOR SHALL ALSO NOTIFY ALL OTHER UTILITIES, NOT IN USA, 48 HOURS PRIOR TO ANY EXCAVATION.
 - ALL STRUCTURES, FACILITIES, CONCRETE CURB, GUTTER, SIDEWALK AND PAVEMENT DAMAGED BY CONTRACTOR SHALL BE REPAIRED OR REPLACED AT CONTRACTOR'S EXPENSE.
- PUBLIC SAFETY AND TRAFFIC CONTROL PLAN SHALL BE PROVIDED IN ACCORDANCE WITH THE COUNTY ENCROACHMENT PERMIT AND SPECIFICATIONS. SAFE VEHICULAR AND OPERATION STAFF ACCESS SHALL BE PROVIDED AT ALL TIMES DURING CONSTRUCTION.
- EROSION CONTROL MEASURES SHALL BE IN ACCORDANCE WITH THE CONTRACTOR PREPARED WATER POLLUTION CONTROL PLAN.
- THE TYPES LOCATIONS, SIZES, AND/OR DEPTHS OF EXISTING UNDERGROUND UTILITIES AS SHOWN ON THESE PLANS WERE OBTAINED FROM SOURCES OF VARYING RELIABILITY. THE CONTRACTOR IS CAUTIONED THAT ONLY ACTUAL EXCAVATION WILL REVEAL THE TYPES, EXTENT, SIZES, LOCATIONS, AND DEPTHS OF SUCH UNDERGROUND UTILITIES. A REASONABLE EFFORT HAS BEEN MADE TO LOCATE AND DELINEATE ALL KNOWN UNDERGROUND UTILITIES. HOWEVER, THE ENGINEER AND THE DISTRICT CAN ASSUME NO RESPONSIBILITY FOR THE COMPLETENESS OR ACCURACY OF THE DELINEATION OF SUCH UNDERGROUND UTILITIES NOR FOR THE EXISTENCE OF OTHER BURIED OBJECTS OR UTILITIES WHICH MAY BE ENCOUNTERED, BUT WHICH ARE NOT SHOWN ON THESE DRAWINGS. THE CONTRACTOR IS HEREBY NOTIFIED THAT, PRIOR TO COMMENCING CONSTRUCTION, HE IS RESPONSIBLE FOR CONTACTING THE UTILITY COMPANIES INVOLVED AND REQUESTING A VISUAL VERIFICATION OF THE LOCATIONS OF THEIR UNDERGROUND FACILITIES SHOWN ON THESE PLANS A MINIMUM OF TWO WEEKS PRIOR TO WATER MAIN EXCAVATION. CONTRACTOR SHALL POTHOLE TO VERIFY ALL UTILITIES LOCATIONS FOR GAS, SEWER, WATER, STORM DRAIN, ELECTRICAL AND COMMUNICATIONS ALIGNMENTS INVOLVING SERVICES AND REPORT TO THE ENGINEER ANY POSSIBLE CONFLICTS AND SHALL PAINT IN WHITE THE LIMITS OF THE PIPELINE TRENCH. ALL POTHOLE DATA SHALL BE PROVIDED TO THE ENGINEER A MINIMUM OF TWO WEEKS PRIOR TO PIPELINE EXCAVATION OR SAWCUTTING.
- ALL CONSTRUCTION SHALL CONFORM TO THESE PLANS AND THE LATEST EDITION OF OLIVEHURST PUBLIC UTILITY DISTRICT (OPUD) STANDARD CONSTRUCTION SPECIFICATIONS. CONTRACTOR IS RESPONSIBLE FOR OBTAINING CORRECT PLANS AND SPECIFICATIONS.
- COMPLIANCE WITH THE COUNTY OF YUBA NOISE RESTRICTIONS IS REQUIRED. HOURS OF CONSTRUCTION OPERATION SHALL BE LIMITED FROM 7:30 A.M. TO 4:30 P.M. WEEKDAYS. NO WORK SHALL BE ALLOWED ON SATURDAY, SUNDAY OR DISTRICT HOLIDAYS UNLESS APPROVED BY OPUD. CONSTRUCTION EQUIPMENT SHALL BE MUFFLED AND SHROUDED TO MINIMIZE NOISE LEVELS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
- NO REFUELING, LUBRICATION, OR MAINTENANCE OF CONSTRUCTION VEHICLES SHALL BE DONE ANYWHERE ON THE SITE EXCEPT WITHIN APPROVED OR CONTRACTOR OBTAINED CONSTRUCTION STAGING AREAS.
- ALL EXCAVATION LOCATED BEHIND SIDEWALKS (PRIVATE PROPERTY) TO BE PERFORMED BY HAND DIGGING. HEAVY EQUIPMENT NOT ALLOWED ON PRIVATE PROPERTY, SIDEWALKS, OR DRIVEWAYS.
- FINAL ABANDONMENT SHALL BE AS SHOWN ON ABANDONMENT PLANS AND DETAILS.
- ALL BRASS FITTINGS SHALL MEET FEDERAL AND STATE REQUIREMENTS FOR NO LEAD.
- PROVIDE A MINIMUM HORIZONTAL SEPARATION OF 10 FEET BETWEEN WATER AND SEWER LINES PER STANDARD DETAIL 2/D1.
- PROVIDE A MINIMUM HORIZONTAL SEPARATION OF 4 FEET BETWEEN WATER AND STORM DRAIN LINES.
- PROVIDE A MINIMUM OF 12 INCHES CLEARANCE AT LATERAL CROSSINGS WITH WATER OVER ALL WET UTILITIES WHENEVER POSSIBLE.
- ALL WET UTILITIES CROSSING WATER FACILITIES MUST NOT CROSS AT AN ANGLE GREATER THAN 45 DEGREES FROM WHAT WOULD BE A PERPENDICULAR CROSSING AND MUST HAVE A FULL STICK OF PIPE CENTERED ON THE CROSSING.
- PIPE JOINTS SHALL BE MECHANICALLY RESTRAINED WHERE SHOWN ON PLANS.
- PIPE AND APPURTENANCES TO BE 54-INCHS MINIMUM BELOW FINAL GRADE WHEN LOCATED WITHIN COUNTY R.O.W.

OPUD WATER FACILITIES NOTES

- IMPROVEMENT STANDARDS AND STANDARD DETAILS FOR OLIVEHURST PUBLIC UTILITY DISTRICT (OPUD) DATED MAY 2021 ARE CONSIDERED A PART OF THESE PLANS.
- ALL UTILITIES CLEARANCES (HORIZONTAL AND VERTICAL) SHALL MEET OPUD STANDARDS
- COORDINATE WITH PG&E FOR LOCATIONS OF TRANSFORMER/S AND CONFIRM REQUIRED MINIMUM DISTANCES AWAY FROM WET UTILITIES PER PG&E GREENBOOK AND OPUD GUIDELINES. PLEASE NOTIFY ENGINEER & PG&E OF ANY DISCREPANCIES.
- A MINIMUM CLEARANCE OF 18" FOR UTILITY VS ROAD TILL SECTION. ANY DISCREPANCIES TO FACILITIES WITHIN SECTION, PLEASE NOTIFY OPUD AND COUNTY INSPECTORS.
- TO SCHEDULE A PUBLIC WORKS INSPECTION, CONTACT THE FOLLOWING TWO WORK DAY PRIOR TO INSPECTION, EXCLUDING WEEKENDS & HOLIDAYS.

OLIVEHURST PUBLIC UTILITY DISTRICT INSPECTOR PHONE:

DAN NIELSEN – 530-491-8675
 JON PHILLIPS – 530-790-8064

COUNTY OF YUBA ENCROACHMENT PERMIT CONDITIONS:

PAVEMENT RESTORATION – YUBA COUNTY DEPARTMENT OF PUBLIC WORKS UTILITY TRENCH DETAIL 300 (2/D2).

- PAVEMENT RESTORATION SHALL INCLUDE KEY GRIND BEYOND SAW-CUT TO THE GREATER OF HALF THE DEPTH OF EXISTING HMA OR A MINIMUM OF 2" AND REPLACEMENT.
- PAVEMENT RESTORATION SHALL BE A TYPICAL T-TRENCH RESTORATION AS SHOWN ON DETAIL 300 (2/D2).

TRAFFIC CONTROL PLAN

- A TRAFFIC CONTROL PLAN SHALL BE PREPARED AND PROVIDED BY THE CONTRACTOR FOR APPROVAL PRIOR TO ANY WORK PER THE COUNTY OF YUBA ENCROACHMENT PERMIT GENERAL CONDITIONS

GENERAL CONDITIONS

- SEE SPECIFICATIONS FOR FULL LIST OF YUBA COUNTY ENCROACHMENT PERMIT GENERAL CONDITIONS.
- REFER TO YUBA COUNTY DEPARTMENT OF PUBLIC WORKS STANDARD PLANS & SPECIFICATIONS FOR GENERAL REQUIREMENTS NOT COVERED IN THE CONTRACT DOCUMENTS.

PROJECT NOTES:

- INSTALL NEW SERVICE LINE AND RECONNECT TO EXISTING METER BOX PER OPUD STANDARD DETAILS. WHERE METER IS LOCATED WITHIN 18' OF THE R.O.W. CENTERLINE (NOT ROAD CENTERLINE) METER IS TO BE RELOCATED PER DETAIL SHEET D4. CONTRACTOR SHALL REUSE ALL EXISTING METER BOXES AND COMPONENTS UNLESS DETERMINED TO BE INSUFFICIENT FOR REUSE BY DISTRICT INSPECTOR. PROVIDE ALL NECESSARY PIPING, FITTINGS, AND APPURTENANCES PER OPUD STANDARD DETAIL. SEE MEASUREMENT AND PAYMENT FOR ESTIMATED QUANTITIES.
- NO NEW WATER PIPE LINES SHALL BE LOCATED CLOSER THAN 1 FOOT, HORIZONTALLY OR VERTICALLY FROM ANY EXISTING UTILITIES, UNLESS SHOWN OTHERWISE ON THE PLANS.
- A MINIMUM OF 2 TIE-INS TO THE EXISTING SYSTEM ARE REQUIRED FROM EXISTING MAIN TO NEW WATER MAIN PRIOR TO ANY SERVICE CROSS OVERS OR FIRE HYDRANT CROSS OVERS. EXISTING WATERMAIN TO REMAIN IN SERVICE UNTIL ALL SERVICE LINES ARE IN SERVICE FROM THE NEW WATERMAIN.
- DISTRIBUTION PIPE AND CONNECTING MAINS SHALL BE PVC C900 DR-18 PIPE IN ACCORDANCE WITH OPUD IMPROVEMENT STANDARDS, TECHNICAL PROVISIONS, AND THE DRAWINGS. ALL MECHANICAL JOINTS SHALL BE OF THE RESTRAINED TYPE USING EBAA IRON, OR STAR, OR EQUAL. TEST PRESSURE SHALL BE 150 PSI MINIMUM.
- RADIUSING OF PIPE ALIGNMENT SHALL BE ACCOMPLISHED BY BENDING, DEFLECTION AT BELL AND SPIGOT JOINTS IS NOT ALLOWED. MINIMUM BEND RADIUS SHALL BE NO LESS THAN 300' FOR 8" DIAMETER PIPE. DEFLECTION AT MECHANICAL JOINTS SHALL BE ALLOWED PER OPUD IMPROVEMENT STANDARDS. DIP MJ LONG SLEEVES WITH APPROVED RESTRAINTS MAY BE USED TO ACHIEVE GREATER DEFLECTIONS.
- ALL VALVES, PIPE FITTINGS, RESTRAINTS, AND APPURTENANCES SHALL BE MINIMUM PRESSURE CLASS 235 RATING.
- ABANDON EXISTING PIPELINE BY CUTTING AND CAPPING ENDS AS SHOWN ON PLANS PER OPUD STANDARDS. VALVES SHALL BE ABANDONED BY REMOVING OPERATING NUT, VALVE BOX, AND RISER TO BE CUT AT LEAST 24" BELOW GRADE AND BACKFILLED PER OPUD STANDARDS WITH SAND COMPACTED TO 90% IN PAVED AND HARDSCAPE AREAS TO SUBGRADE, OR FILLED WITH NATIVE AND TOPSOIL IN UNPAVED OR NON HARDSCAPED AREAS TO FINISHED GRADE.
- PROJECT DISTURBANCE HAS BEEN CALCULATED TO BE LESS THAN 1 ACRE AND THEREFORE DOES NOT REQUIRE COVERAGE UNDER THE GENERAL PERMIT FOR DISCHARGES OF STORMWATER ASSOCIATED WITH CONSTRUCTION ACTIVITY (CONSTRUCTION GENERAL PERMIT 2009-009-DWQ). IN THE EVENT A STAGING/STOCKPILE AREA EXCEEDS THIS REQUIREMENT THE CONTRACTOR IS RESPONSIBLE FOR COMPLYING WITH THE CONSTRUCTION GENERAL PERMIT INCLUDING SWPPP PREPARATION, COMPLIANCE REPORTING AND ALL ASSOCIATED PERMITTING FEES INCLUDING ALL OPUD STAFF TIME REQUIRED. CONTRACTOR SHALL PROVIDE OPUD WITH A DETAILED CALCULATION SHOWING COMPLIANCE WITH THE 1 ACRE PRIOR TO FINAL STAGING AREA SELECTION.
- CONTRACTOR SHALL POTHOLE UTILITY LINES TO VERIFY LOCATION AND DEPTH. NEW WATER MAIN SHALL BE INSTALLED OVER THE TOP OF EX SEWERS AND STORM DRAIN IF POSSIBLE. WATER MAIN CROSSING SHALL COMPLY WITH SWRCB TITLE 22 STORM DRAIN AND SEWER SEPARATION REQUIREMENTS, ANY DEVIATION MUST BE APPROVED BY SWRCB AND OPUD.
- BOTH THE EXISTING AND THE NEW WATER FACILITIES SHALL BE KEPT ACTIVE UNTIL ALL SERVICES ARE CROSSED OVER TO THE NEW FACILITIES AND THE SYSTEM IS ACCEPTED BY OPUD. CONTRACTOR IS RESPONSIBLE FOR ALL MATERIALS AND WORK ASSOCIATED WITH TEMPORARY FACILITIES NECESSARY PRIOR TO FINAL ABANDONMENT OF THE EXISTING FACILITIES.
- CONTRACTOR SHALL RETURN ALL REMOVED VALVES, METERS, AND TEST STATIONS TO THE DISTRICT UNLESS OTHERWISE NOTED ON THE PLANS. THE REMAINING MATERIAL AND APPURTENANCES FROM THE PROJECT WILL BE DISPOSED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE DISTRICT.

SURVEY NOTES

- TOPOGRAPHIC SURVEY PREPARED BY MHM, INC.
- HORIZONTAL AND VERTICAL CONTROL STATEMENT

THE COORDINATES AND BEARINGS SHOWN HEREON REFER TO NGS STATION "POWERLINE" AND NGS STATION "DL9195". BEARING BEING N84°54'02"E 5984.09' GRID DISTANCE. MEASURED BY REAL TIME KINETIC (RTK) GLOBAL POSITIONING SYSTEM (GPS) TECHNOLOGY BASED UPON TOPCON NETWORK SOLUTION USING THE 2011 EPOCH REFERENCING THE NORTH AMERICAN DATUM OF 1983 (NAD83), CALIFORNIA ZONE 2.

THE CONTROL POINT ELEVATIONS REFERENCED NORTH AMERICAN VERTICAL DATUM OF 1988 (NAV88) AND ORIGINATED FROM FOUND AND MEASURED MONUMENTS KS0935 "M743" ASSIGNED THE ELEVATION 61.63 FEET NAV88 AND DL9195 "POWERLINE" ASSIGNED THE ELEVATION 64.84 FEET NAV88 AS DETERMINED BY THE NATIONAL GEODETIC SURVEY.

- THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL EXISTING SURVEY MONUMENTS WITH IN THE WORK ZONE AND REPLACEMENT OF ALL SURVEY MONUMENTS DAMAGED OR DESTROYED BY CONSTRUCTION RELATED ACTIVITIES. THE CONTRACTOR SHALL BE RESPONSIBLE TO ARRANGE AND PAY FOR A DILIGENT AND THOROUGH SEARCH FOR SURVEY MONUMENTS, PERFORMED BY OR UNDER THE DIRECTIONS OF A CALIFORNIA LICENSED LAND SURVEYOR PRIOR TO THE BEGINNING OF CONSTRUCTION OR MAINTENANCE ACTIVITIES THAT COULD DISTURB OR DESTROY SURVEY MONUMENTS.

DDW WAIVER NOTES

- CONTRACTOR IS MADE AWARE THAT THE PROJECT WILL REQUIRE A WAIVER FOR MULTIPLE LOCATIONS FROM THE STATE WATER RESOURCES CONTROL BOARD DIVISION OF DRINKING WATER (DDW). THE DISTRICT HAS APPLIED FOR THE WAIVER AND EXPECTS TO SHARE IT WITH CONTRACTORS PRIOR TO BIDDING. CONTRACTOR SHALL REVIEW AND COMPLY WITH THE WAIVER AND ALL ASSOCIATED REQUIREMENTS OF THE WAIVER AND OTHER PROVISIONS INCLUDED IN THE PLANS AND SPECIFICATIONS.
- CONTRACTOR IS RESPONSIBLE TO PROVIDE ALL POTHOLING NECESSARY TO CONFIRM THE HORIZONTAL AND VERTICAL DISTANCES BETWEEN THE NEW WATER PIPELINE AND THE EXISTING STORM DRAIN AND SEWER FACILITIES. POTHOLING DATA COLLECTED BY CONTRACTOR MAY IDENTIFY ADDITIONAL LOCATIONS THAT REQUIRE DDW WAIVER BY NOT MEETING MINIMUM CLEARANCES. ANY DISCREPANCIES BETWEEN CLEARANCES SHOWN ON PLANS AND THOSE IDENTIFIED IN THE FIELD BY THE CONTRACTOR MUST BE IMMEDIATELY REPORTED TO THE ENGINEER. THESE LOCATIONS WILL BE EVALUATED AND MAY REQUIRE ADDITIONAL ENGINEERING DESIGN BEFORE CONSTRUCTION IS AUTHORIZED.
- CONTRACTOR IS RESPONSIBLE FOR DOCUMENTING CONSTRUCTION OF ALL LOCATIONS REQUIRING DDW WAIVER (INCLUDING BOTH PREVIOUSLY IDENTIFIED, AND THOSE IDENTIFIED DURING POTHOLING) INCLUDE RECORDING UTILITY CLEARANCE MEASUREMENTS (HORIZONTAL AND VERTICAL) AND TAKING PHOTOGRAPHS DURING CONSTRUCTION. CONTRACTOR MUST NOT BURY ANY DDW WAIVER LOCATION WITHOUT DISTRICT INSPECTION AND APPROVAL.

20240511.105449 Z:\OPUD-002 HISTORIC WATER INFRASTRUCTURE\DWG - PHASE I\DWG\OPUD02-GS.DWG

REV	DATE	BY	DESCRIPTION

SCALE: AS NOTED

WARNING
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE.

DESIGNED MATT DOMENICHELLI
 DRAWN MATT DOMENICHELLI
 CHECKED JOE DOMENICHELLI

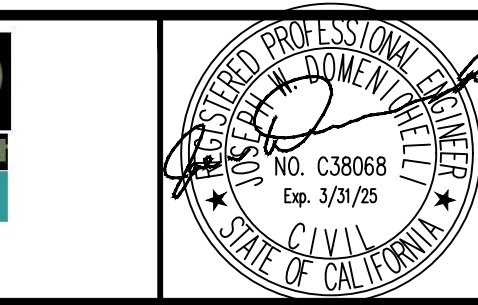
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HISTORIC OLIVEHURST STEEL MAIN REPLACEMENT PROJECT

GENERAL NOTES

DWG	G2
SHEET	2
	OF 24

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EXISTING

- DOMESTIC PIPELINE
- GATE VALVE
- BUTTERFLY VALVE
- SERVICE WATER LINE WITH METER BOX
- AIR/VACUUM RELEASE VALVE
- BACKFLOW PREVENTION DEVICE
- FIRE HYDRANT
- EXISTING WATER LINE
- EXISTING SEWER LINE
- EXISTING STORM DRAIN LINE
- EXISTING GAS
- EXISTING CABLE
- EXISTING ELECTRIC
- EXISTING AT&T
- PUBLIC UTILITY EASEMENT
- RIGHT OF WAY
- EXISTING SEWER CLEANOUT
- EXISTING SEWER MANHOLE
- EXISTING IRRIGATION
- EXISTING METER BOX, SERVICE TO BE RECONNECTED
- EXISTING SURVEY MONUMENT
- EXISTING TEMPORARY BENCHMARK
- EXISTING ELECTRICAL BOX
- EXISTING ELECTRICAL BOX
- EXISTING TRAFFIC SIGNAL BOX
- EXISTING TRANSFORMER
- EXISTING TELEPHONE BOX
- EXISTING TELEVISION BOX
- EXISTING POLE
- EXISTING SIGN
- EXISTING MAILBOX

EXISTING

- EXISTING STORM DRAIN INLET
- EXISTING TRAFFIC DETECTOR
- EXISTING SANITARY SEWER MANHOLE
- EXISTING WATER BOX
- EXISTING ELECTRIC MANHOLE

PROPOSED

- DOMESTIC PIPELINE
- GATE VALVE
- BUTTERFLY VALVE
- SERVICE WATER LINE WITH METER BOX
- AIR/VACUUM RELEASE VALVE
- BLOWOFF VALVE
- BACKFLOW PREVENTION DEVICE
- FIRE HYDRANT
- WATER SAMPLING STATION
- REDUCER
- CAP AND ABANDON
- VALVE TO BE ABANDONED PER SPECIFICATION
- PIPE TO BE ABANDONED PER SPECIFICATION
- A.T.S. ANODE TEST STATION

ABBREVIATIONS

- AB - AGGREGATE BASE
- ABAN - ABANDON
- AC - ASPHALT CONCRETE OR ASBESTOS CEMENT PIPE
- ARV - AIR VACUUM RELEASE VALVE
- A.T.S. - ANODE TEST STATION
- BF, BFV - BUTTERFLY VALVE
- BFP - BACKFLOW PREVENTER
- CE - EXISTING METER IN CONCRETE WALKWAY, METER TO REMAIN IN SAME LOCATION
- C&G - CURB AND GUTTER
- CL - CENTERLINE / CLASS
- CMP - CORRUGATED METAL PIPE
- CONC - CONCENTRIC
- CR - CROSSING
- DCDA - DOUBLE CHECK DETECTOR CHECK VALVE ASSEMBLY
- DE - EXISTING METER IN DRIVEWAY, METER TO REMAIN IN SAME LOCATION
- DI - DRAIN INLET
- DIP - DUCTILE IRON PIPE
- DR - EXISTING METER IN DRIVEWAY, RELOCATE TO LANDSCAPE
- DWG - DRAWING
- EL - ELEVATION
- ELEC - ELECTRIC, ELECTRICIAN
- EOP - EDGE OF PAVEMENT
- (E)/EXIST/EX - EXISTING
- FH - FIRE HYDRANT
- FL - FLOWLINE
- FLG - FLANGE
- F.V. - FIELD VERIFY
- GB - GRADE BREAK
- GV - GATE VALVE
- H - HORIZONTAL
- H.A.S. - HORIZONTAL ALIGNMENT STATIONING
- HDC - HIGH DEFLECTION COUPLING
- IE - INVERT ELEVATION
- INV - INVERT
- L - LENGTH
- LS - LANDSCAPE METER BOX LOCATION
- M - METER
- MAX - MAXIMUM
- MIN - MINIMUM
- MJ - MECHANICAL JOINT
- NIC - NOT IN CONTRACT
- NO. - NUMBER
- (N) - NEW
- OPUD - OLIVEHURST PUBLIC UTILITY DISTRICT
- PC - PIPELINE CENTERLINE
- PE - PLAIN END
- PL - PROPERTY LINE
- PP - POWER POLE
- R - RADIUS
- RIM - RIM ELEVATION
- SD - STORM DRAIN
- SS - SANITARY SEWER
- SDMH - STORM DRAIN MANHOLE
- SSMH - SANITARY SEWER MANHOLE
- SW - SIDEWALK
- TC - TOP OF CURB
- TYP - TYPICAL
- UE - UNDERGROUND ELECTRICAL
- UG - UNDERGROUND GAS
- UT - UNDERGROUND TELEPHONE
- V - VERTICAL
- W - WATER MAIN
- W/- - WITH
- WS - WATER SERVICE
- WSC - WELDED STEEL CONDUIT

REV	DATE	BY	DESCRIPTION

SCALE: AS NOTED

WARNING
0 1/2 1
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DOMENICHELLI & ASSOCIATES

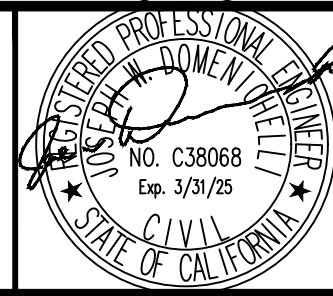
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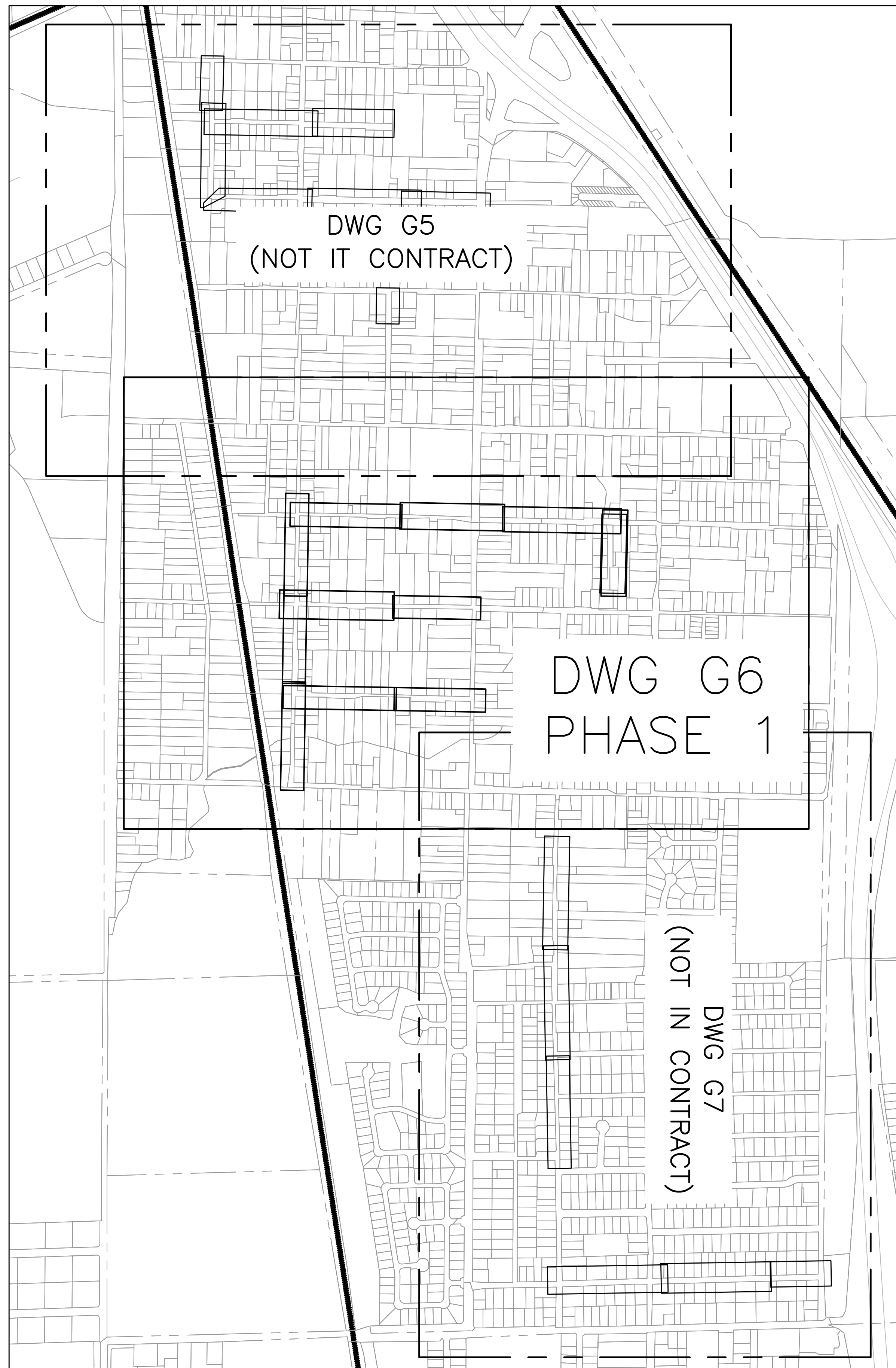
HISTORIC OLIVEHURST STEEL MAIN REPLACEMENT PROJECT

ABBREVIATIONS & SYMBOLS

DWG **G3**
SHEET **3**
OF 24

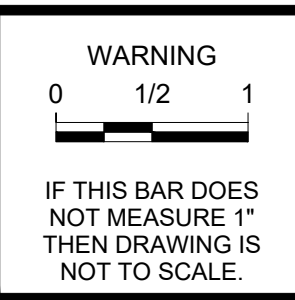
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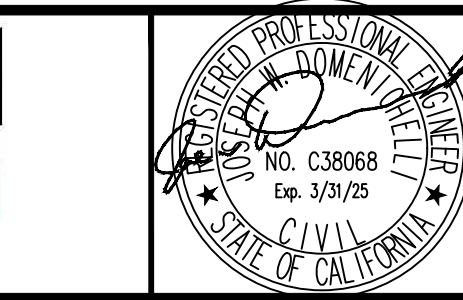


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HISTORIC OLIVEHURST STEEL MAIN REPLACEMENT PROJECT
OVERALL KEY MAP

DWG
G4
 SHEET
4
 OF 24

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CONTROL POINT: NUMBER & DESCRIPTION

- #10 MON IN WELL LS3649
- #11 MON IN WELL LS3649
- #12 MON IN WELL LS3649
- #13 MON IN WELL LS3649

REV	DATE	BY	DESCRIPTION

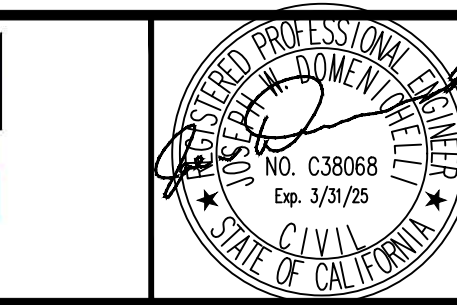
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DESIGNED MATT DOMENICHELLI
DRAWN MATT DOMENICHELLI
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HISTORIC OLIVEHURST STEEL MAIN REPLACEMENT PROJECT
PHASE 1 - KEY MAP

DWG
G6
SHEET
5
OF 24

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Street	Address	Detail	Side	Service Size	Meter Size	NOTES
8th Ave	1630	3	SHORT	1"	3/4"	
8th Ave	1633	2	LONG	1"	3/4"	meter not surveyed
8th Ave	1638	3	SHORT	1"	3/4"	meter not surveyed
8th Ave	1643	3	LONG	1"	3/4"	meter not surveyed
8th Ave	1646	3	SHORT	1"	3/4"	
8th Ave	1651	3	LONG	1"	3/4"	
8th Ave	1652	3	SHORT	1"	3/4"	
8th Ave	1659	1	LONG	1"	3/4"	
8th Ave	1661	2	LONG	1"	3/4"	
8th Ave	1662	3	SHORT	1"	3/4"	
8th Ave	1666	3	SHORT	1"	3/4"	
8th Ave	1669	1	LONG	1"	3/4"	
8th Ave	1673	1	LONG	1"	3/4"	meter not surveyed
9th Ave	1678	3	SHORT	1"	3/4"	
8th Ave	1682	3	SHORT	1"	3/4"	
8th Ave	1685	1	LONG	1"	3/4"	meter not surveyed
8th Ave	1690	5	SHORT	1"	3/4"	
8th Ave	1698	3	SHORT	1"	3/4"	meter not surveyed
8th Ave	1699	3	LONG	1"	3/4"	
8th Ave	1716	1	SHORT	1"	3/4"	Meter to be placed behind gate, special case
8th Ave	1724	5	SHORT	1"	3/4"	
8th Ave	1730	1	SHORT	1"	3/4"	Meter to be placed behind gate, special case
Olivehurst	4810	3	SHORT	1"	3/4"	
8th Ave	1766	1	SHORT	1"	3/4"	
8th Ave	1766	1	SHORT	1"	3/4"	
8th Ave	1769	1	LONG	1"	3/4"	meter not surveyed
8th Ave	1777	1	LONG	1"	3/4"	
8th Ave	1780	2	SHORT	1"	3/4"	
8th Ave	1781	1	LONG	1"	3/4"	Vacant, Provide meter box and corp stop
8th Ave	1784	2	SHORT	1"	3/4"	
8th Ave	1785	1	LONG	1"	3/4"	meter not surveyed
8th Ave	1792	1	SHORT	1"	3/4"	
8th Ave	1799	2	LONG	1"	3/4"	
8th Ave	1802	2	SHORT	1"	3/4"	meter not surveyed
8th Ave	1805	1	LONG	1"	3/4"	Vacant, Provide meter box and corp stop
8th Ave	1808	4	SHORT	1"	3/4"	meter not surveyed
8th Ave	1811	1	LONG	1"	3/4"	meter not surveyed
8th Ave	1815	1	LONG	1"	3/4"	
8th Ave	1816	1	SHORT	1"	3/4"	move to opposite side of PP to avoid fence
8th Ave	1820	4	SHORT	1"	3/4"	meter not surveyed
8th Ave	1821	2	LONG	2"	3/4"	Reconnect existing FH at the valve
8th Ave	1829	3	LONG	1"	3/4"	
8th Ave	1830	4	SHORT	1"	3/4"	meter not surveyed
8th Ave	1834	3	SHORT	1"	3/4"	
8th Ave	1835	3	LONG	1"	3/4"	
8th Ave	1841	1	LONG	2"	2"	
8th Ave	1848	2	SHORT	1"	3/4"	meter not surveyed

Street	Address	Detail	Side	Service Size	Meter Size	NOTES
9th Ave	1634	3	LONG	1"	3/4"	
9th Ave	1635	3	SHORT	1"	3/4"	
9th Ave	1640	3	LONG	1"	3/4"	
9th Ave	1641	2	SHORT	1"	3/4"	
9th Ave	1647	2	SHORT	1"	3/4"	
9th Ave	1648	3	LONG	1"	3/4"	
9th Ave	1654	4	LONG	1"	3/4"	meter not surveyed
9th Ave	1657	4	SHORT	1"	3/4"	meter not surveyed
9th Ave	1662	2	LONG	1"	3/4"	meter not surveyed
9th Ave	1667	2	SHORT	2"	1 - 1/2"	
9th Ave	1670	5	LONG	1"	3/4"	meter not surveyed
9th Ave	1674	2	LONG	1"	3/4"	
9th Ave	1677	1	SHORT	1"	3/4"	
9th Ave	1680	5	LONG	1"	3/4"	meter not surveyed
9th Ave	1685	3	SHORT	1"	3/4"	
9th Ave	1692	1	LONG	1"	3/4"	
9th Ave	1695	1	SHORT	1"	3/4"	
9th Ave	1702	3	LONG	1"	3/4"	
9th Ave	1705	5	SHORT	1"	3/4"	meter not surveyed
9th Ave	1714	3	LONG	1"	3/4"	
9th Ave	1715	3	SHORT	1"	3/4"	meter not surveyed
9th Ave	1720	1	LONG	1"	3/4"	
9th Ave	1723	2	SHORT	1"	3/4"	
9th Ave	1727	2	SHORT	1"	3/4"	
Olivehurst	4758	3	SHORT	1"	3/4"	meter not surveyed

Detail	1	2	3	4	5
Count	33	45	39	29	9

Bid Items	Short	Short w/ Relo	Long	Long w/ Relo
Count	50	34	33	38

NOTES:

- METER TO BE INSTALLED PER OPUD STANDARD DETAIL 8-32 AND DETAIL SHEET D4 DRAWINGS 1-5 AS IDENTIFIED ON THIS SHEET.
- DETAIL COUNT AND BID COUNT IDENTIFIED ON THIS SHEET ARE TOTALS FOR ALL METERS LISTED ON SHEETS G8 & G9.

REV	DATE	BY	DESCRIPTION

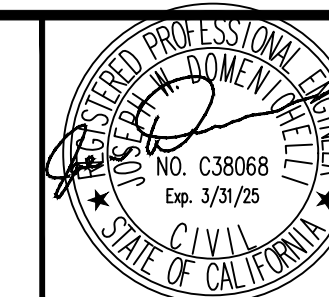
SCALE:
AS NOTED

WARNING
0 1/2 1
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DRAWN MATT DOMENICHELLI
CHECKED JOE DOMENICHELLI

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HISTORIC OLIVEHURST STEEL MAIN REPLACEMENT PROJECT

METER SHEET

20240528.110827 Z:\OPUD-002 HISTORIC WATER INFRASTRUCTURE\DWG - PHASE 1\DWG\OPUD02-GS.DWG

Street	Address	Detail	Side	Service Size	Meter Size	NOTES
Western Ave	4635	5	LONG	1"	3/4"	meter not surveyed
Western Ave	4639	4	LONG	1"	3/4"	meter not surveyed
Western Ave	4646	3	SHORT	1"	3/4"	Existing service is not connected to meter box, locate intract and coordinate with district inspector for meter box relocation
Western Ave	4649	4	LONG	1"	3/4"	meter not surveyed
Western Ave	4652	5	SHORT	1"	3/4"	meter not surveyed
Western Ave	4658	5	SHORT	1"	3/4"	
Western Ave	4660	4	SHORT	1"	3/4"	meter not surveyed
Western Ave	4664	4	SHORT	1"	3/4"	meter not surveyed
Western Ave	4667	1	LONG	1"	3/4"	meter not surveyed
Western Ave	4671	5	LONG	1"	3/4"	meter not surveyed
Western Ave	4676	2	SHORT	1"	3/4"	meter not surveyed
Western Ave	4681	1	LONG	1"	3/4"	Vacant, Provide meter box and corp stop
Western Ave	4688	4	SHORT	1"	3/4"	meter not surveyed
Western Ave	4694	3	SHORT	1"	3/4"	meter not surveyed
Western Ave	4696	4	SHORT	1"	3/4"	meter not surveyed
Western Ave	4702	3	SHORT	1"	3/4"	
Western Ave	4703	4	LONG	1"	3/4"	
Western Ave	4710	4	SHORT	1"	3/4"	
Western Ave	4711	1	LONG	1"	3/4"	
Western Ave	4712	2	SHORT	1"	3/4"	
Western Ave	4717	1	LONG	1"	3/4"	
Western Ave	4718	4	SHORT	1"	3/4"	meter not surveyed
Western Ave	4723	2	LONG	1"	3/4"	meter not surveyed
Western Ave	4724	4	SHORT	1"	3/4"	meter not surveyed
Western Ave	4728	4	SHORT	1"	3/4"	meter not surveyed
Western Ave	4731	3	LONG	1"	3/4"	meter not surveyed
Western Ave	4734	4	SHORT	1"	3/4"	meter not surveyed
Western Ave	4737	2	LONG	1"	3/4"	4737,4739,4741 all on new 1" poly service from Western Ave
Western Ave	4740	3	SHORT	1"	3/4"	meter not surveyed
Western Ave	4759	2	SHORT	1"	3/4"	meter not surveyed
Western Ave	4764	1	LONG	1"	3/4"	
Western Ave	4768	1	LONG	1"	3/4"	
Western Ave	4775	2	SHORT	1"	3/4"	meter not surveyed
Western Ave	4776	3	LONG	1"	3/4"	meter not surveyed
Western Ave	4781	4	SHORT	1"	3/4"	meter not surveyed
Western Ave	4787	2	SHORT	1"	3/4"	
Western Ave	4790	4	LONG	1"	3/4"	meter not surveyed
Western Ave	4793	2	SHORT	1"	3/4"	meter not surveyed
Western Ave	4796	2	LONG	1"	3/4"	
Western Ave	4799	2	SHORT	1"	3/4"	meter not surveyed
Western Ave	4810	3	LONG	1"	3/4"	meter not surveyed
Private Rd	1844A	4	SHORT	1"	3/4"	meter not surveyed
Private Rd	1844B	4	SHORT	1"	3/4"	meter not surveyed
Private Rd	1838A	2	LONG	1"	3/4"	meter not surveyed
Private Rd	1838B	2	LONG	1"	3/4"	meter not surveyed
Private Rd	1846A	2	LONG	1"	3/4"	meter not surveyed
Private Rd	1846B	2	LONG	1"	3/4"	meter not surveyed

Street	Address	Detail	Side	Service Size	Meter Size	NOTES
10th Ave	1638	2	LONG	1"	3/4"	
10th Ave	1639	2	SHORT	1"	3/4"	Meter located on Western Ave
10th Ave	1647	3	SHORT	1"	3/4"	
10th Ave	1650	3	LONG	1"	3/4"	
10th Ave	1653	4	SHORT	1"	3/4"	
10th Ave	1658	4	LONG	1"	3/4"	meter not surveyed
10th Ave	1661	3	SHORT	1"	3/4"	meter not surveyed
10th Ave	1667	2	SHORT	1"	3/4"	Meter not surveyed
10th Ave	1668	4	LONG	1"	3/4"	meter not surveyed
10th Ave	1673	2	SHORT	1"	3/4"	
10th Ave	1674	4	LONG	1"	3/4"	meter not surveyed
10th Ave	1680	3	LONG	1"	3/4"	meter not surveyed
10th Ave	1685	1	SHORT	1"	3/4"	meter not surveyed
10th Ave	1687	2	SHORT	1"	3/4"	meter not surveyed
10th Ave	1691	2	SHORT	1"	3/4"	
10th Ave	1691A	2	SHORT	1"	3/4"	
10th Ave	1692	2	LONG	1"	3/4"	
10th Ave	1693	2	SHORT	1"	3/4"	
10th Ave	1693A	2	SHORT	1"	3/4"	
10th Ave	1695	2	SHORT	1"	3/4"	
10th Ave	1696	4	LONG	1"	3/4"	meter not surveyed
10th Ave	1704	3	LONG	1"	3/4"	meter not surveyed
10th Ave	1707	2	SHORT	1"	3/4"	
10th Ave	1707A	2	SHORT	1"	3/4"	
10th Ave	1708	2	LONG	1 1/2"	3/4"	meter not surveyed
10th Ave	1710	2	LONG	1 1/2"	3/4"	meter not surveyed
10th Ave	1716	2	LONG	1"	3/4"	
10th Ave	1716A	1	LONG	1"	3/4"	
10th Ave	1717	3	SHORT	1"	3/4"	meter not surveyed
10th Ave	1722	4	LONG	1"	3/4"	meter not surveyed
10th Ave	1725	3	SHORT	1"	3/4"	meter not surveyed
10th Ave	1730	4	LONG	1"	3/4"	meter not surveyed
10th Ave	1731	1	SHORT	1"	3/4"	
10th Ave	1735	1	SHORT	1"	3/4"	meter not surveyed
10th Ave	1736	1	LONG	1"	3/4"	
10th Ave	1739	4	SHORT	1"	3/4"	meter not surveyed
10th Ave	1744					meter on olivehurst, out of scope
Olivehurst	4700					meter on olivehurst, out of scope

Detail	1	2	3	4	5
Count	33	45	39	29	9

Bid Items	Short	Short w/ Relo	Long	Long w/ Relo
Count	50	34	33	38

NOTES:

- METERS TO BE INSTALLED PER OPUD STANDARD DETAIL 8-32 AND DETAIL SHEET D4 DRAWINGS 1-5 AS IDENTIFIED ON THIS SHEET.
- DETAIL COUNT AND BID COUNT IDENTIFIED ON THIS SHEET ARE TOTALS FOR ALL METERS LISTED ON SHEETS G8 & G9.

REV	DATE	BY	DESCRIPTION

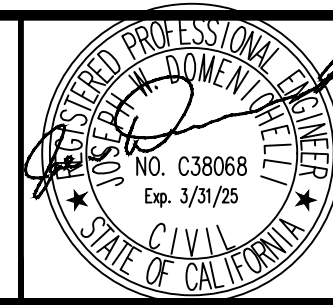
SCALE: AS NOTED

WARNING
0 1/2 1
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE.

DESIGNED MATT DOMENICHELLI
DRAWN MATT DOMENICHELLI
CHECKED JOE DOMENICHELLI

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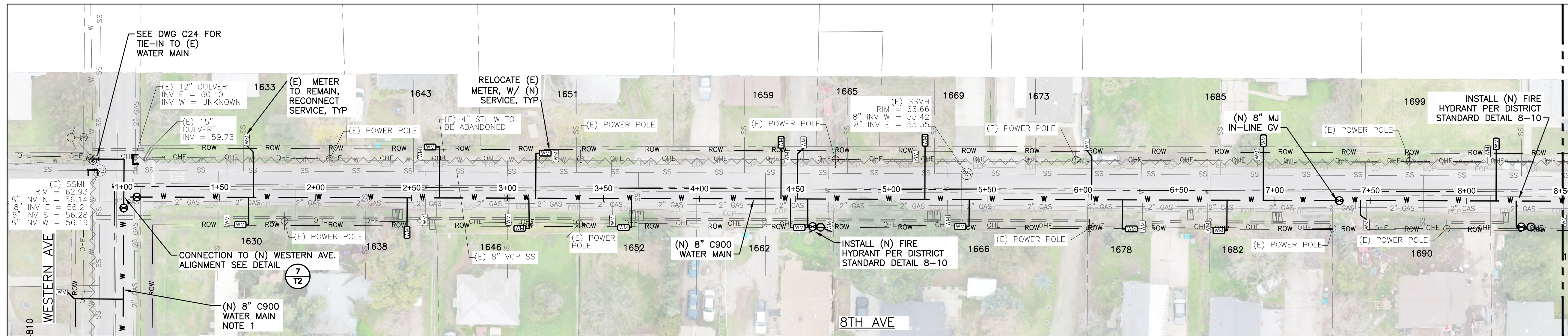
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HISTORIC OLIVEHURST STEEL MAIN REPLACEMENT PROJECT

METER SHEET

20240528.133535 Z:\OPUD-002 HISTORIC WATER INFRASTRUCTURE\DWG - PHASE 1\DWG\OPUD02-C15-25_WESTERN_8_9_10TH.DWG



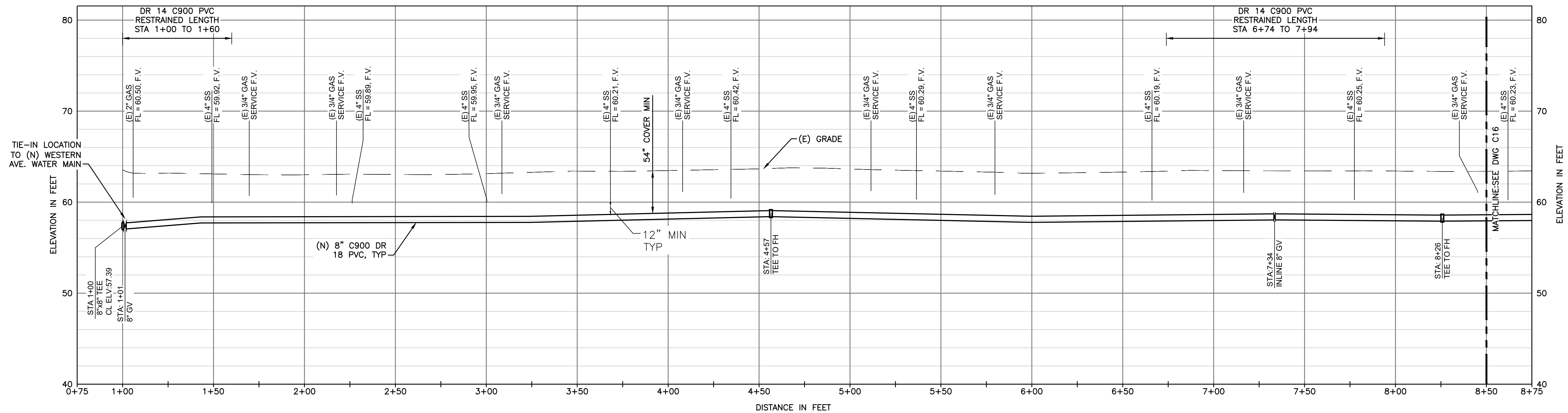
PLAN

SCALE: 1' = 30'



SHEET NOTES:

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2. FINAL METER PLACEMENT SHALL BE COORDINATED WITH THE PROPERTY OWNER AND APPROVED BY THE DISTRICT INSPECTOR.
3. REFER TO METER SHEETS G8 & G9 FOR ADDITIONAL INFORMATION ON METER REQUIREMENTS.
4. EXISTING LATERALS NOT POTHOLED, CONTRACTOR TO VERIFY UTILITY DEPTHS AND LOCATIONS.
5. MAINTAIN 5' MINIMUM CLEARANCE WHEN EXCAVATING AROUND POWER POLES.
6. FOR DDW REQUIREMENTS, SEE DETAILS 1 & 2 ON DWG D1



PROFILE

HORIZONTAL SCALE: 1' = 30'
VERTICLE SCALE: 1" = 6'

REV	DATE	BY	DESCRIPTION

SCALE: AS NOTED

WARNING 1/2 1

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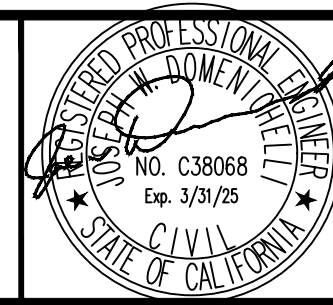
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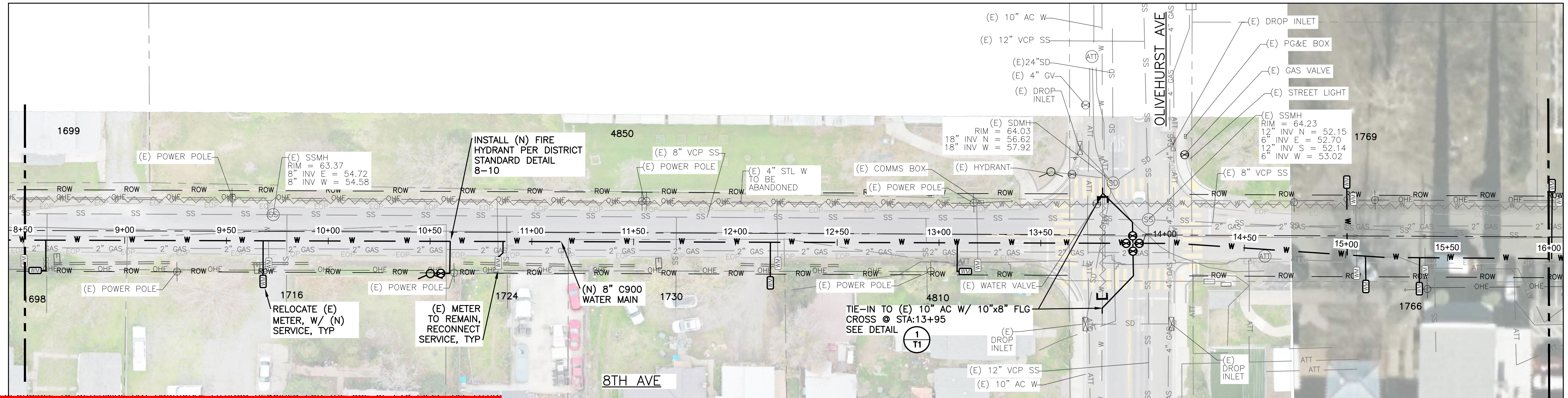


HISTORIC OLIVEHURST STEEL MAIN REPLACEMENT PROJECT

**8TH AVE. ALIGNMENT
STA. 1+00 TO STA. 8+50**

DWG **C15**
SHEET **8**
OF 24

20240528.133535 Z:\OPUD-002 HISTORIC WATER INFRASTRUCTURE\DWG - PHASE 1\DWG\OPUD02-C15-25 WESTERN_8_9_10TH.DWG

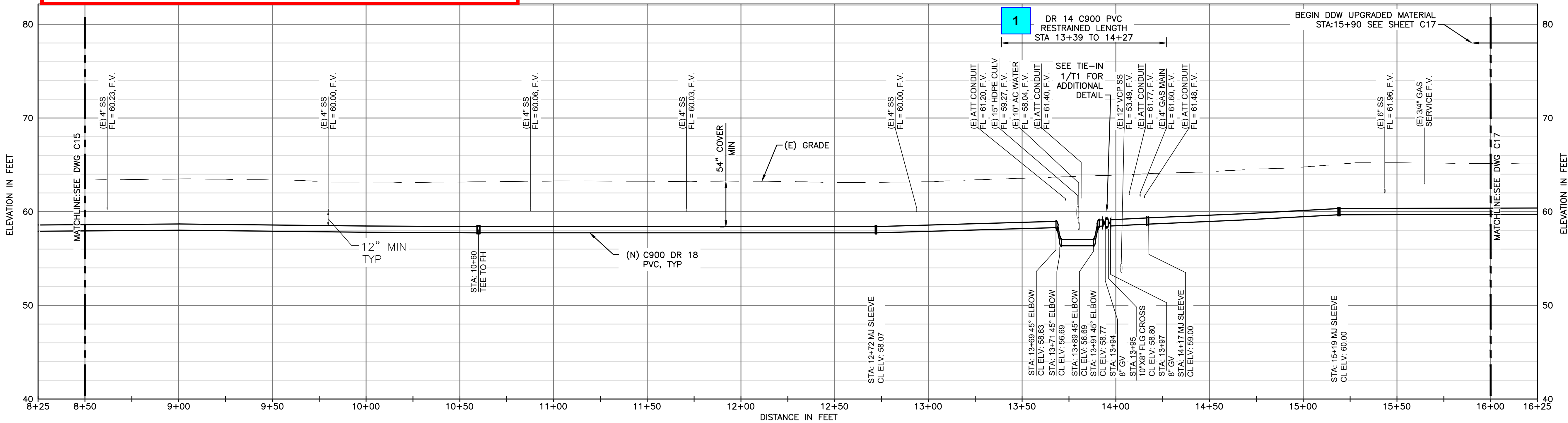


Legend for Full Plan Set:

- # Water main crossing existing non-potable fluid pipeline
- # Water main paralleling existing non-potable fluid pipeline
- # Length of water main paralleling existing non-potable fluid pipeline

PLAN
SCALE: 1' = 30'

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PROFILE
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VERTICAL SCALE: 1" = 6'

REV	DATE	BY	DESCRIPTION

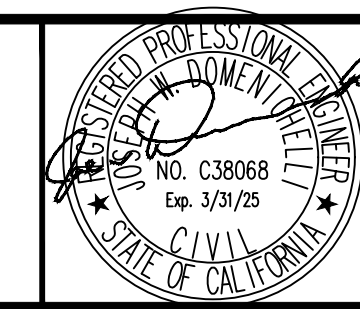
SCALE: AS NOTED

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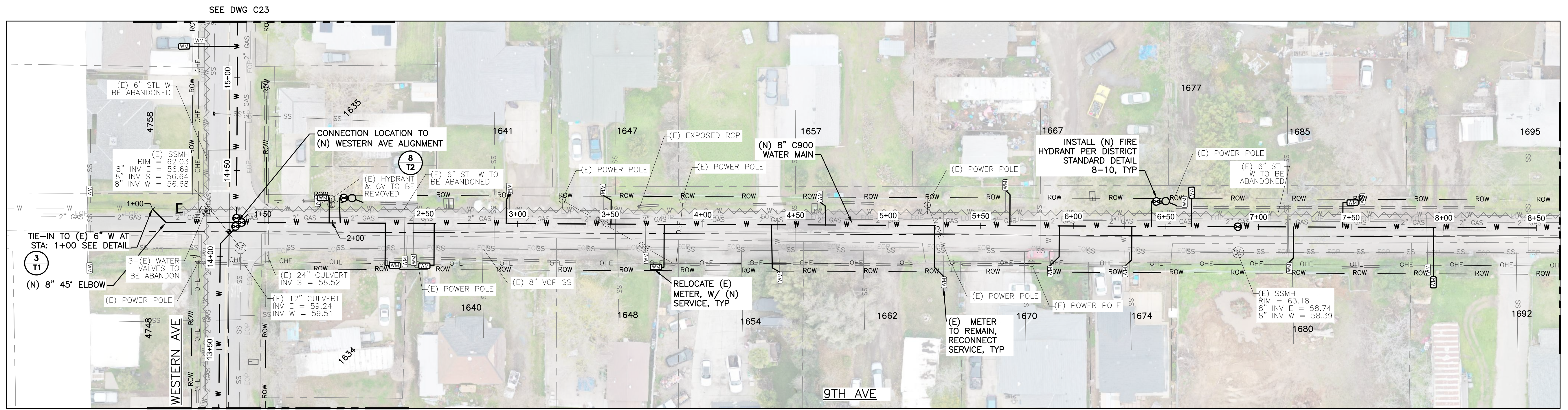
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HISTORIC OLIVEHURST STEEL MAIN REPLACEMENT PROJECT
8TH AVE. ALIGNMENT
STA. 8+50 TO STA. 16+00

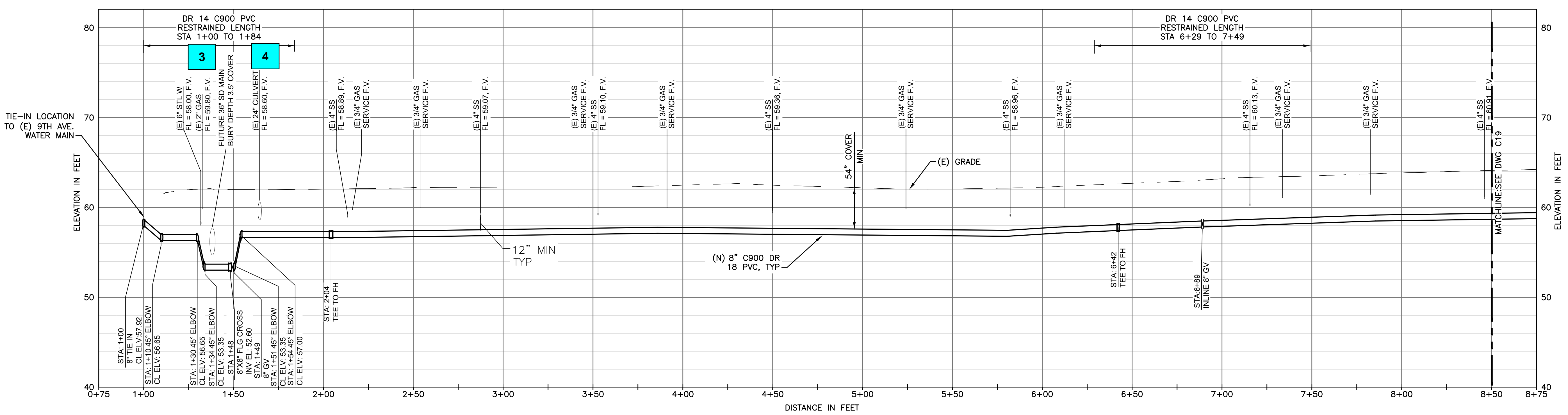
DWG **C16**
SHEET **9**
OF 24



Legend for Full Plan Set:

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Z:\IOPUD-002 HISTORIC WATER INFRASTRUCTURE\DWG - PHASE I\DWG\IOPUD02-C15-25 WESTERN_8_9_10TH.DWG

REV	DATE	BY	DESCRIPTION

SCALE: AS NOTED

WARNING 1/2 1

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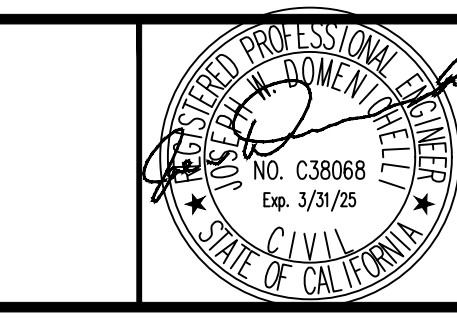
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HISTORIC OLIVEHURST STEEL MAIN REPLACEMENT PROJECT

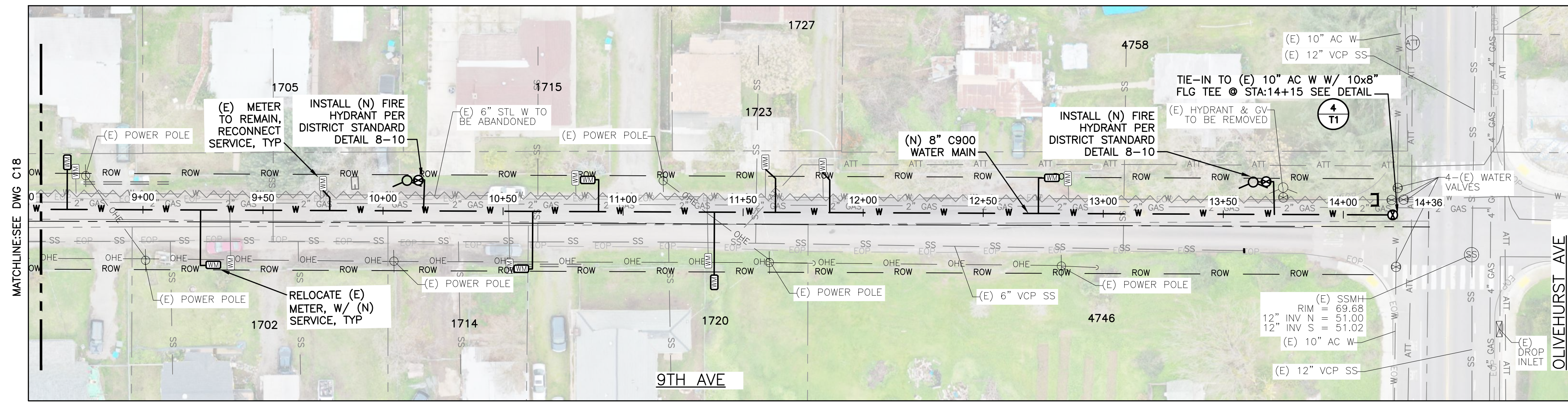
9TH AVE. ALIGNMENT
STA. 1+00 TO STA. 8+50

DWG C18

SHEET 11

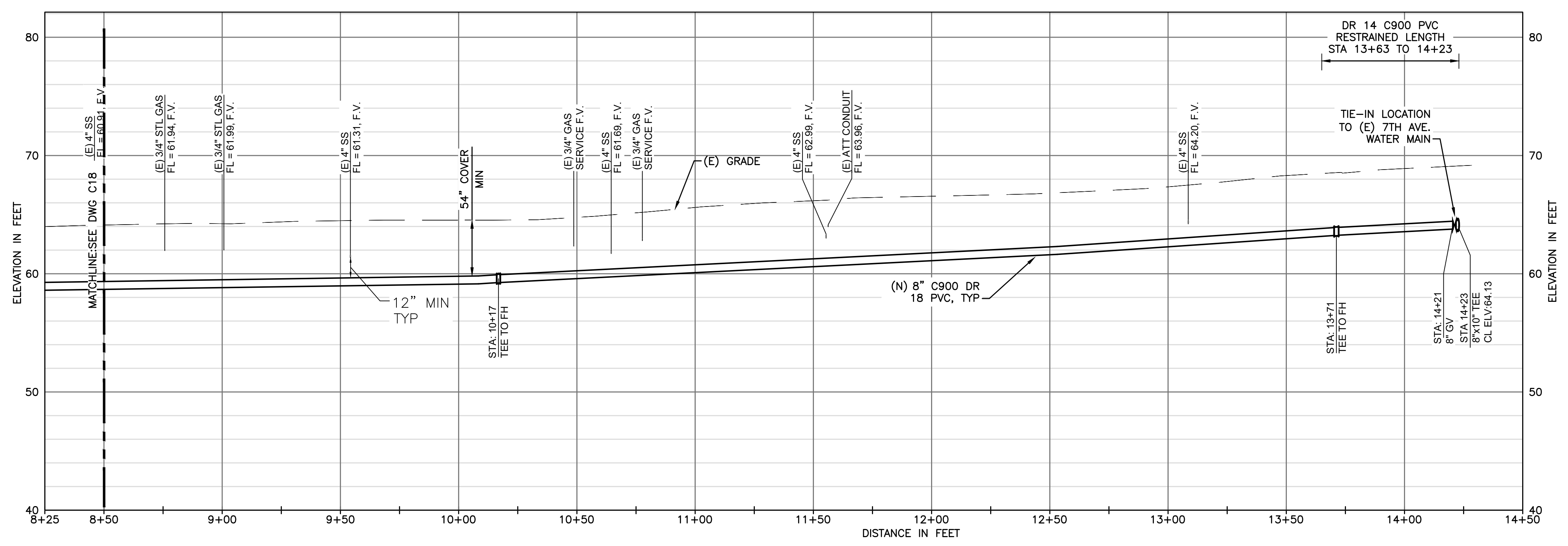
OF 24

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PLAN
SCALE: 1" = 30'

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PROFILE
HORIZONTAL SCALE: 1" = 30'
VERTICAL SCALE: 1" = 6'

REV	DATE	BY	DESCRIPTION

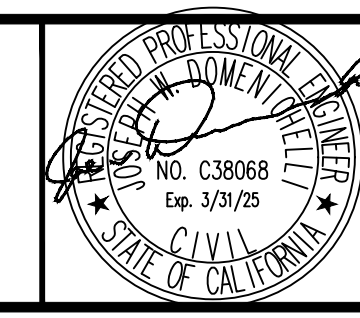
SCALE: AS NOTED

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0 1/2 1
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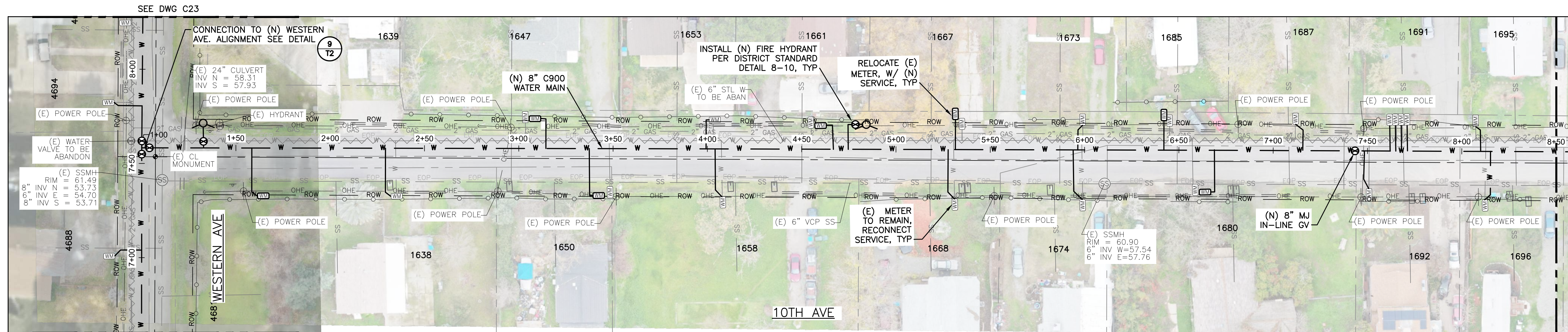
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HISTORIC OLIVEHURST STEEL MAIN REPLACEMENT PROJECT
9TH AVE. ALIGNMENT
STA. 8+50 TO STA. 14+20

DWG **C19**
SHEET **12**
OF 24

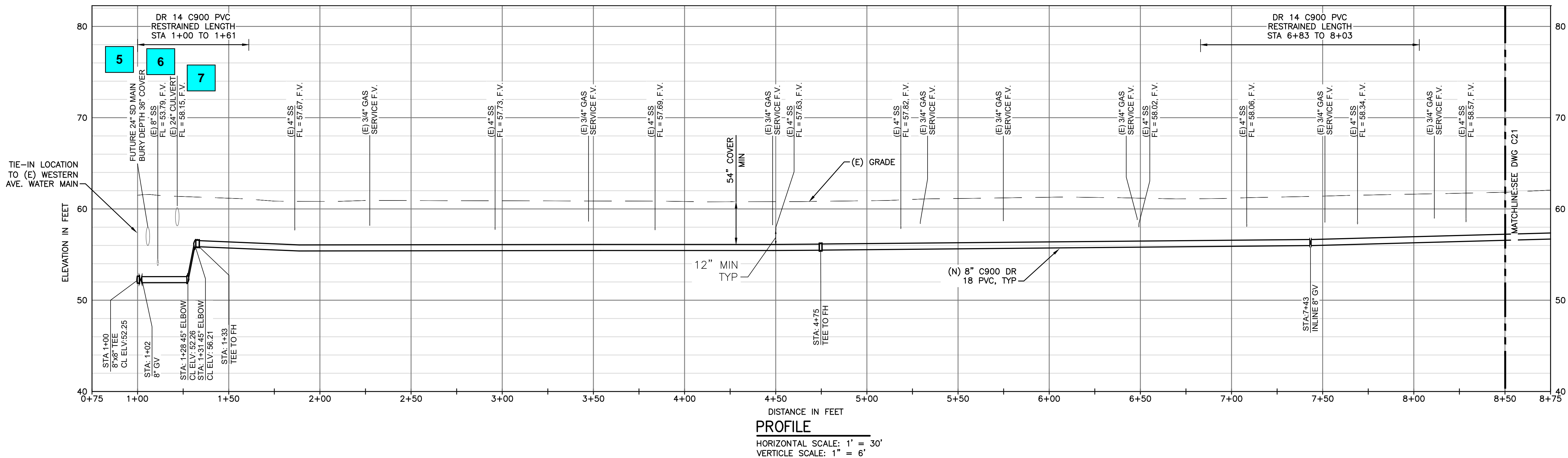


Legend for Full Plan Set:

- # Water main crossing existing non-potable fluid pipeline
- # Water main paralleling existing non-potable fluid pipeline
- # Length of water main paralleling existing non-potable fluid pipeline

PLAN
SCALE: 1" = 30'

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Z:\IOPUD-002 HISTORIC WATER INFRASTRUCTURE\DWG - PHASE I\DWG\IOPUD02-C15-25 WESTERN_8_9_10TH.DWG

REV	DATE	BY	DESCRIPTION

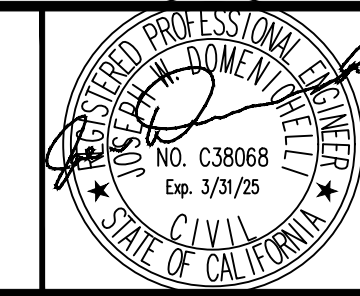
SCALE: AS NOTED

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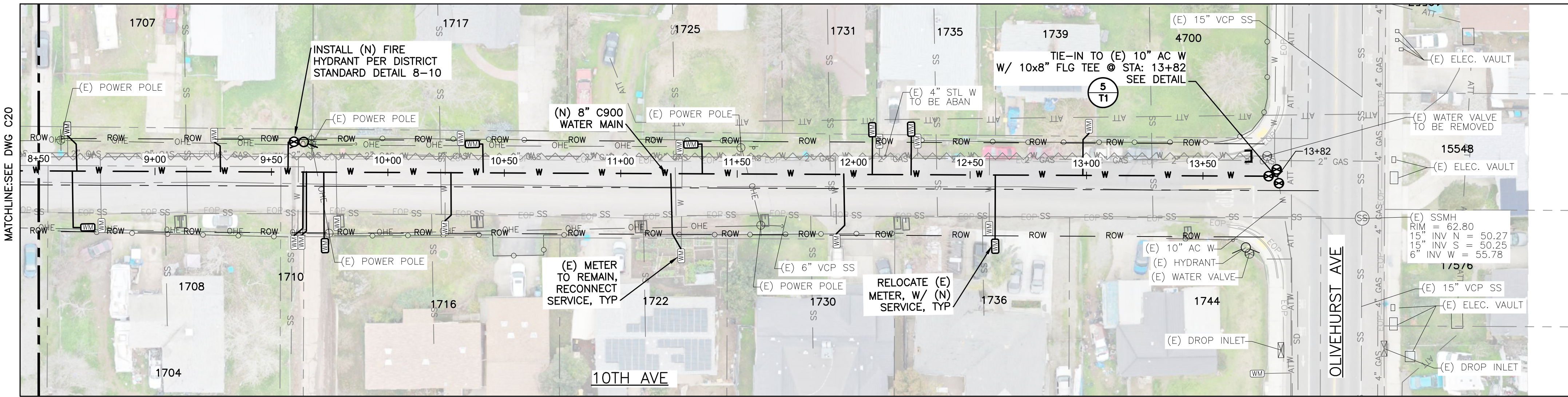
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HISTORIC OLIVEHURST STEEL MAIN REPLACEMENT PROJECT
**10TH AVE. ALIGNMENT
STA. 1+00 TO STA. 8+50**

DWG **C20**
SHEET **13**
OF 24

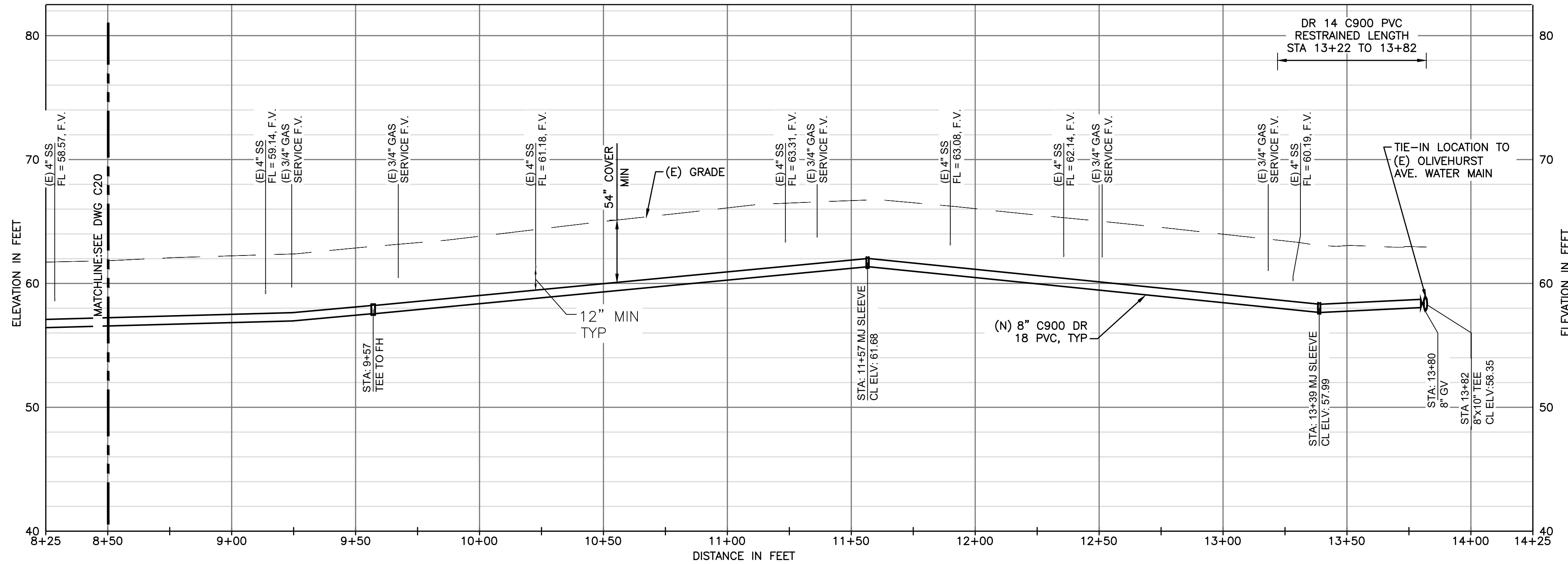
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PLAN
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PROFILE
HORIZONTAL SCALE: 1' = 30'
VERTICLE SCALE: 1" = 6'

REV	DATE	BY	DESCRIPTION

SCALE: AS NOTED

WARNING
0 1/2 1
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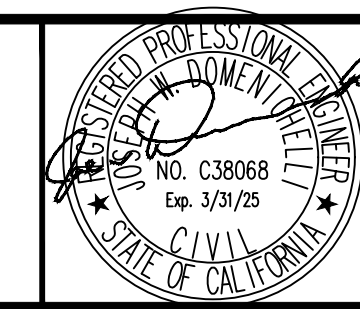
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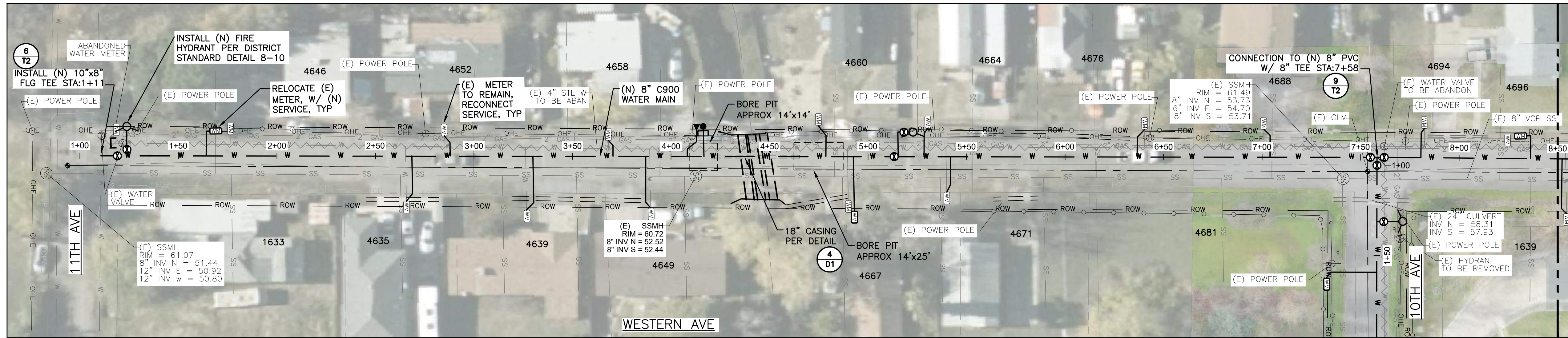


HISTORIC OLIVEHURST STEEL MAIN REPLACEMENT PROJECT

10TH AVE. ALIGNMENT
STA. 8+50 TO STA. 13+75

DWG
C21
SHEET
14
OF 24

Z:\OPUD-002 HISTORIC WATER INFRASTRUCTURE\DWG - PHASE 1\DWG\OPUD02-C15-25 WESTERN_8_9_10TH.DWG

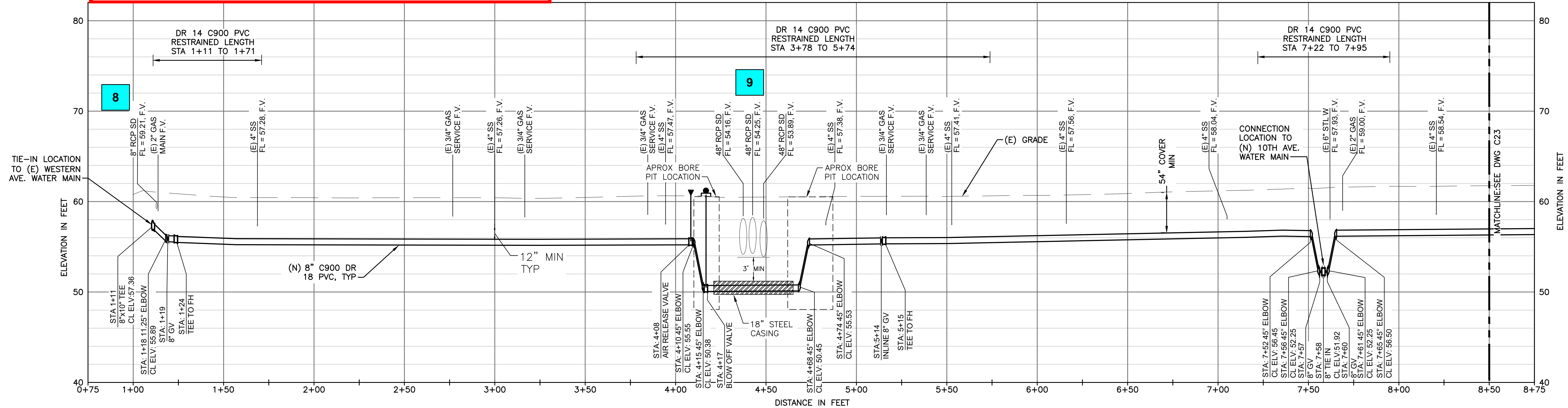


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VERTICLE SCALE: 1" = 6'

REV	DATE	BY	DESCRIPTION

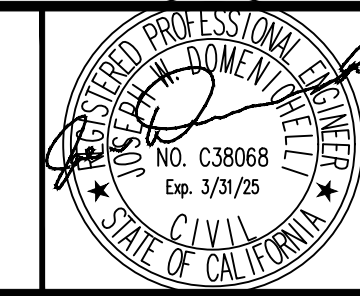
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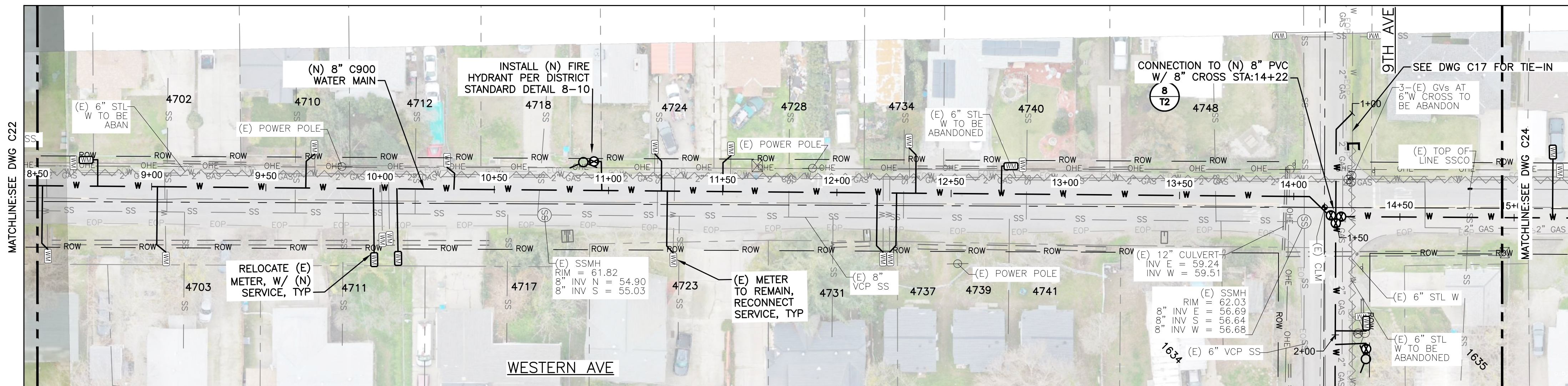
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Olivehurst, CA 95961
Ph: (530) 743-4657
Fax: (530) 743-3023



HISTORIC OLIVEHURST STEEL MAIN REPLACEMENT PROJECT
WESTERN AVE. ALIGNMENT
STA. 1+00 TO STA. 8+50

DWG **C22**
SHEET **15**
OF 24

Z:\OPUD-002 HISTORIC WATER INFRASTRUCTURE\DWG - PHASE 1\DWG\OPUD02-C15-25 WESTERN_8_9_10TH.DWG

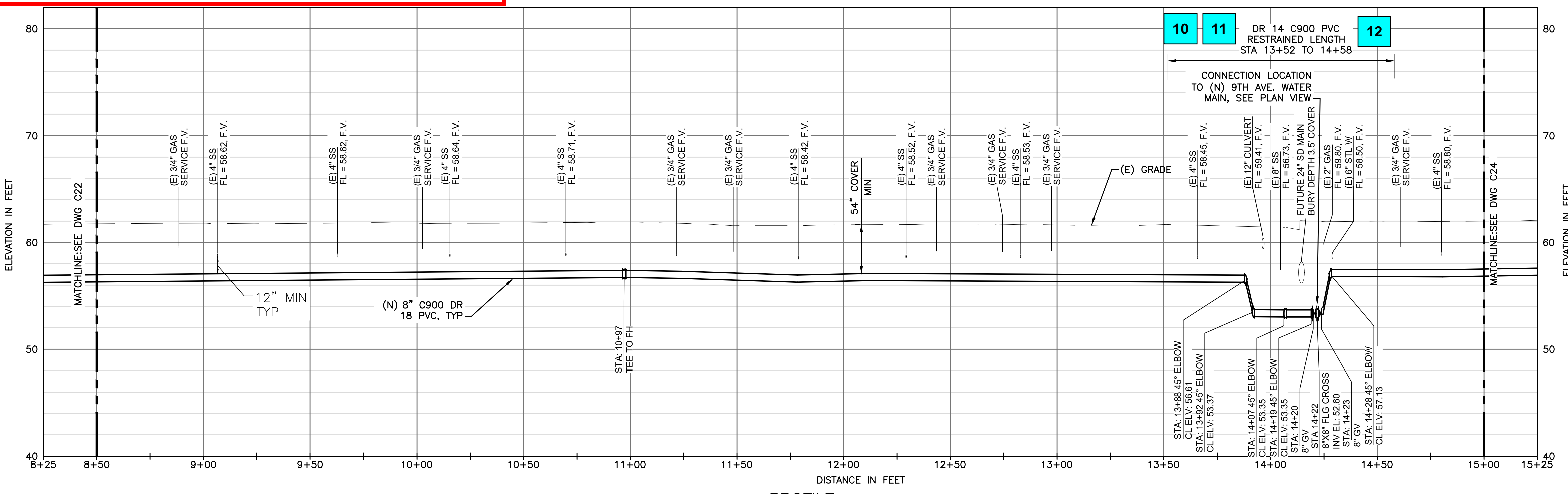


Legend for Full Plan Set:

- # Water main crossing existing non-potable fluid pipeline
- # Water main paralleling existing non-potable fluid pipeline
- # Length of water main paralleling existing non-potable fluid pipeline

PLAN
SCALE: 1" = 30'

- SHEET NOTES:**
- NOT ALL METERS HAVE BEEN SURVEYED, LOCATIONS ARE SCHEMATIC.
 - FINAL METER PLACEMENT SHALL BE COORDINATED WITH THE PROPERTY OWNER AND APPROVED BY THE DISTRICT INSPECTOR.
 - REFER TO METER SHEETS G8 & G9 FOR ADDITIONAL INFORMATION ON METER REQUIREMENTS.
 - EXISTING LATERALS NOT POTHOLED, CONTRACTOR TO VERIFY UTILITY DEPTHS AND LOCATIONS.
 - MAINTAIN 5' MINIMUM CLEARANCE WHEN EXCAVATING AROUND POWER POLES.
 - FOR DDW REQUIREMENTS, SEE DETAILS 1 & 2 ON DWG D1



PROFILE
HORIZONTAL SCALE: 1" = 30'
VERTICLE SCALE: 1" = 6'

REV	DATE	BY	DESCRIPTION

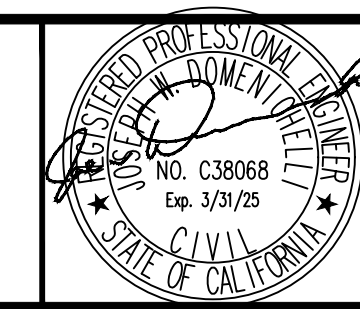
SCALE: AS NOTED

WARNING
0 1/2 1
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE.

DESIGNED MATT DOMENICHELLI
DRAWN MATT DOMENICHELLI
CHECKED JOE DOMENICHELLI

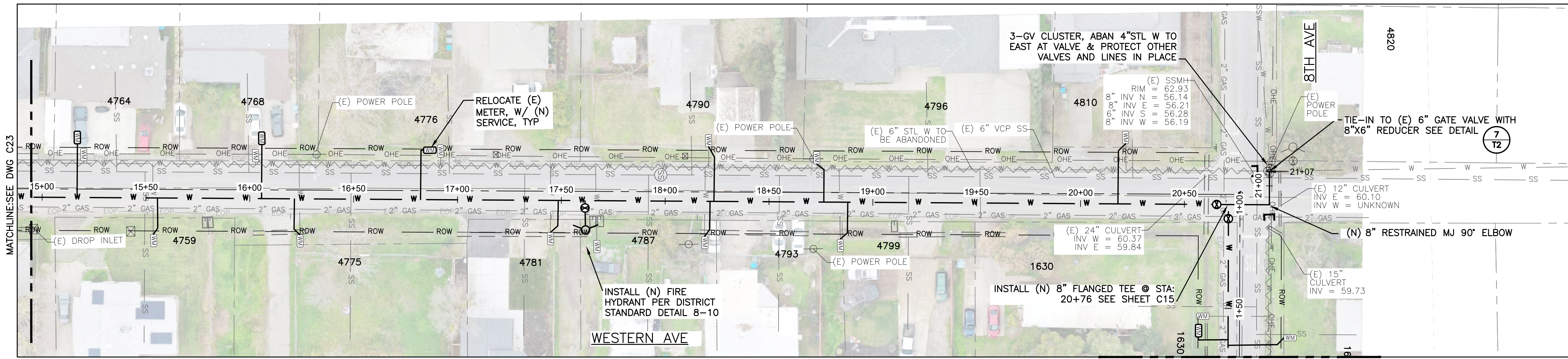
DOMENICHELLI & ASSOCIATES
5180 Golden Foothill Pkwy, Suite 220
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HISTORIC OLIVEHURST STEEL MAIN REPLACEMENT PROJECT
WESTERN AVE. ALIGNMENT
STA. 8+50 TO STA. 15+00

DWG **C23**
SHEET **16**
OF 24

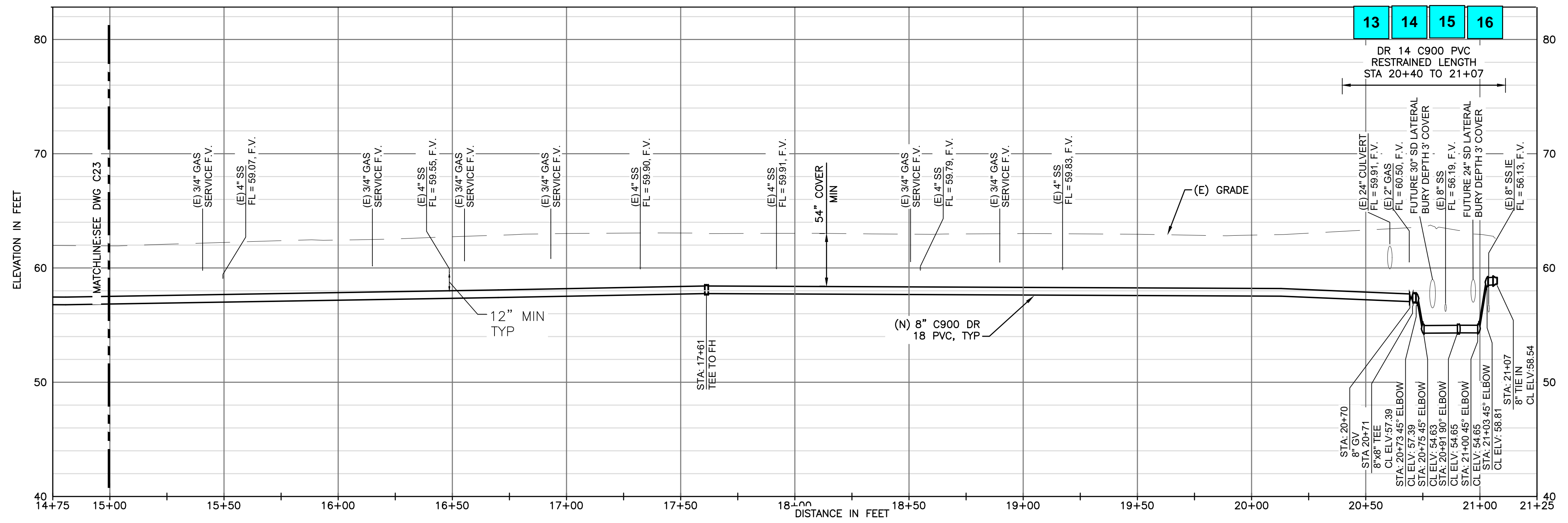


Legend for Full Plan Set:

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PROFILE
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VERTICLE SCALE: 1" = 6'

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REV	DATE	BY	DESCRIPTION

SCALE: AS NOTED

WARNING 1/2 1

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DRAWN MATT DOMENICHELLI
CHECKED JOE DOMENICHELLI

DOMENICHELLI & ASSOCIATES

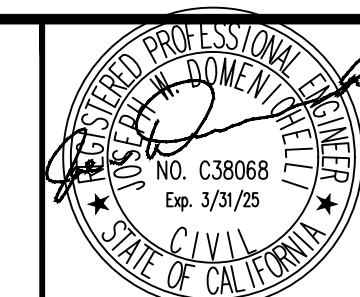
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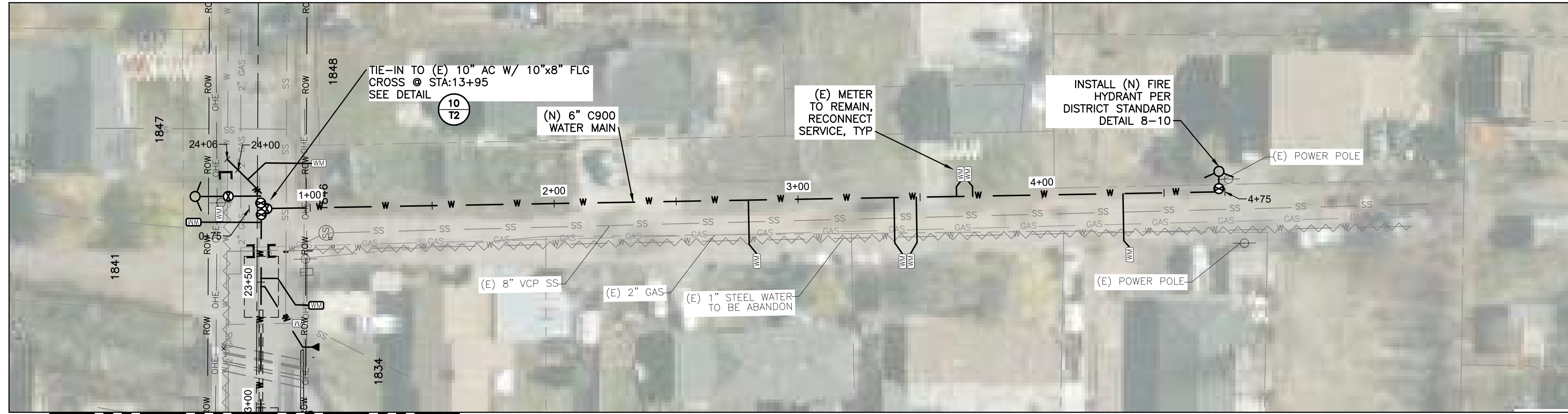


HISTORIC OLIVEHURST STEEL MAIN REPLACEMENT PROJECT

WESTERN AVE. ALIGNMENT
STA. 15+00 TO STA. 21+25

DWG **C24**
SHEET **17**
OF 24

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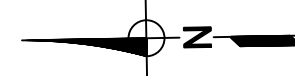


MATCHLINE:SEE DWG C17

PRIVATE DRIVE

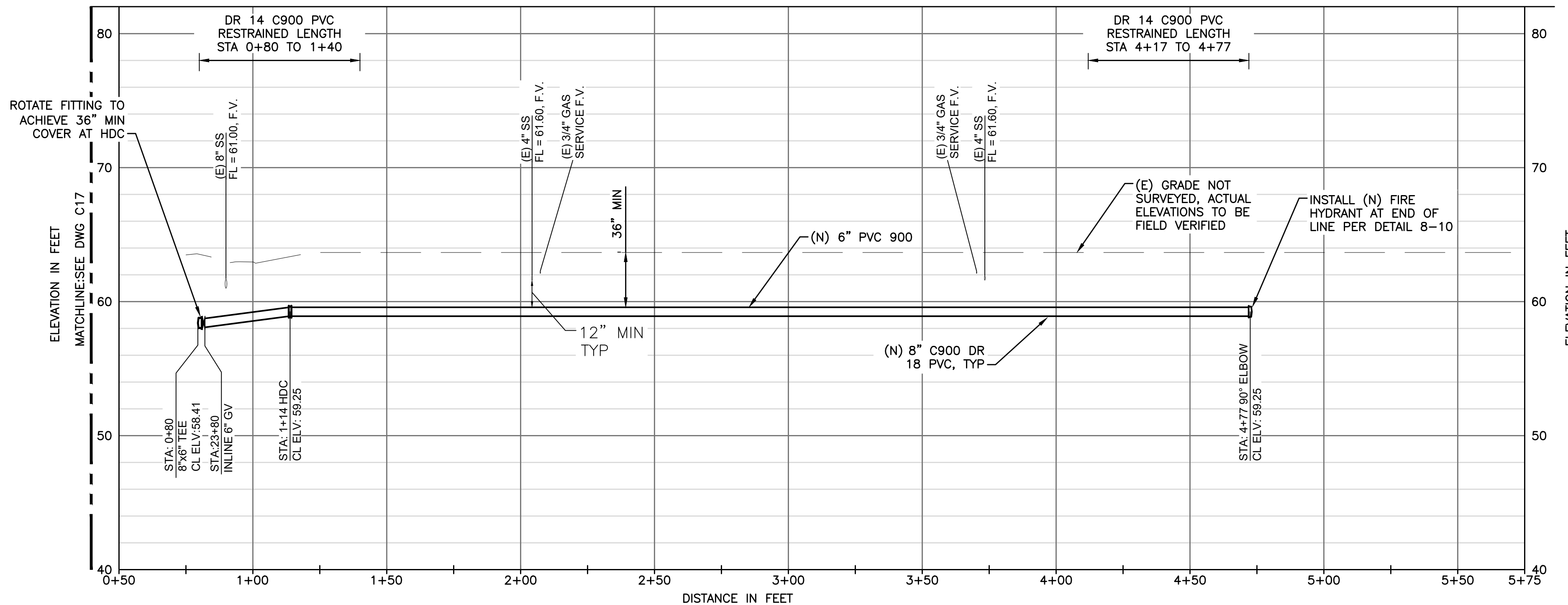
PLAN

SCALE: 1" = 30'



SHEET NOTES:

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3. REFER TO METER SHEETS G8 & G9 FOR ADDITIONAL INFORMATION ON METER REQUIREMENTS.
4. EXISTING LATERALS NOT POTHOLED, CONTRACTOR TO VERIFY UTILITY DEPTHS AND LOCATIONS.
5. MAINTAIN 5' MINIMUM CLEARANCE WHEN EXCAVATING AROUND POWER POLES.
6. FOR DDW REQUIREMENTS, SEE DETAILS 1 & 2 ON DWG D1



PROFILE

HORIZONTAL SCALE: 1" = 30'
VERTICLE SCALE: 1" = 6'

REV	DATE	BY	DESCRIPTION

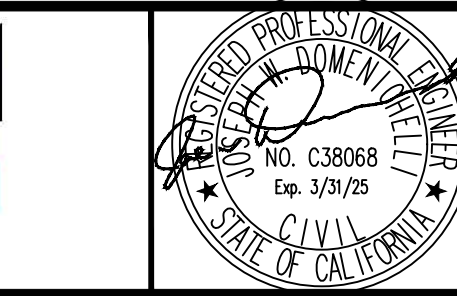
SCALE: AS NOTED

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0 1/2 1
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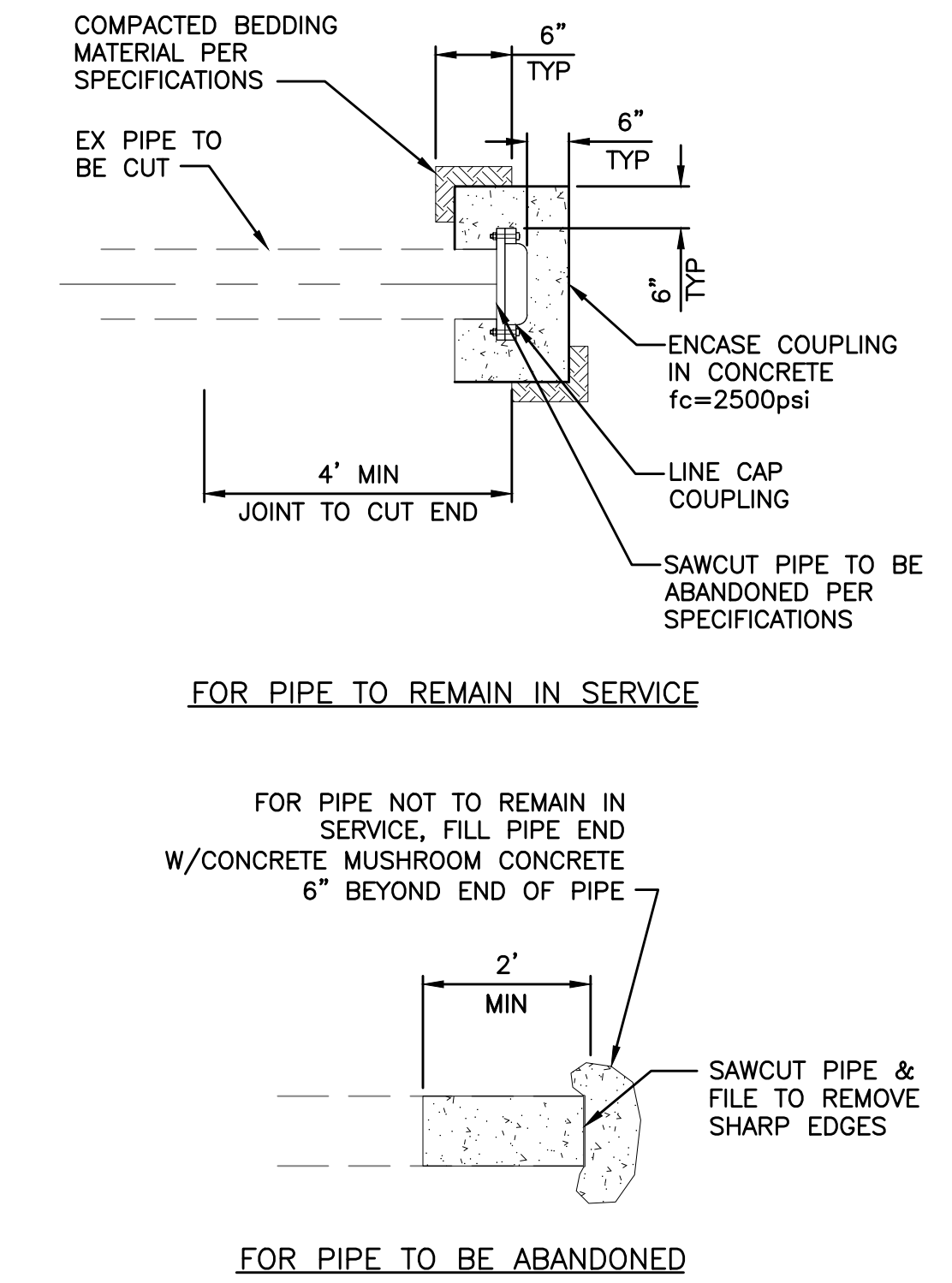
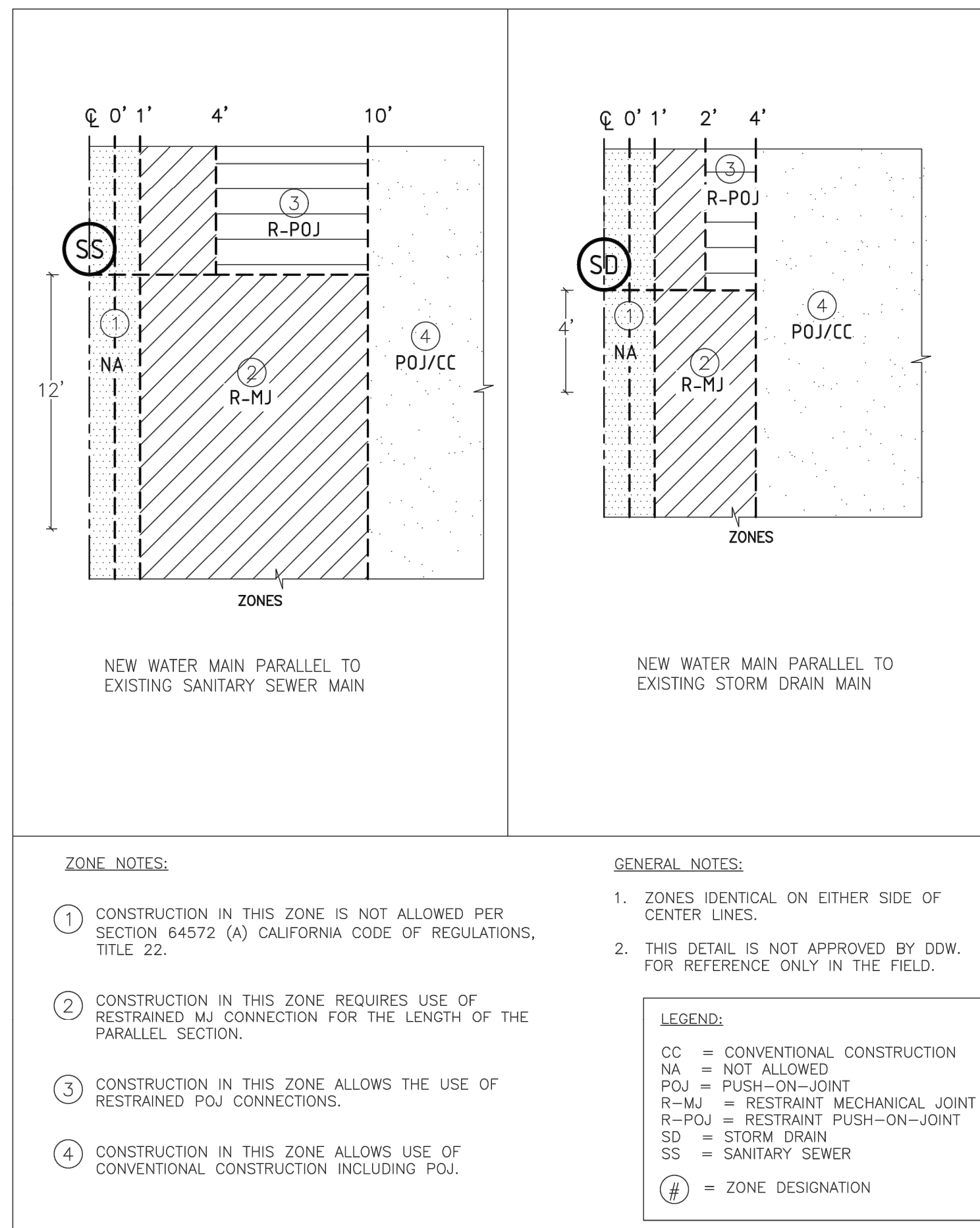
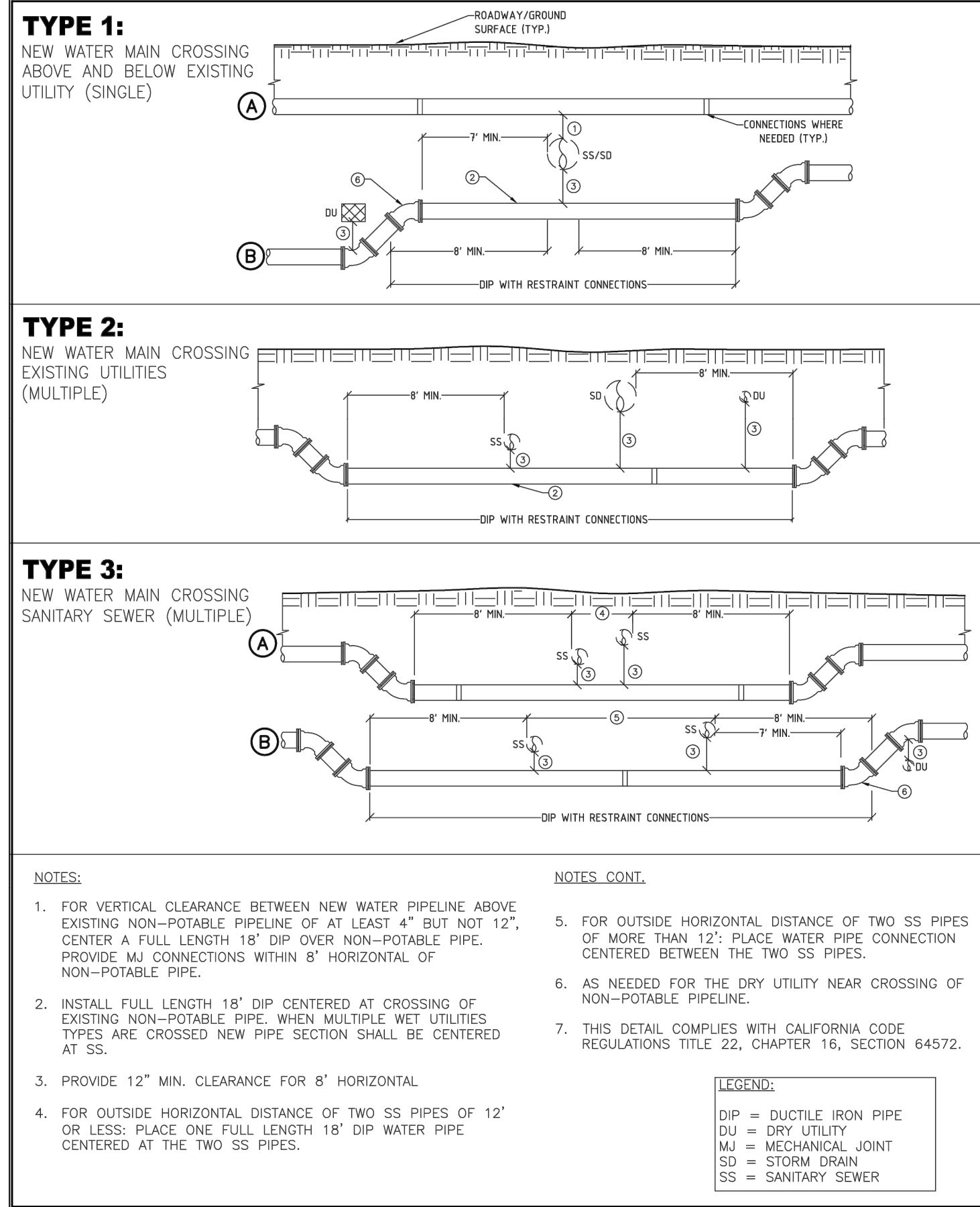
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HISTORIC OLIVEHURST STEEL MAIN REPLACEMENT PROJECT

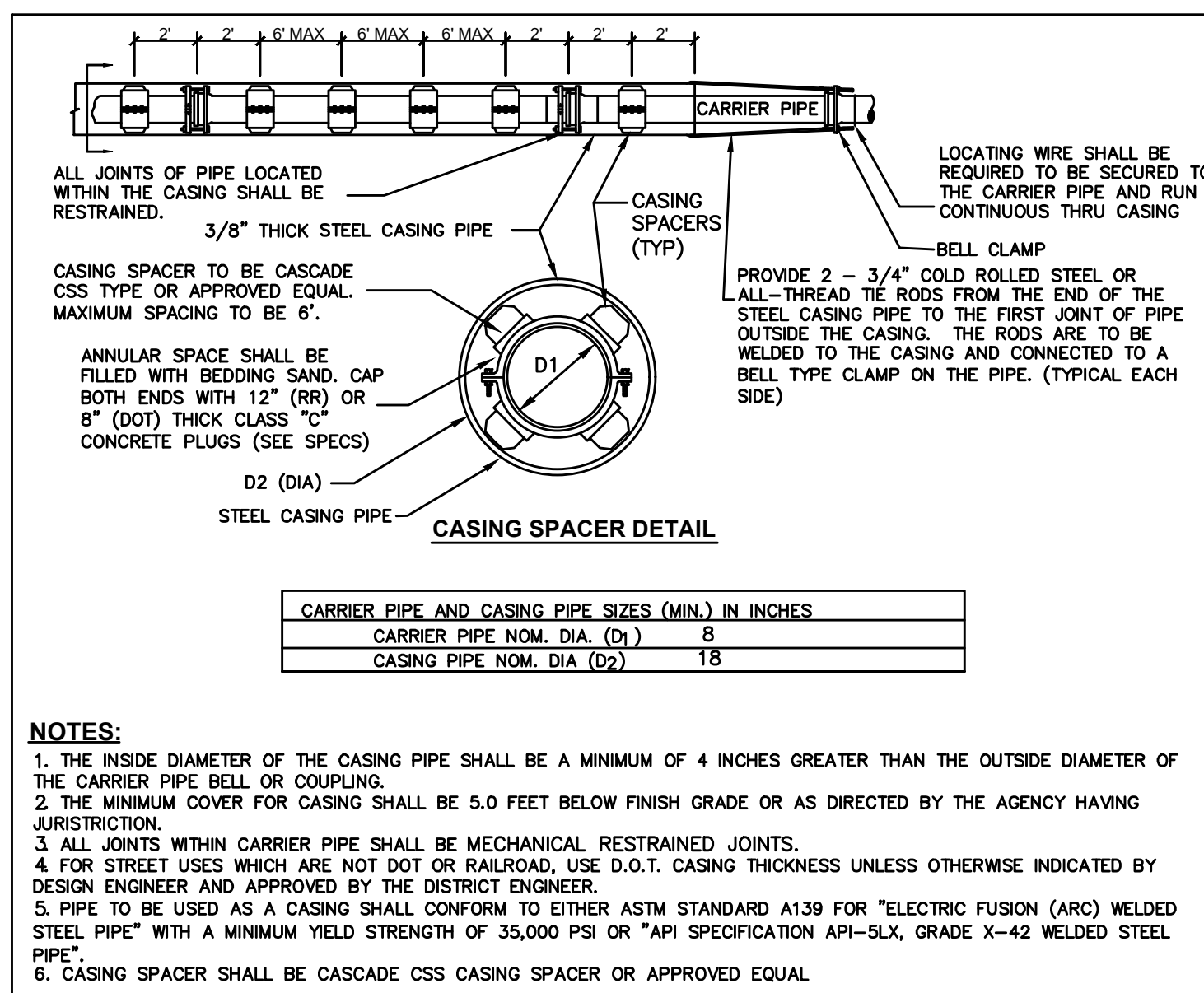
PRIVATE DRIVE
STA. 0+50 TO STA. 5+75

DWG
C25
SHEET
18
OF 24



TYPICAL PIPE CAPPING DETAILS 3 TYP

CROSSING UTILITIES DETAILS 1 TYP



JACK AND BORE CASING DETAIL 4 TYP

EXISTING NON-POTABLE UTILITY NEW WATER MAIN PARALLELING 2 TYP

NOTE:
DETAIL 2/TYP IS A GUIDELINE FOR PARALLEL DISTANCE SEPARATION, AND IS NOT AN APPROVED DETAIL FROM DDW. REFERENCE G3 FOR DDW REQUIREMENTS.

20240511.105446 Z:\OPUD-002 HISTORIC WATER INFRASTRUCTURE\DWG - PHASE 1\DWG\OPUD02-TS AND D'S.DWG

REV	DATE	BY	DESCRIPTION

SCALE: NA

WARNING 1/2 1

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DRAWN_MATT DOMENICHELLI
CHECKED_JOE DOMENICHELLI

DOMENICHELLI & ASSOCIATES

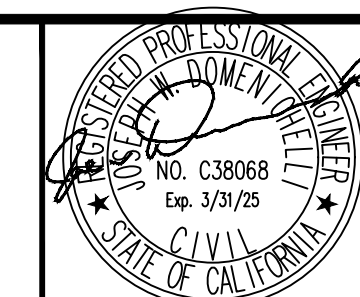
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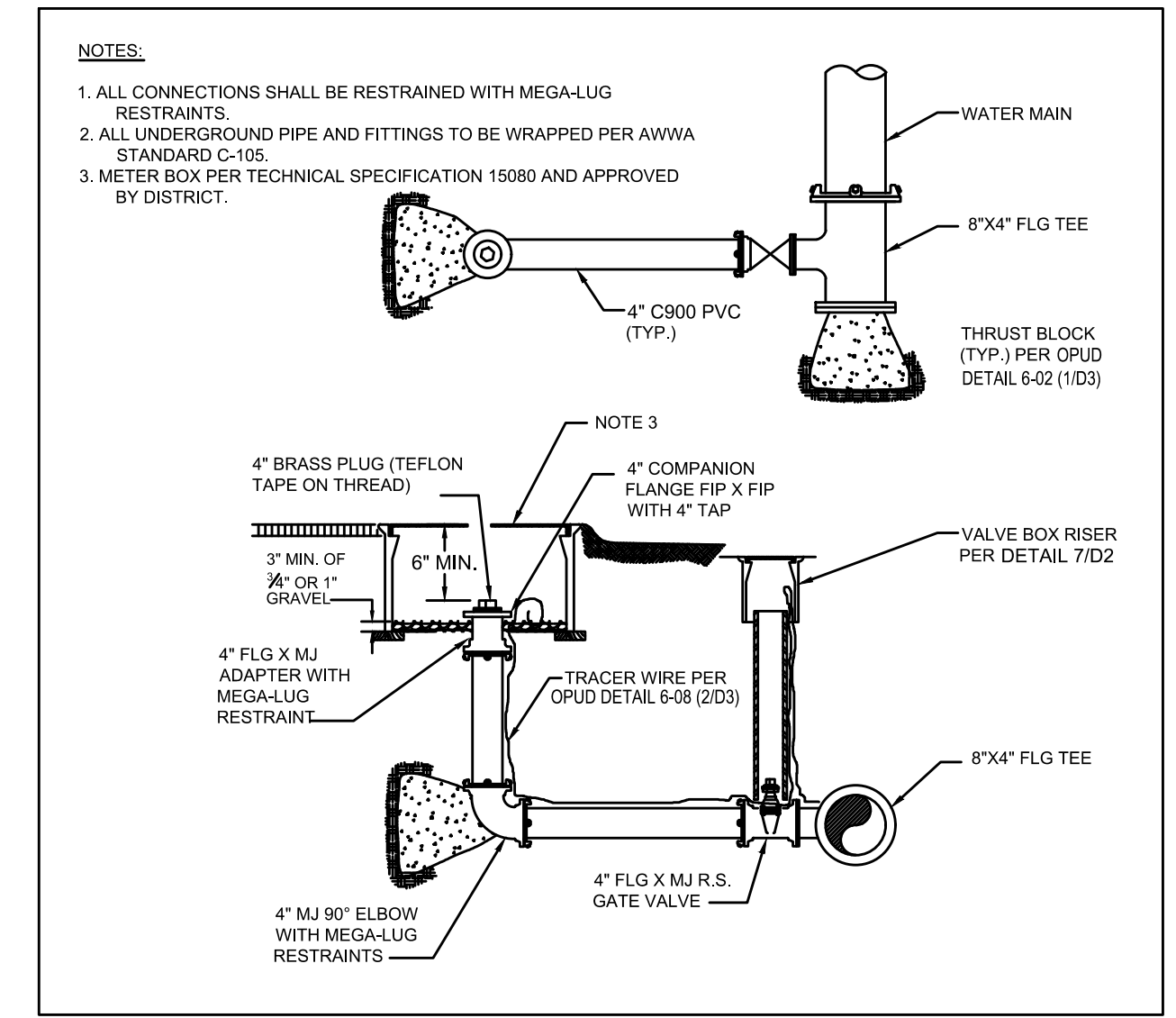
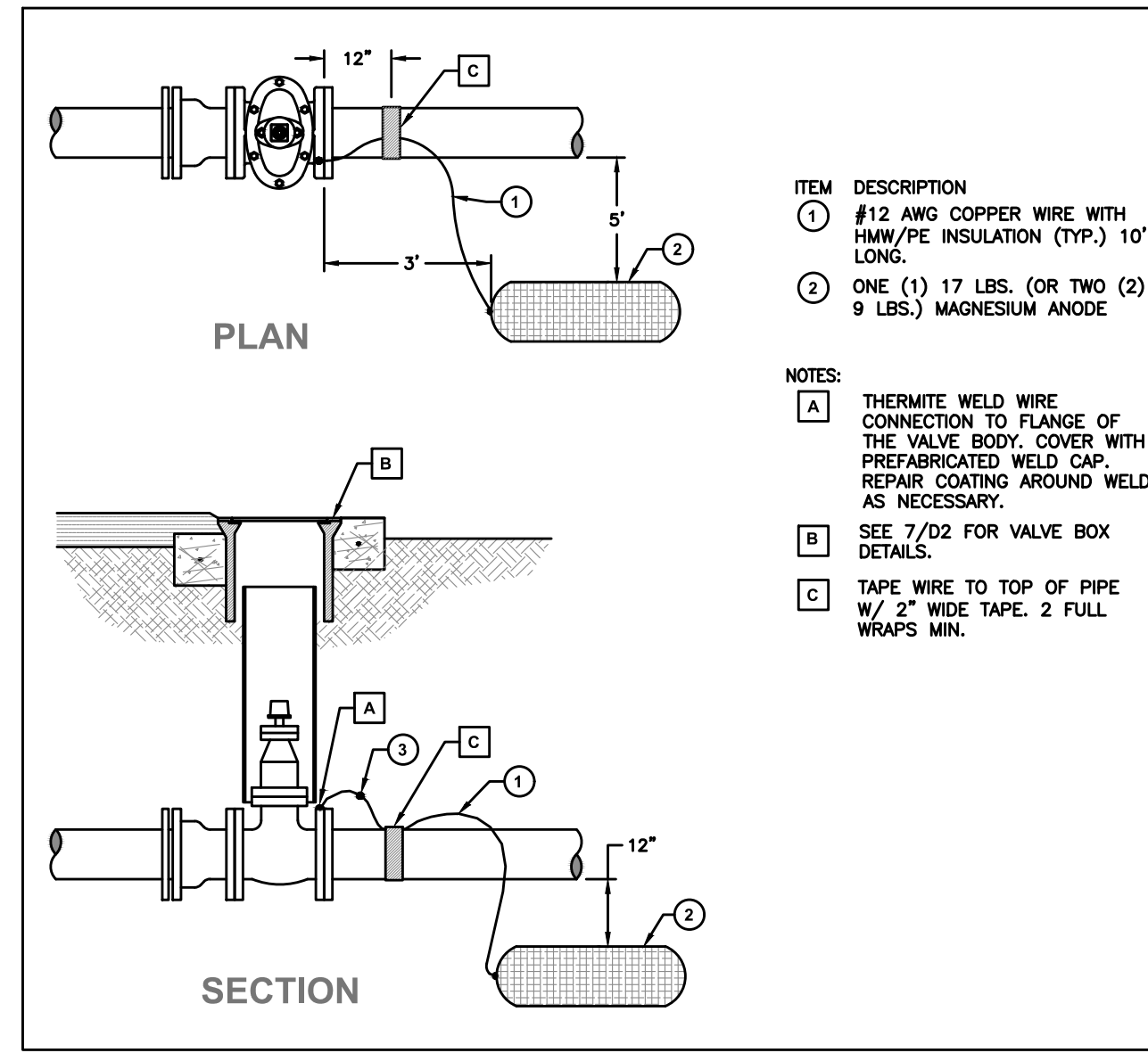
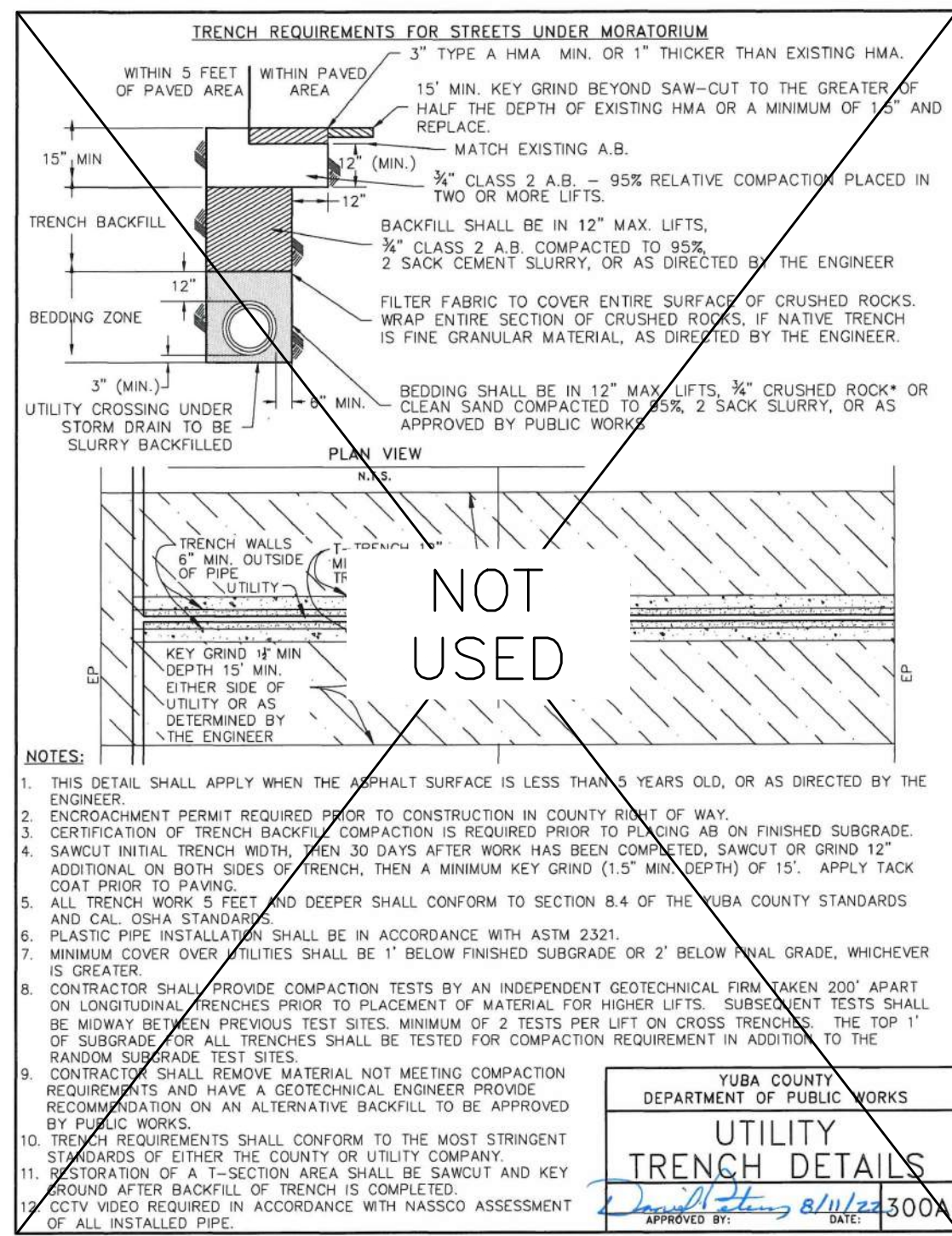
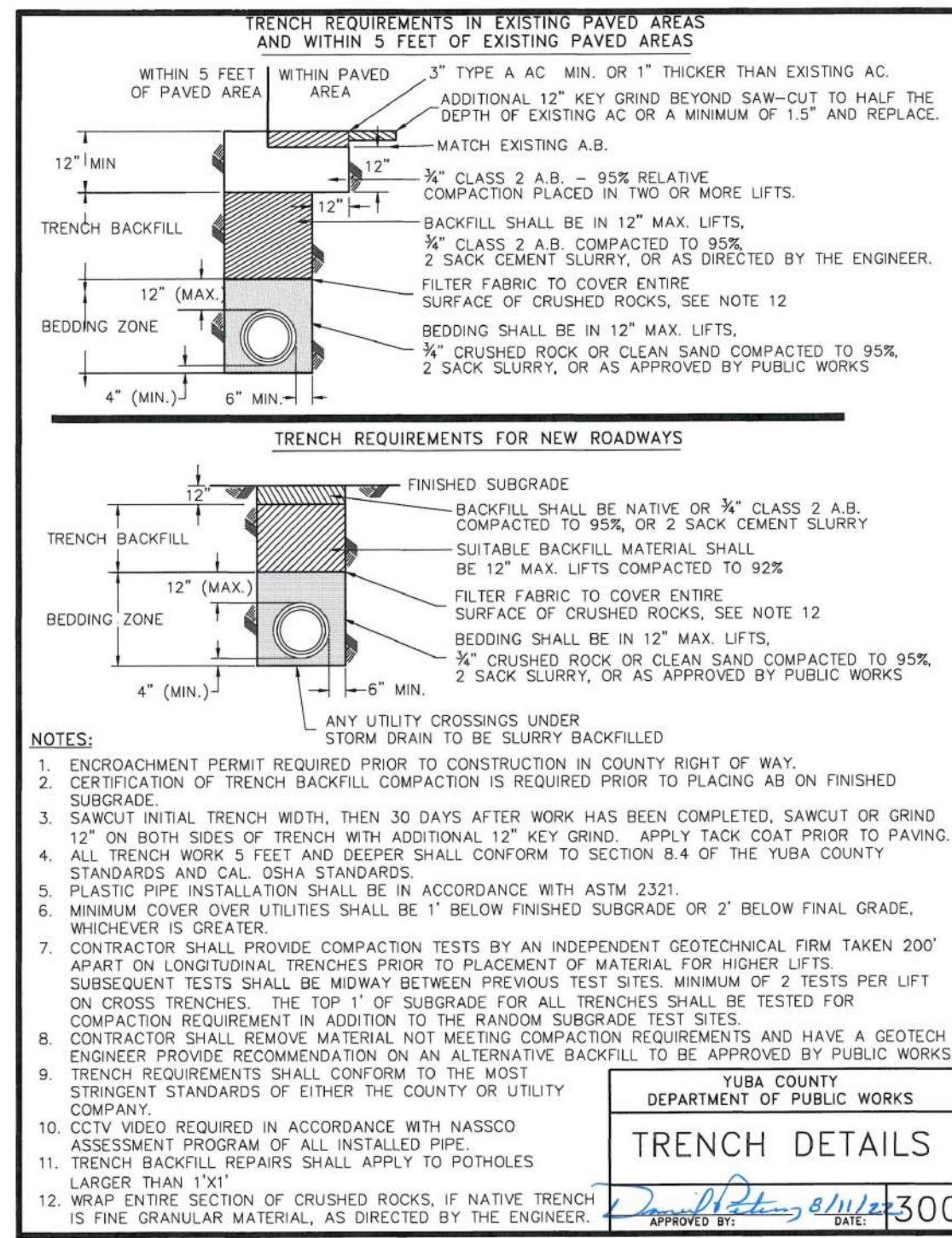
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HISTORIC OLIVEHURST STEEL MAIN REPLACEMENT PROJECT

STANDARD DETAILS 1

DWG D1
SHEET 18
OF 24

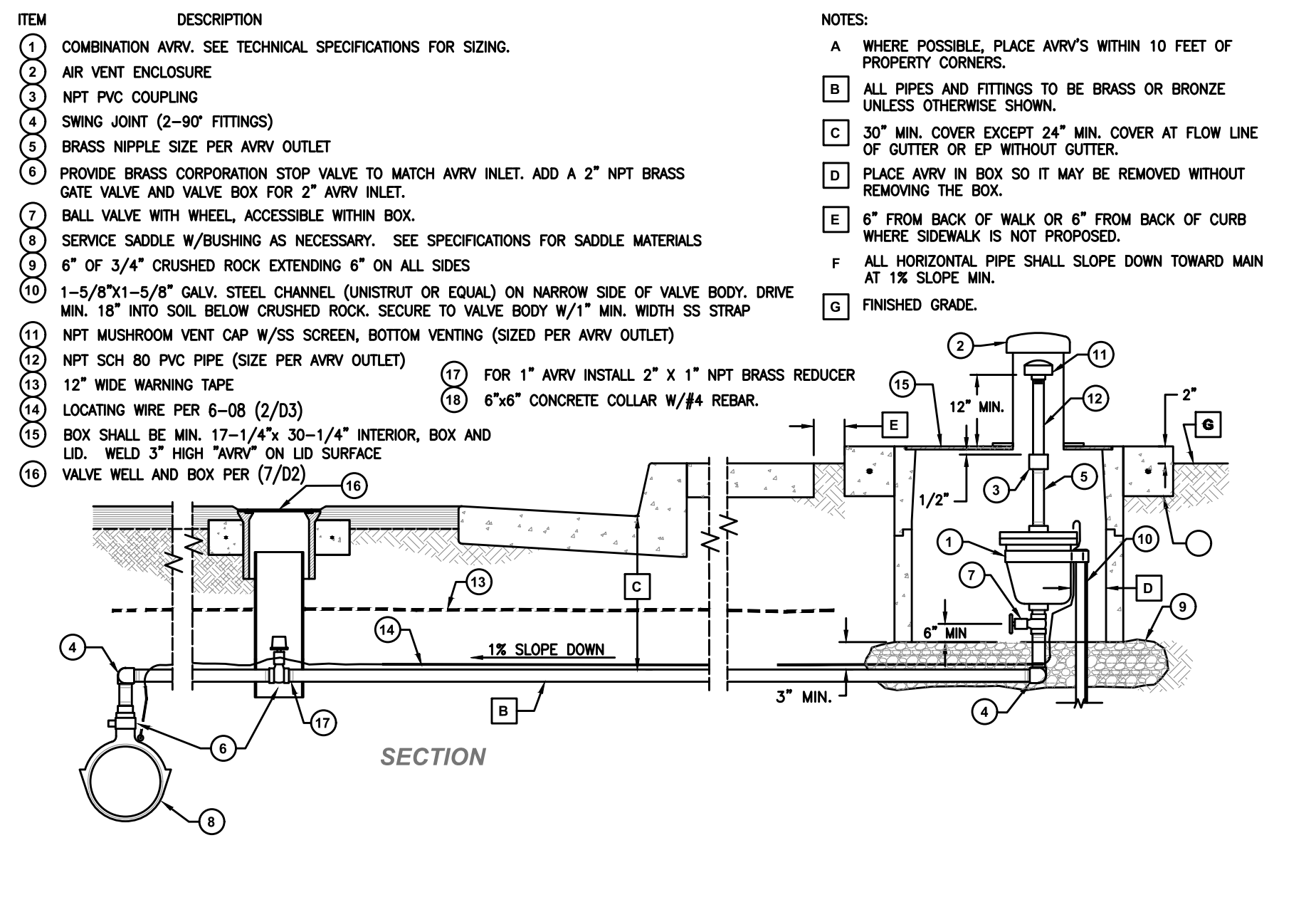


TRENCH DETAIL - STANDARD 1 TYP

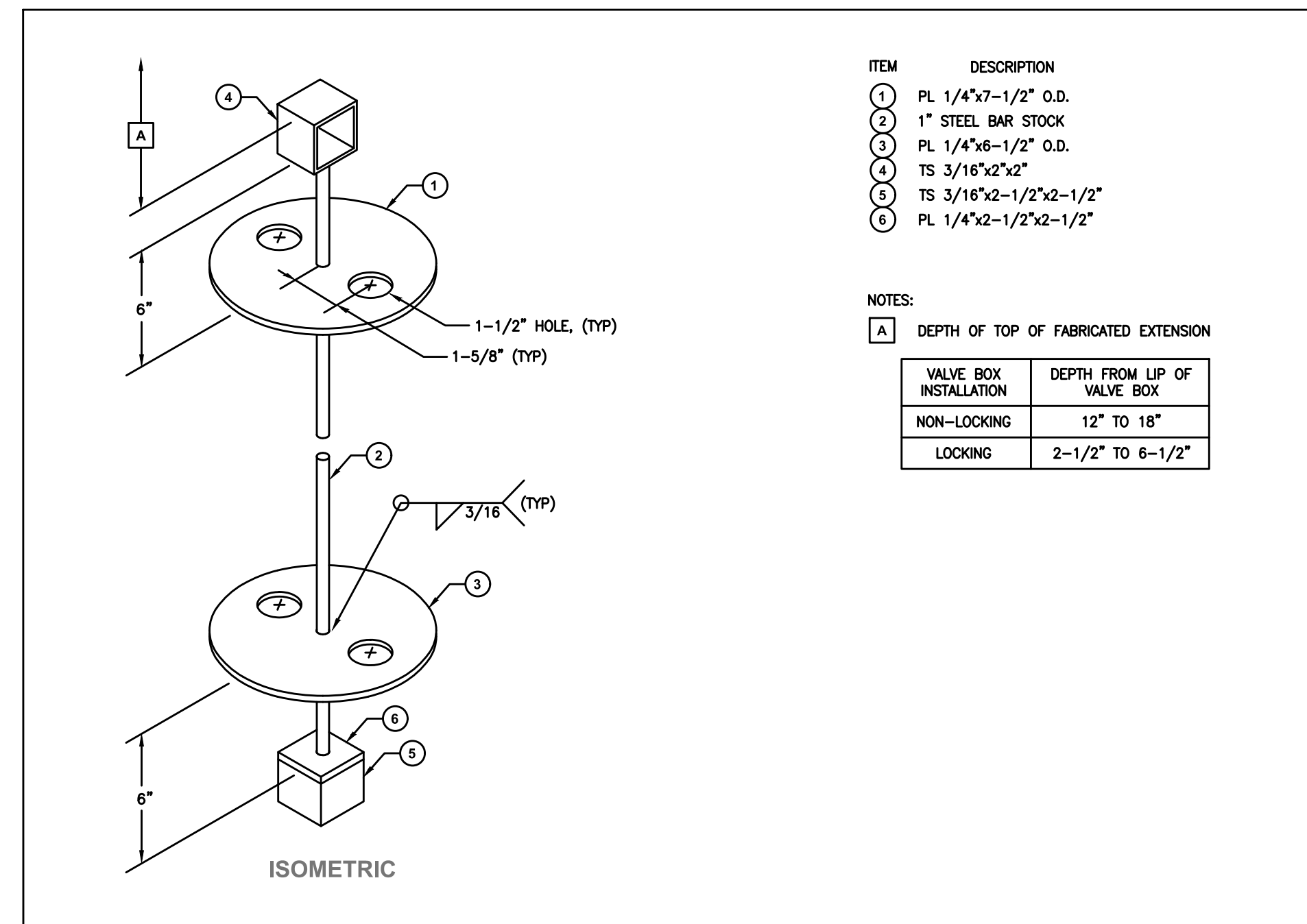
TRENCH DETAIL - MORATORIUM 2 TYP

ANODE DETAIL 3 TYP

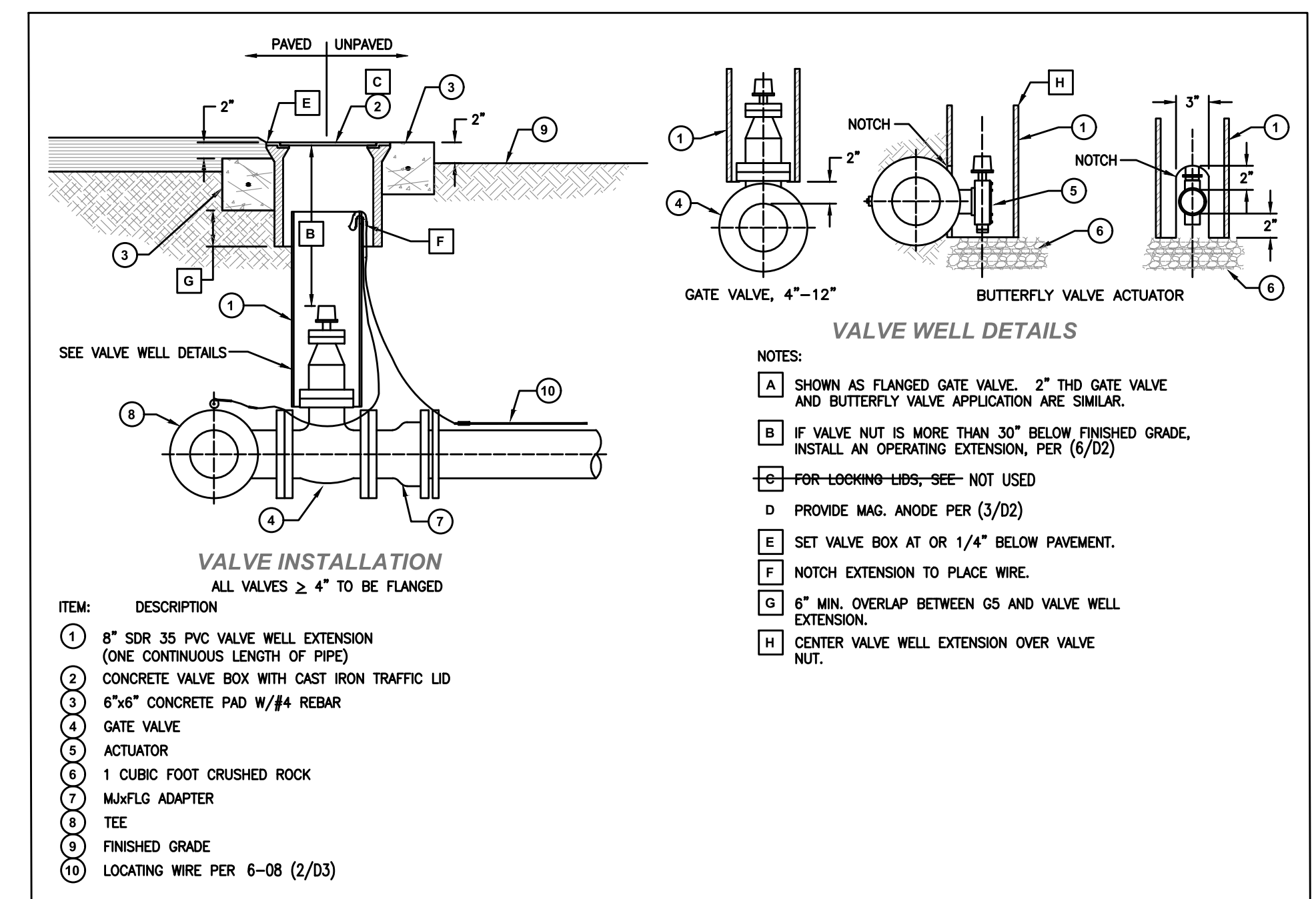
BLOW OFF DETAIL 4 TYP



AIR VACUUM RELEASE VALVE 5 TYP



VALVE OPERATING EXTENSION 6 TYP



VALVE INSTALLATION 7 TYP

20240511.105446 Z:\OPUD-002 HISTORIC WATER INFRASTRUCTURE\DWG - PHASE 1\DWG\OPUD02-TS AND D'S.DWG

REV	DATE	BY	DESCRIPTION

SCALE: NA

WARNING: 0 1/2 1

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DOMENICHELLI & ASSOCIATES

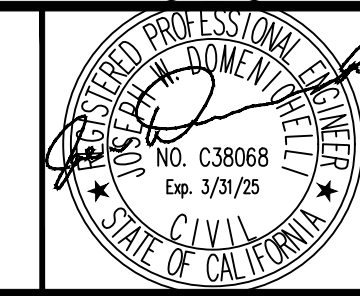
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HISTORIC OLIVEHURST STEEL MAIN REPLACEMENT PROJECT

STANDARD DETAILS 2

DWG	D2
SHEET	19
	OF 24

MINIMUM REQUIRED BEARING AREA IN TOTAL SQUARE FEET

TYPE OF FITTING	90° BEND	45° BEND	22 1/2° BEND 11 1/4° BEND	BEND WITH HANGING RESTRAINT
TYPICAL INSTALLATION				
SIZE OF PIPE				
4"	2	1	1	1 CU. YD.
6"	4	2	1	1 CU. YD.
8"	7	4	2	1.5 CU. YD.
10"	11	6	3	2 CU. YD.
12"	15	8	5	2.5 CU. YD.
18"	32	17	8	3 CU. YD.
TYPICAL INSTALLATION				
SIZE OF PIPE				
4"	2	2 EA	2 EA	2
6"	4	4 EA	4 EA	4
8"	7	7 EA	7 EA	7
10"	11	11 EA	11 EA	11
12"	15	15 EA	15 EA	15
18"	32	32 EA	32 EA	32

- NOTES:**
- THRUST BLOCKS SHALL BE CONSTRUCTED OF CLASS "B" CONCRETE.
 - BEARING AREAS GIVEN ARE FOR CLASS 150 PIPE AT TEST PRESSURE OF 65 P.S.I. IN SOIL WITH 2,000 P.S.F. BEARING CAPACITY. INSTALLATIONS USING DIFFERENT PIPE, TEST PRESSURES, AND/OR SOIL TYPES SHOULD ADJUST AREAS ACCORDINGLY, SUBJECT TO APPROVAL OF DISTRICT ENGINEER.
 - THRUST BLOCKS SHALL BE POURED AGAINST FIRM UNDISTURBED SOIL.
 - PROVIDE A COATING ON ALL BOLTS AND A MINIMUM OF TWO WRAPS OF A 10 MIL POLYETHYLENE ENCASEMENT OF ALL PIPING AND FITTING TO PREVENT CONCRETE FROM DIRECT CONTACT.
 - ALL JOINTS AND BOLTS SHALL BE KEPT CLEAR OF CONCRETE.
 - THRUST BLOCKS SHALL BE PLACED 48 HOURS BEFORE TESTING.
 - ALL PLUGS SHALL BE SECURED WITH THRUST BLOCKS OR JOINT RESTRAINTS.

THRUST BLOCK DETAILS

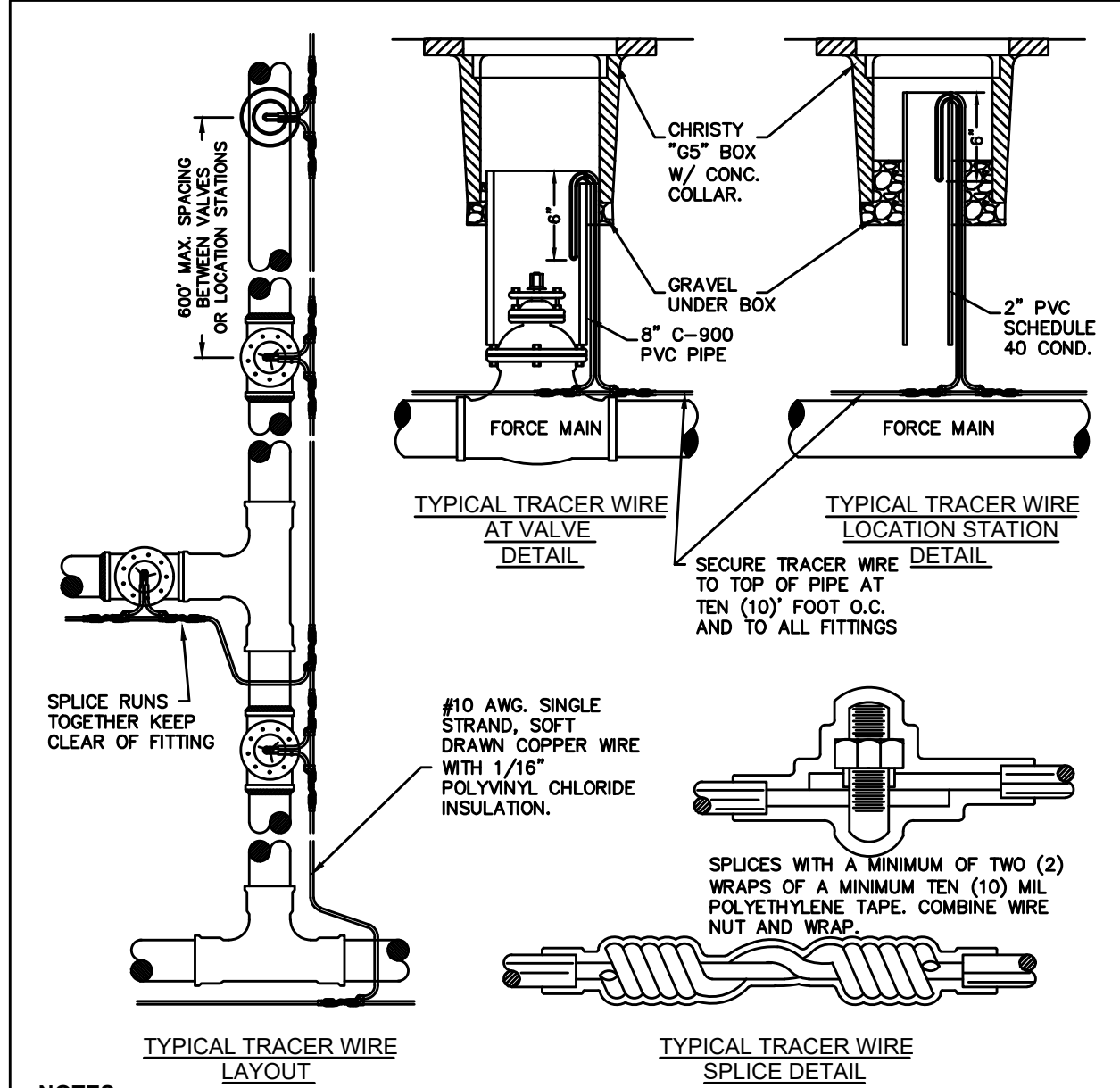
NTS

1
TYP

TEMPORARY 2" BLOWOFF

NTS

5
TYP



- NOTES:**
- ALL TRACER WIRE SHALL BE #10 AWG. SINGLE STRAND, SOFT DRAWN COPPER WIRE WITH 1/16" POLYVINYL CHLORIDE INSULATION (FOR DIRECT BURIAL USE ONLY).
 - ALL TRACER WIRE SHALL BE CONTINUOUS BETWEEN VALVE BOXES AND TRACER WIRE STATIONS.
 - TRACER / LOCATING WIRE SHALL BE LAID ON TOP OF THE LINE, AND SHALL BE SECURED BY TAPE (OR OTHER APPROVED METHOD) TO THE LINE (OR THE POLYETHYLENE ENCASEMENT IF DUCTILE IRON) AT TEN (10) FOOT MAXIMUM INTERVALS AND TAPPED AT ALL FITTINGS. TAPE SHALL BE TEN (10) MIL POLYETHYLENE.
 - ALL SPLICES SHALL BE TIGHT WRAPPED (A MINIMUM OF 12 TIMES TOTAL) AND SOLDERED OR CLAMPED WITH ONE (1) ELECTRICAL SPLIT BOLT CONNECTOR. COVER ALL SPLICES WITH A MINIMUM OF TWO (2) WRAPS OF A MINIMUM TEN (10) MIL POLYETHYLENE TAPE.
 - THE CONTRACTOR SHALL CONDUCT A CONTINUITY TEST ON ALL SPLICES AND BETWEEN THE WIRE RISER LOOPS.
 - A FINAL CONTINUITY TEST SHALL BE DONE IN THE PRESENCE OF THE DISTRICT ENGINEER.
 - BARE TRACER WIRE SHALL NOT TOUCH ANY VALVES OR FITTINGS.

TRACER WIRE DETAIL

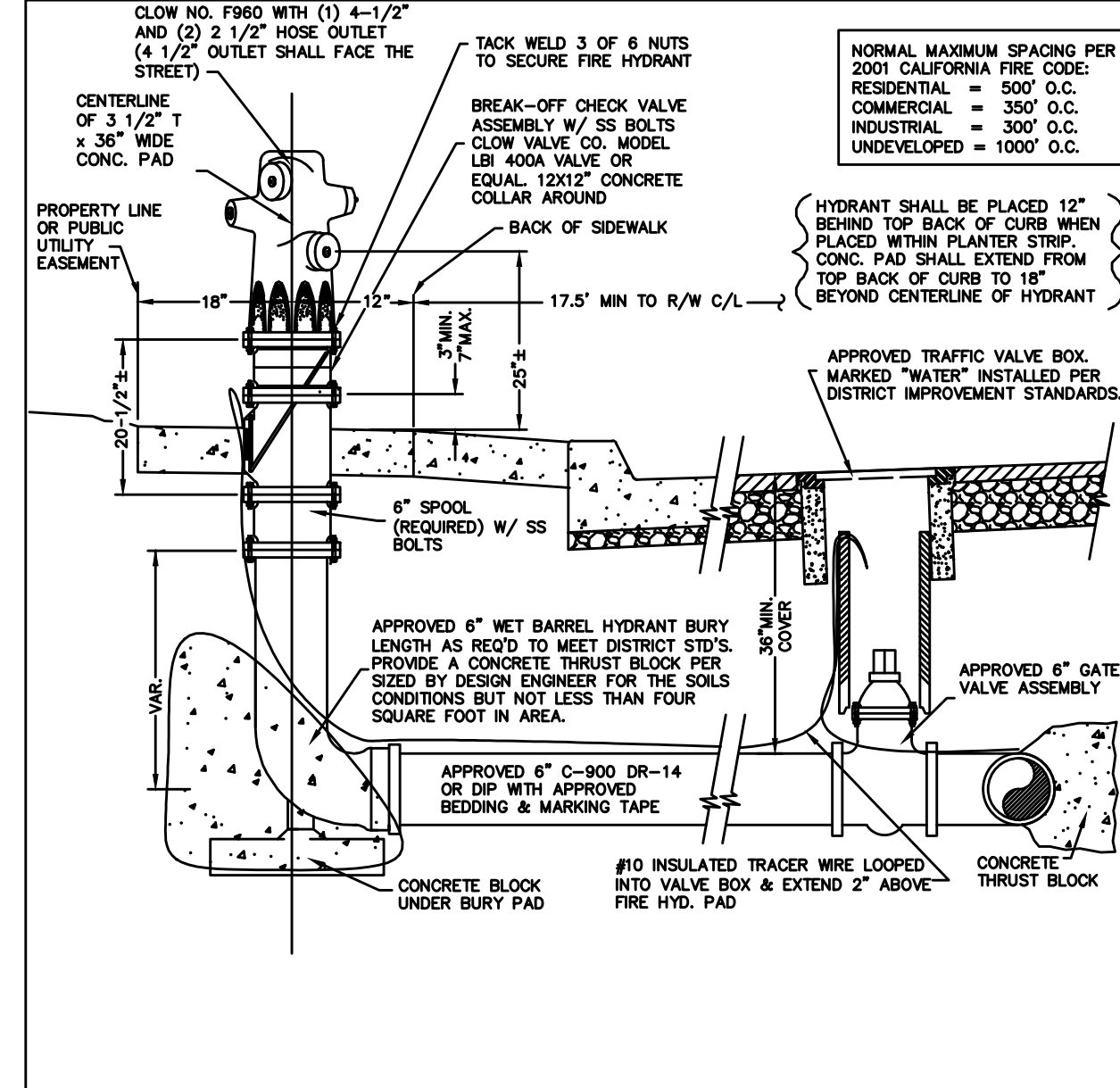
NTS

2
TYP

1" WATER SERVICE

NTS

6
TYP



- NOTES:**
- REFLECTIVE PAVEMENT MARKERS SHALL BE PLACED PER STANDARD DETAIL 8-11, UNLESS INSTRUCTED OTHERWISE BY THE DISTRICT.
 - ALL BOLTS, PIPING AND FITTINGS TO BE DUCTILE IRON, CLASS 150 C-900, BRASS, BRONZE, OR STAINLESS STEEL.
 - THE FIRE HYDRANT SHALL BE PAINTED WITH ONE COAT OF A SOUND METAL PRIMER AND TWO COATS OF # 1147 "BRIGHT SAFETY YELLOW".
 - PROVIDE ANODE BAG FOR GATE VALVE PER 3/02.

FIRE HYDRANT DETAIL

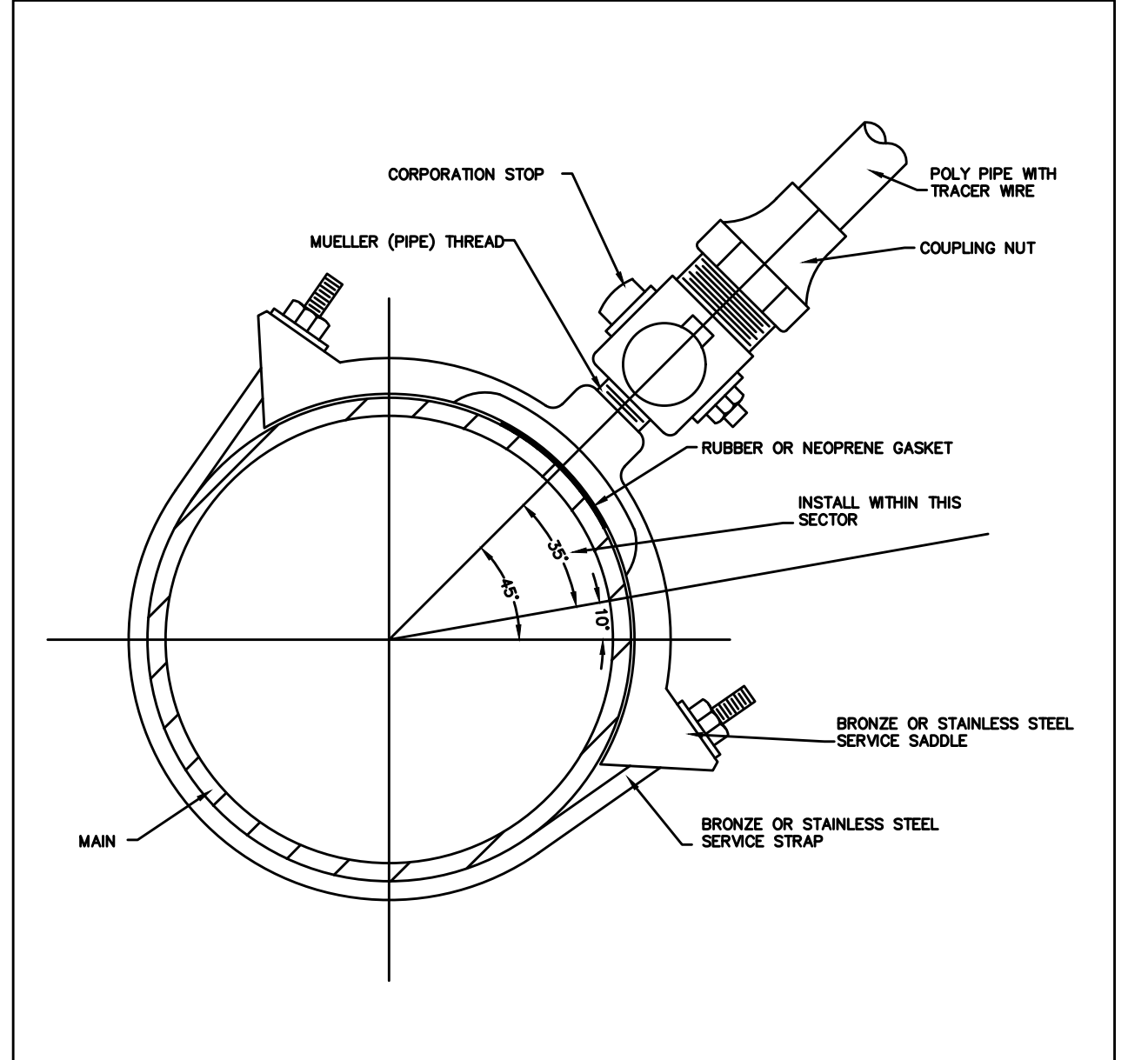
NTS

3
TYP

TYPICAL SERVICE INSTALLATION

NTS

7
TYP



- NOTES:**
- ALL SERVICE MATERIALS AND FITTINGS SHALL BE A.W.W.A. STANDARD, POLY, BRASS, BRONZE OR STAINLESS STEEL. INSTALL MUELLER CO. CORPORATION STOPS.
 - SERVICE TAPS OF THE WATER MAINS SHALL BE DONE TO INSURE THAT CUTTINGS, FILINGS AND PLUGS DO NOT ENTER THE WATER MAINS.
 - 6 MIL POLYETHYLENE WRAP WITH 10 MIL TAPE REQUIRED FOR SADDLE AND CORP STOP.

SERVICE SADDLE DETAIL

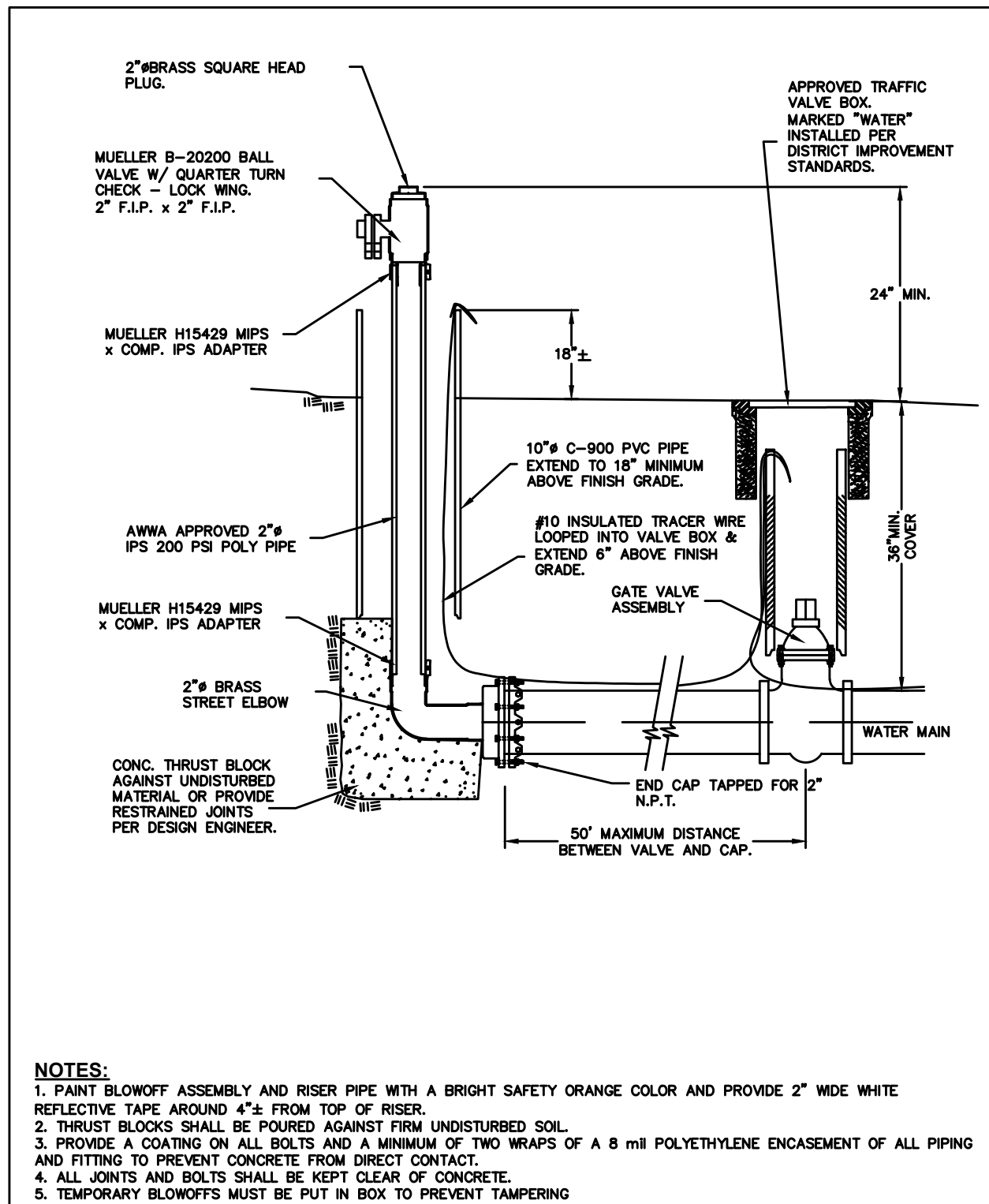
NTS

4
TYP

SINGLE SERVICE DUAL METER

NTS

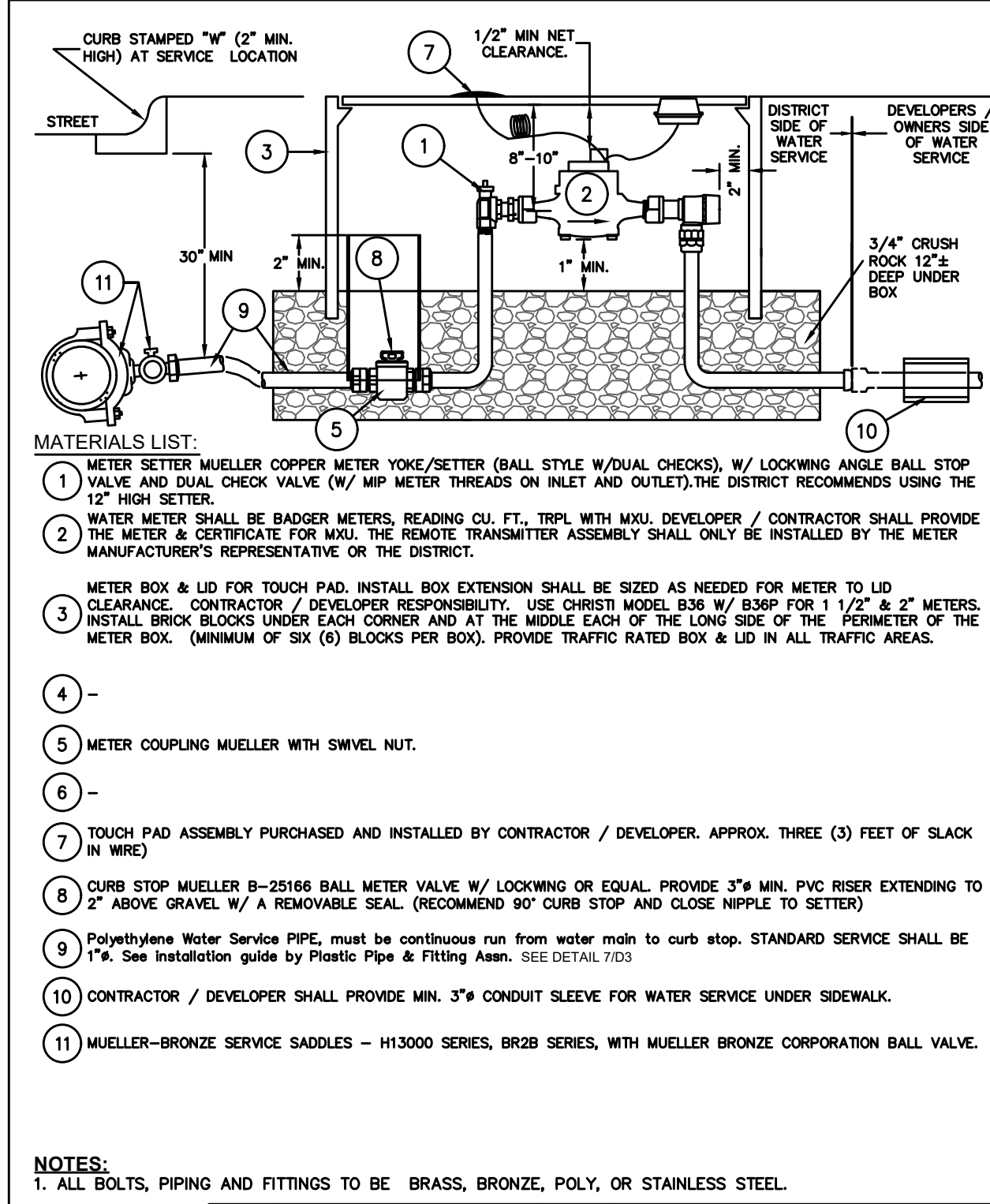
8
TYP



- NOTES:**
- PAINT BLOWOFF ASSEMBLY AND RISER PIPE WITH A BRIGHT SAFETY ORANGE COLOR AND PROVIDE 2" WIDE WHITE REFLECTIVE TAPE AROUND 4" FROM TOP OF RISER.
 - THRUST BLOCKS SHALL BE POURED AGAINST FIRM UNDISTURBED SOIL.
 - PROVIDE A COATING ON ALL BOLTS AND A MINIMUM OF TWO WRAPS OF A 8 MIL POLYETHYLENE ENCASEMENT OF ALL PIPING AND FITTING TO PREVENT CONCRETE FROM DIRECT CONTACT.
 - ALL JOINTS AND BOLTS SHALL BE KEPT CLEAR OF CONCRETE.
 - TEMPORARY BLOWOFFS MUST BE PUT IN BOX TO PREVENT TAMPERING.

10-18	CHANGE SERVICE LINE MATERIAL	JCT	OLIVEHURST PUBLIC UTILITY DISTRICT
5-14	CHANGE METER WTR	JCT	STANDARD 1" WATER SERVICE
9-12	CHANGE SVC. SIZE TO 1 1/2" FIRE SPRINKLER	JCT	
5-05	FORMERLY STD. DET. NO. W-18	SD	John C. Tillotson, P.E.
DATE	REVISIONS	BY	District Engineer

8-16

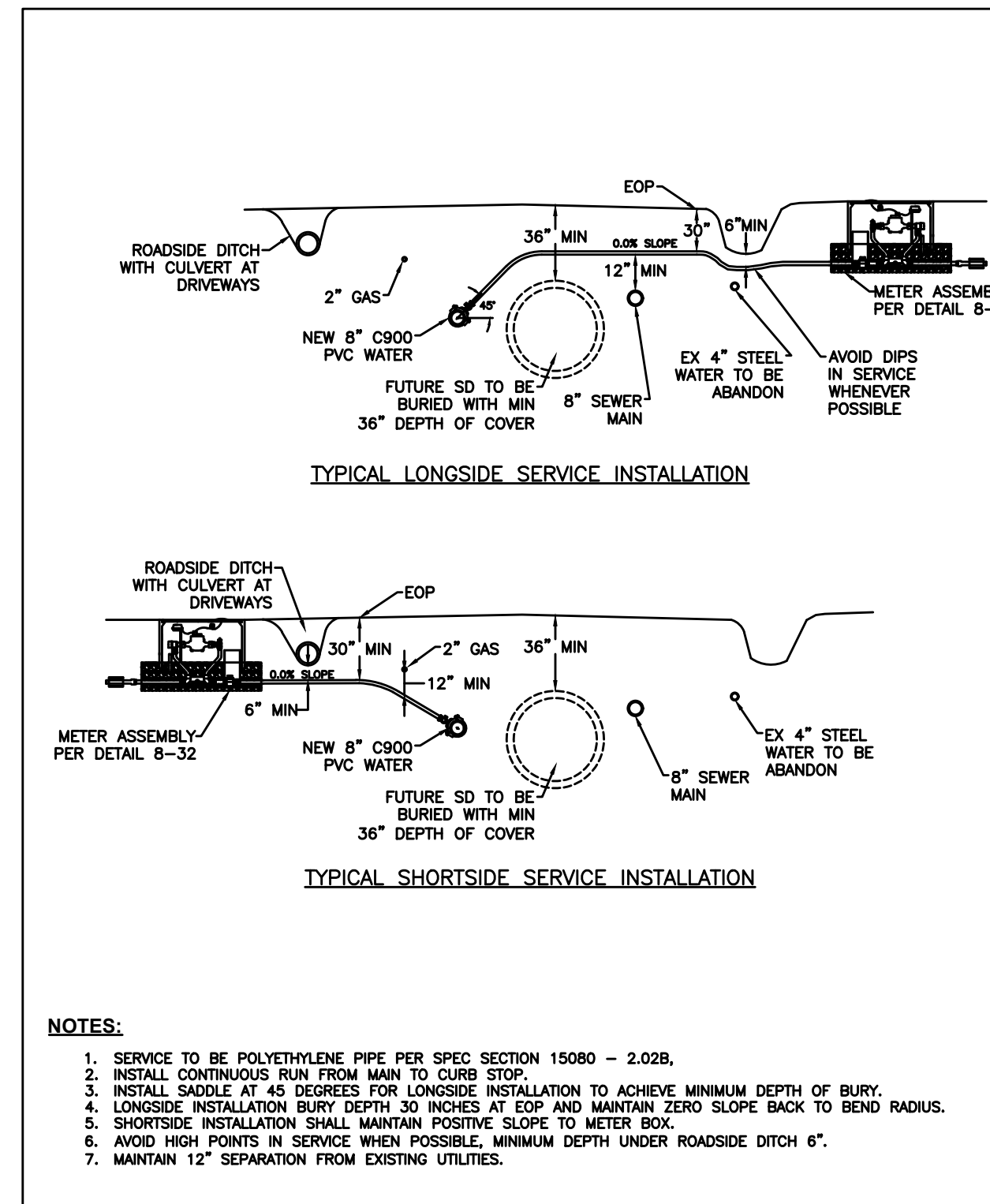


- MATERIALS LIST:**
- METER SETTER MUELLER COPPER METER YOKE/SETTER (BALL STYLE W/DUAL CHECKS), W/ LOCKING ANGLE BALL STOP VALVE AND DUAL CHECK VALVE (W/ MIP METER THREADS ON INLET AND OUTLET), THE DISTRICT RECOMMENDS USING THE 12" HIGH SETTER.
 - THE METER & CERTIFICATE FOR MQU. THE REMOTE TRANSMITTER ASSEMBLY SHALL ONLY BE INSTALLED BY THE METER MANUFACTURER'S REPRESENTATIVE OR THE DISTRICT.
 - METER BOX & LID FOR TOUCH PAD. INSTALL BOX EXTENSION SHALL BE SIZED AS NEEDED FOR METER TO LID CLEARANCE. CONTRACTOR / DEVELOPER RESPONSIBILITY. USE CHRISTY MODEL B36 W/ B36P FOR 1 1/2" & 2" METERS. INSTALL BRICK BLOCKS UNDER EACH CORNER AND AT THE MIDDLE EACH OF THE LONG SIDE OF THE PERIMETER OF THE METER BOX. (MINIMUM OF SIX (6) BLOCKS PER BOX). PROVIDE TRAFFIC RATED BOX & LID IN ALL TRAFFIC AREAS.
 - METER COUPLING MUELLER WITH SWIVEL NUT.
 - TOUCH PAD ASSEMBLY PURCHASED AND INSTALLED BY CONTRACTOR / DEVELOPER. APPROX. THREE (3) FEET OF SLACK IN WIRE)
 - CURB STOP MUELLER B-25166 BALL METER VALVE W/ LOCKING OR EQUAL. PROVIDE 3/4" MIN. PVC RISER EXTENDING TO 2" ABOVE GRAVEL W/ A REMOVABLE SEAL. (RECOMMEND 90° CURB STOP AND CLOSE NIPPLE TO SETTER)
 - Polyethylene Water Service PIPE, must be continuous run from water main to curb stop. STANDARD SERVICE SHALL BE 1". See installation guide by Plastic Pipe & Fitting Assn. SEE DETAIL 7/03
 - CONTRACTOR / DEVELOPER SHALL PROVIDE MIN. 3/4" CONDUIT SLEEVE FOR WATER SERVICE UNDER SIDEWALK.
 - MUELLER-BRONZE SERVICE SADDLES - H13000 SERIES, BR28 SERIES, WITH MUELLER BRONZE CORPORATION BALL VALVE.

- NOTES:**
- ALL BOLTS, PIPING AND FITTINGS TO BE BRASS, BRONZE, POLY, OR STAINLESS STEEL.

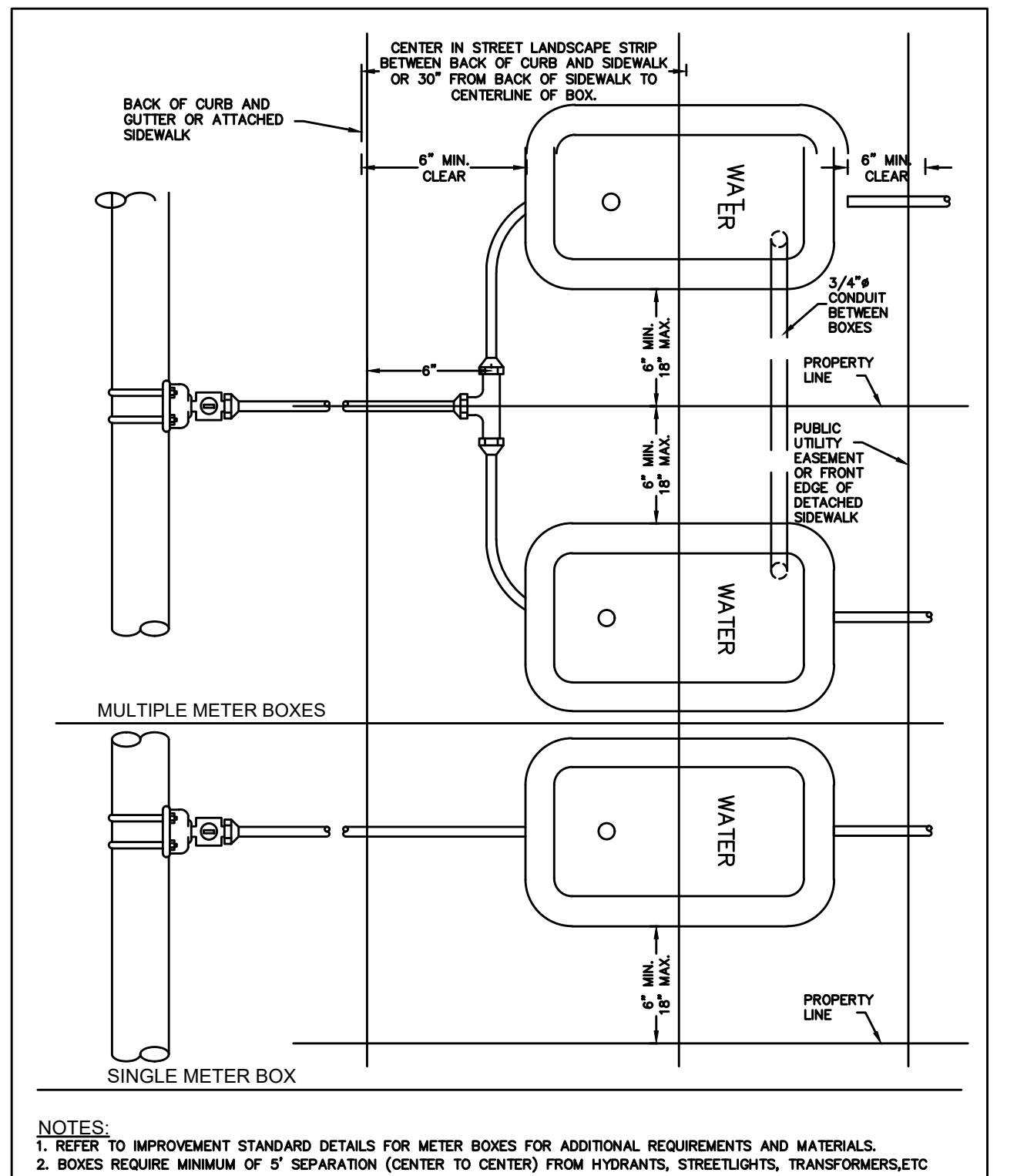
10-18	CHANGE SERVICE LINE MATERIAL	JCT	OLIVEHURST PUBLIC UTILITY DISTRICT
5-14	CHANGE METER WTR	JCT	STANDARD 1" WATER SERVICE
9-12	CHANGE SVC. SIZE TO 1 1/2" FIRE SPRINKLER	JCT	
5-05	FORMERLY STD. DET. NO. W-18	SD	John C. Tillotson, P.E.
DATE	REVISIONS	BY	District Engineer

8-32



- NOTES:**
- SERVICE TO BE POLYETHYLENE PIPE PER SPEC SECTION 15080 - 2.028.
 - INSTALL CONTINUOUS RUN FROM MAIN TO CURB STOP.
 - INSTALL SADDLE AT 45 DEGREES FOR LONGSIDE INSTALLATION TO ACHIEVE MINIMUM DEPTH OF BURIAL.
 - LONGSIDE INSTALLATION BURY DEPTH 30 INCHES AT EOP AND MAINTAIN ZERO SLOPE BACK TO BEND RADII.
 - SHORTSIDE INSTALLATION SHALL MAINTAIN POSITIVE SLOPE TO METER BOX.
 - AVOID HIGH POINTS IN SERVICE WHEN POSSIBLE. MINIMUM DEPTH UNDER ROADSIDE DITCH 6".
 - MAINTAIN 12" SEPARATION FROM EXISTING UTILITIES.

10-18	CHANGE SERVICE LINE MATERIAL	JCT	OLIVEHURST PUBLIC UTILITY DISTRICT
5-14	CHANGE METER WTR	JCT	STANDARD 1" WATER SERVICE
9-12	CHANGE SVC. SIZE TO 1 1/2" FIRE SPRINKLER	JCT	
5-05	FORMERLY STD. DET. NO. W-18	SD	John C. Tillotson, P.E.
DATE	REVISIONS	BY	District Engineer



- NOTES:**
- REFER TO IMPROVEMENT STANDARD DETAILS FOR METER BOXES FOR ADDITIONAL REQUIREMENTS AND MATERIALS.
 - BOXES REQUIRE MINIMUM OF 5' SEPARATION (CENTER TO CENTER) FROM HYDRANTS, STREETLIGHTS, TRANSFORMERS, ETC.

10-18	CHANGE SERVICE LINE MATERIAL	JCT	OLIVEHURST PUBLIC UTILITY DISTRICT
5-14	CHANGE METER WTR	JCT	STANDARD 1" WATER SERVICE
9-12	CHANGE SVC. SIZE TO 1 1/2" FIRE SPRINKLER	JCT	
5-05	FORMERLY STD. DET. NO. W-26	SD	Garry E. Laughlin
DATE	REVISIONS	BY	District Engineer

8-34

20240513.145900 Z:\OPUD-002 HISTORIC WATER INFRASTRUCTURE\DWG - PHASE 1\DWG\OPUD02-TS AND D'S.DWG

SCALE:	WARNING
NA	0 1/2 1
	IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE.
DESIGNED	MATT DOMENICHELLI
DRAWN	MATT DOMENICHELLI
CHECKED	JOE DOMENICHELLI
REV	DATE BY DESCRIPTION

DOMENICHELLI & ASSOCIATES

5180 Golden Foothill Pkwy, Suite 220
El Dorado Hills, CA 95762

Ph: (916) 933-1997
Fax: (916) 933-4778

OPUD
Olivehurst Public Utility District

1970 9th Avenue
Olivehurst, CA 95961

Ph: (530) 743-4657
Fax: (530) 743-3023

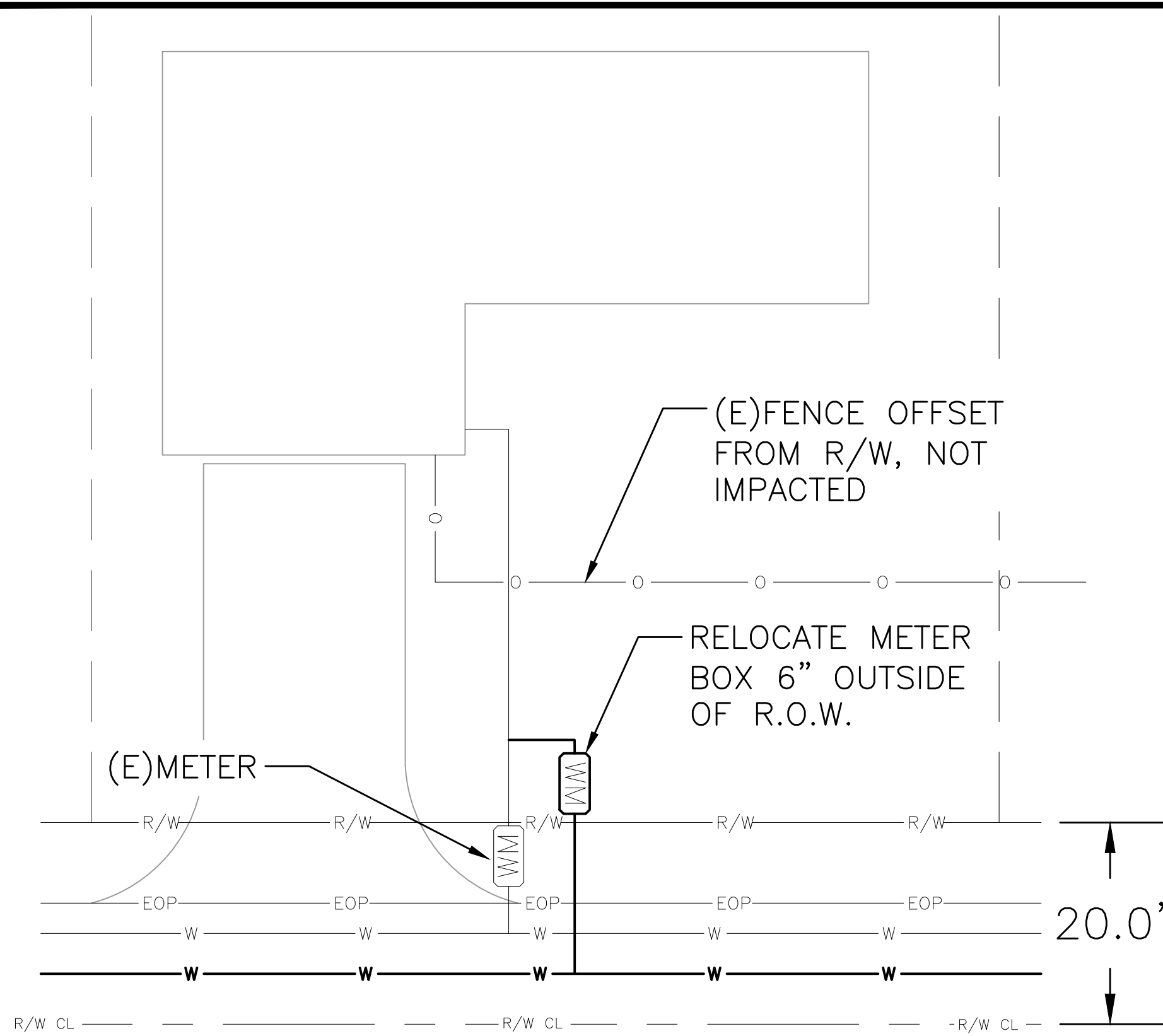
HISTORIC OLIVEHURST STEEL MAIN REPLACEMENT PROJECT

DWG D3
SHEET 20
OF 24

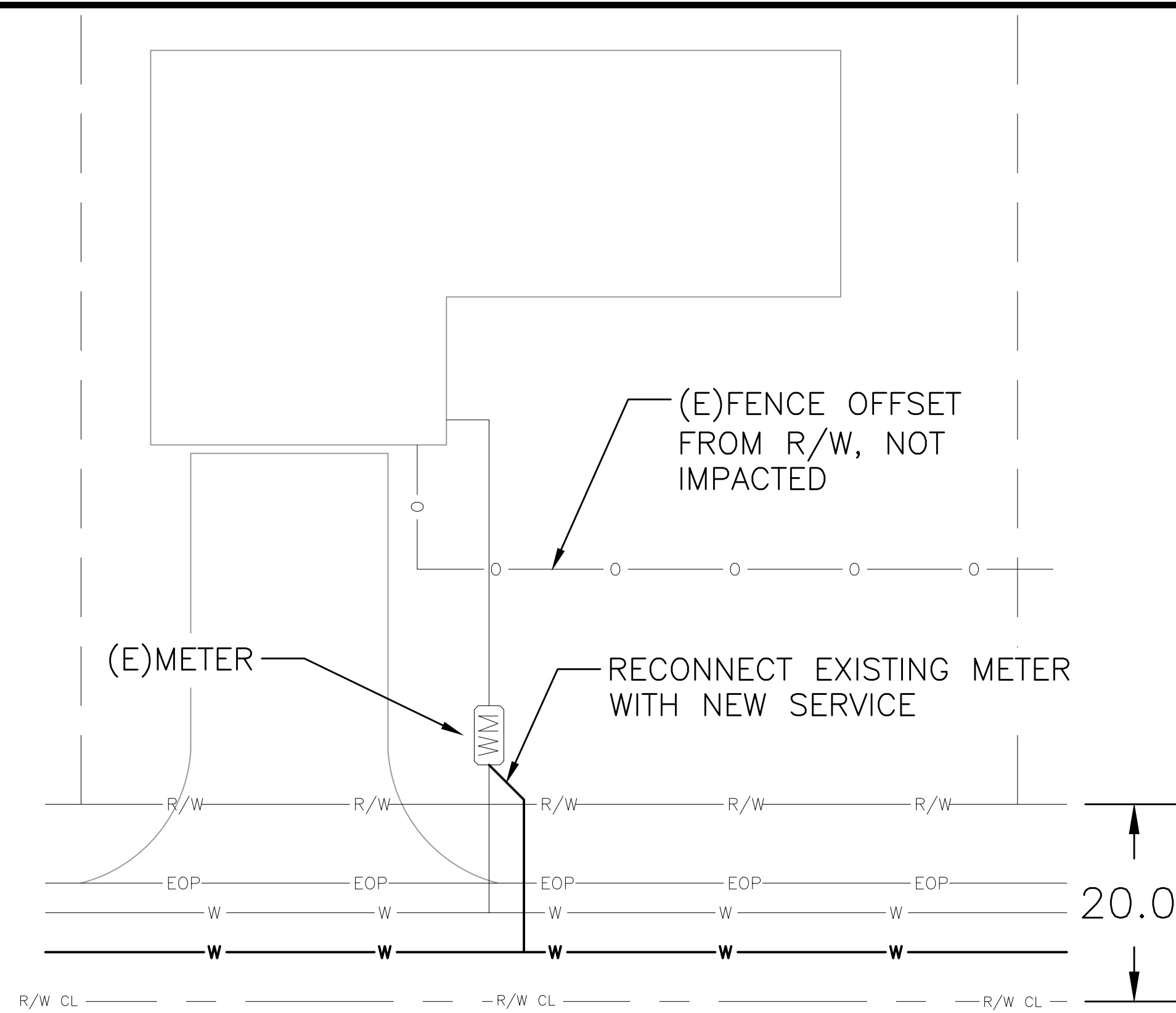
STANDARD DETAILS 3

GENERAL NOTES

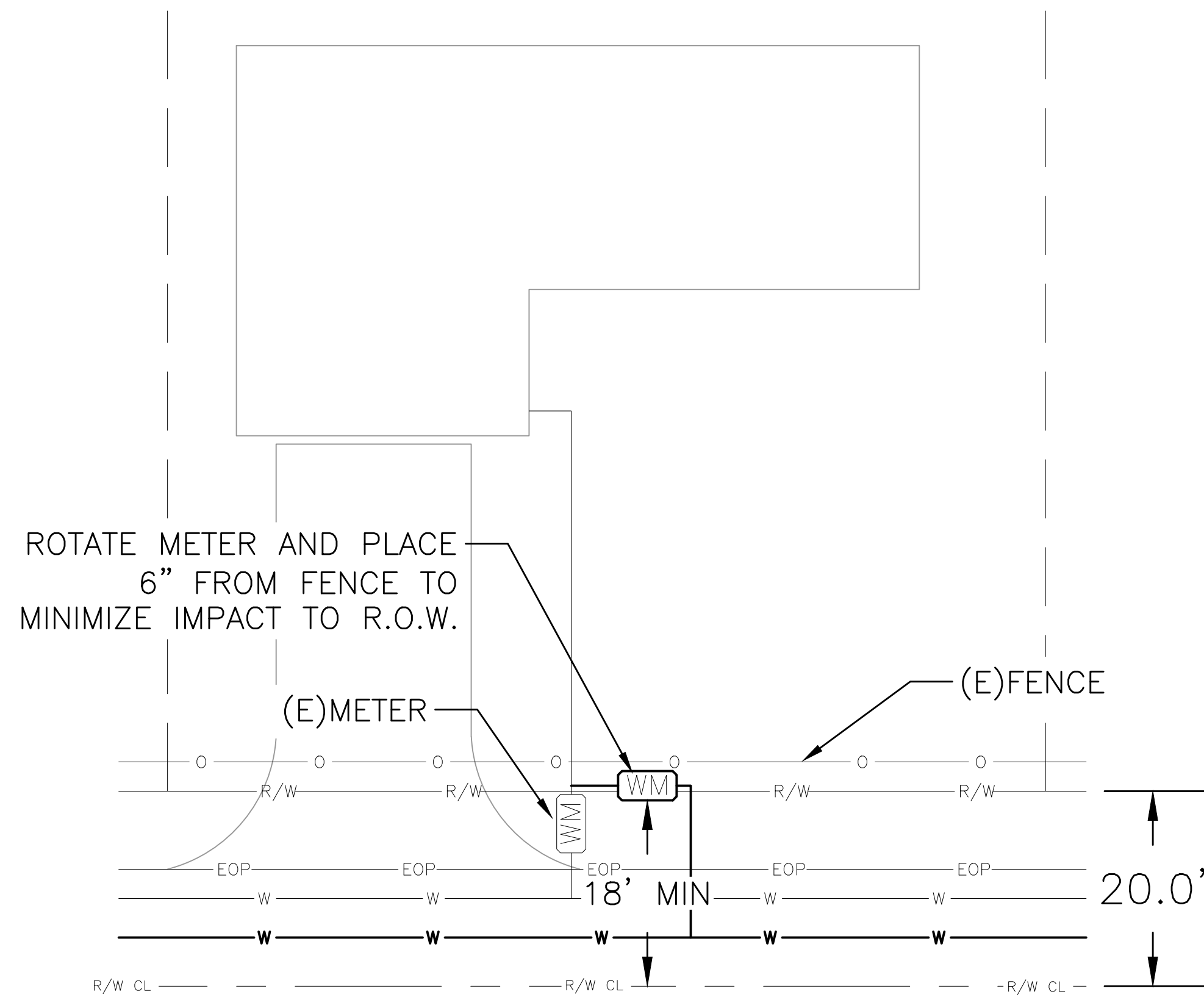
1. WHEN THE EXISTING METER IS LOCATED INSIDE THE R.O.W. RELOCATE THE METER BOX 6" OUTSIDE THE R.O.W. (DETAIL 1).
2. WHEN THE EXISTING METER IS LOCATED OUTSIDE OF THE R.O.W. RECONNECT WITH NEW SERVICE (DETAILS 2 & 4).
3. WHEN THE EXISTING METER IS LOCATED INSIDE THE R.O.W. AND A FENCE IS PRESENT AT OR BEYOND THE R.O.W. AVOID MOVING THE METER BEHIND THE FENCE. ROTATE THE METER BOX AND PLACE METER BOX 6" FROM THE FENCE TO MINIMIZE ENCROACHMENT INTO THE R.O.W. (DETAIL 3).
4. WHEN THE EXISTING METER IS LOCATED INSIDE THE R.O.W. AND A FENCE IS ALSO INSIDE THE R.O.W. OBSTRUCTING THE RELOCATION, EXISTING BOX TO REMAIN, RECONNECT WITH NEW SERVICE (DETAIL 5).
5. ALL RELOCATED METER BOXES MUST BE MINIMUM 18' FROM R.O.W. CENTERLINE.
6. ROAD CENTERLINE DOES NOT ALIGN WITH R.O.W. CENTERLINE. R.O.W. CENTERLINE AND R.O.W. LINES TO BE CLEARLY MARKED BY CONTRACTOR FOR THE PURPOSE OF METER LOCATION INSPECTION.



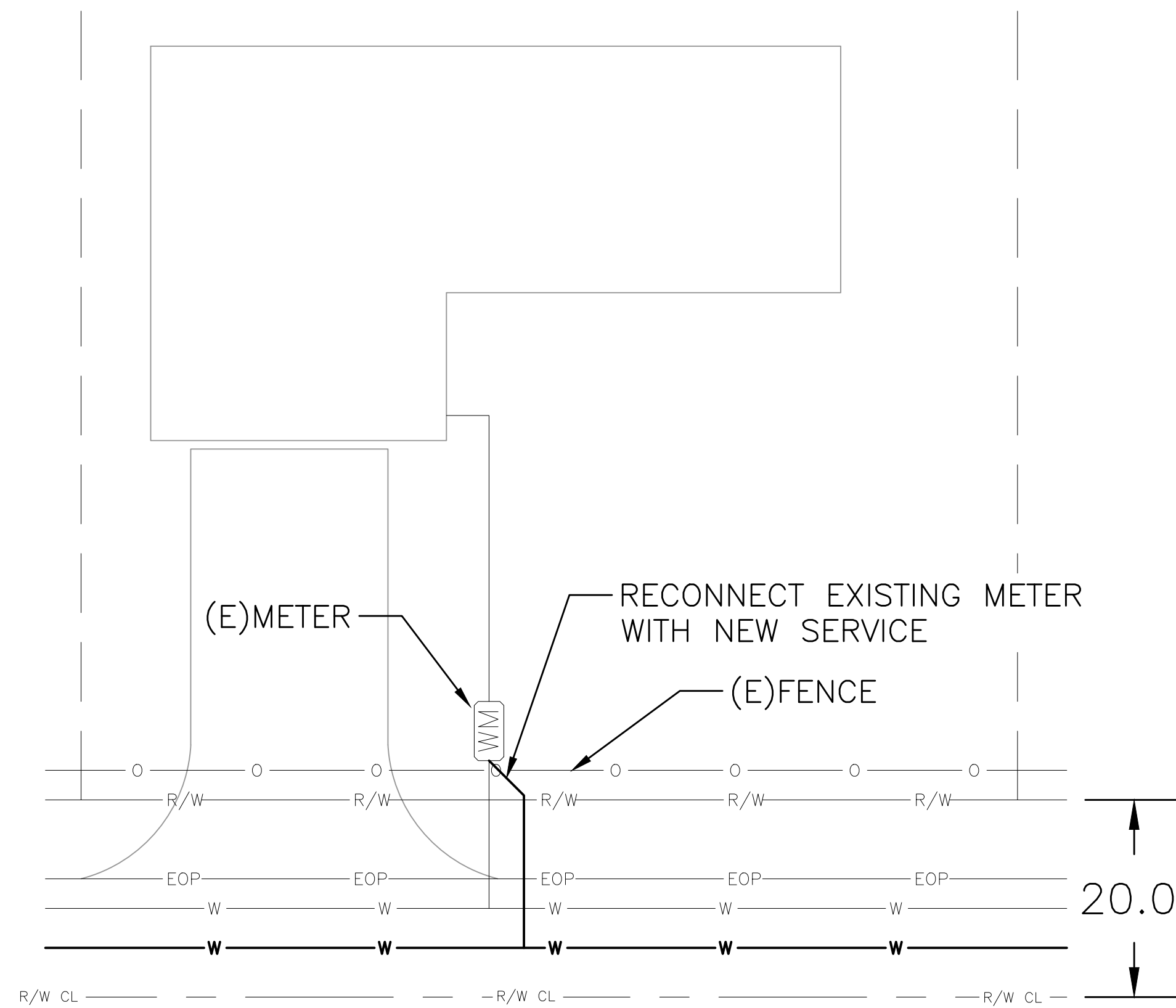
RELOCATE METER OUTSIDE ROW 1
NTS TYP



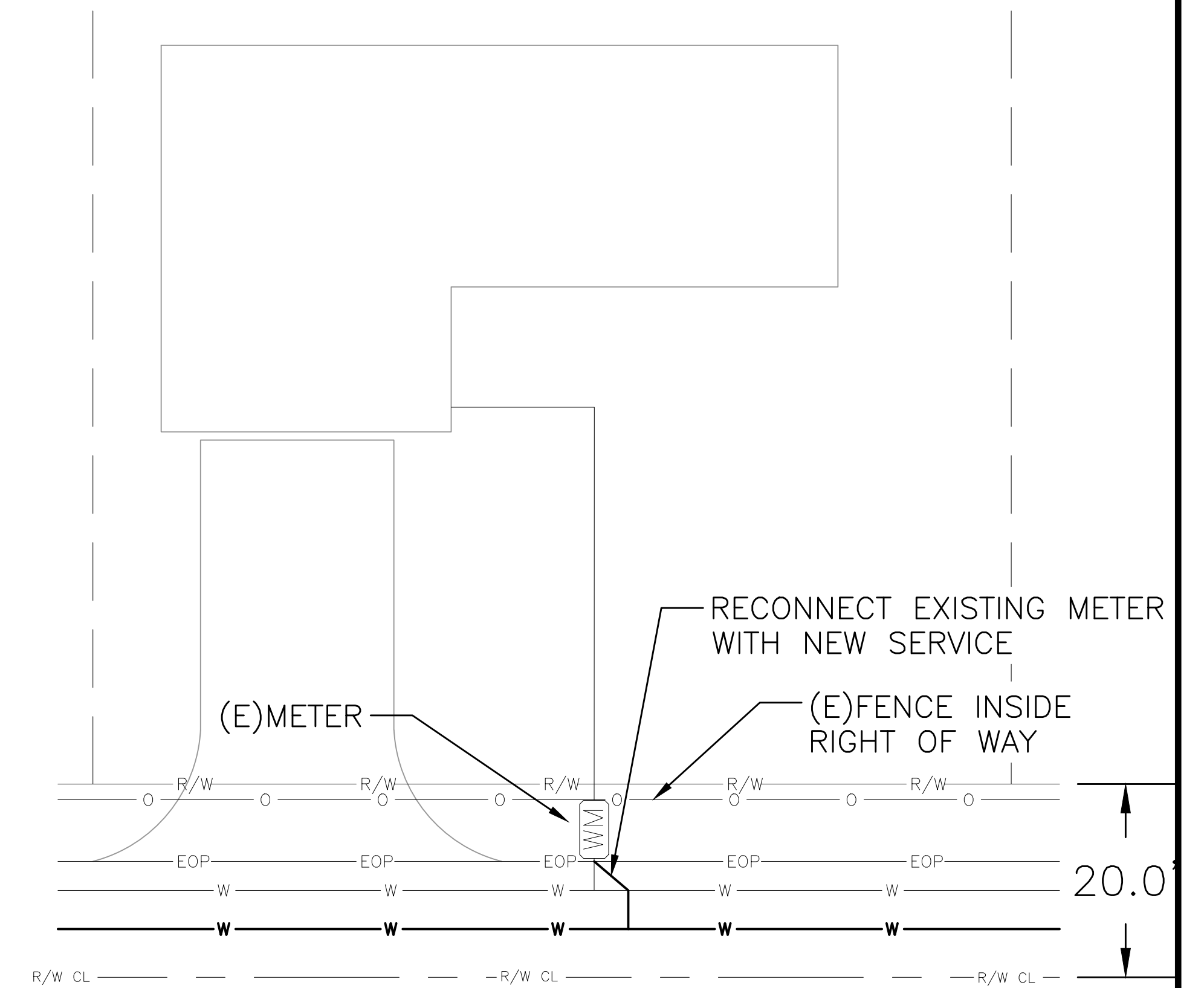
RECONNECT METER OUTSIDE ROW 2
NTS TYP



RELOCATE METER AT FENCE 3
NTS TYP



RECONNECT METER BEHIND FENCE 4
NTS TYP



METER CANT BE RELOCATED 5
NTS TYP

20240513_145900 Z:\OPUD-002 HISTORIC WATER INFRASTRUCTURE\DWG - PHASE 1\DWG\OPUD02-TS AND D'S.DWG

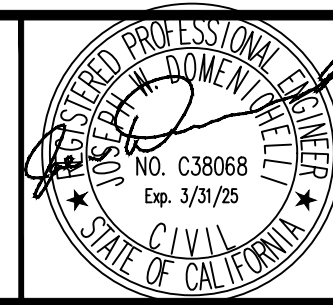
REV	DATE	BY	DESCRIPTION

SCALE:	WARNING
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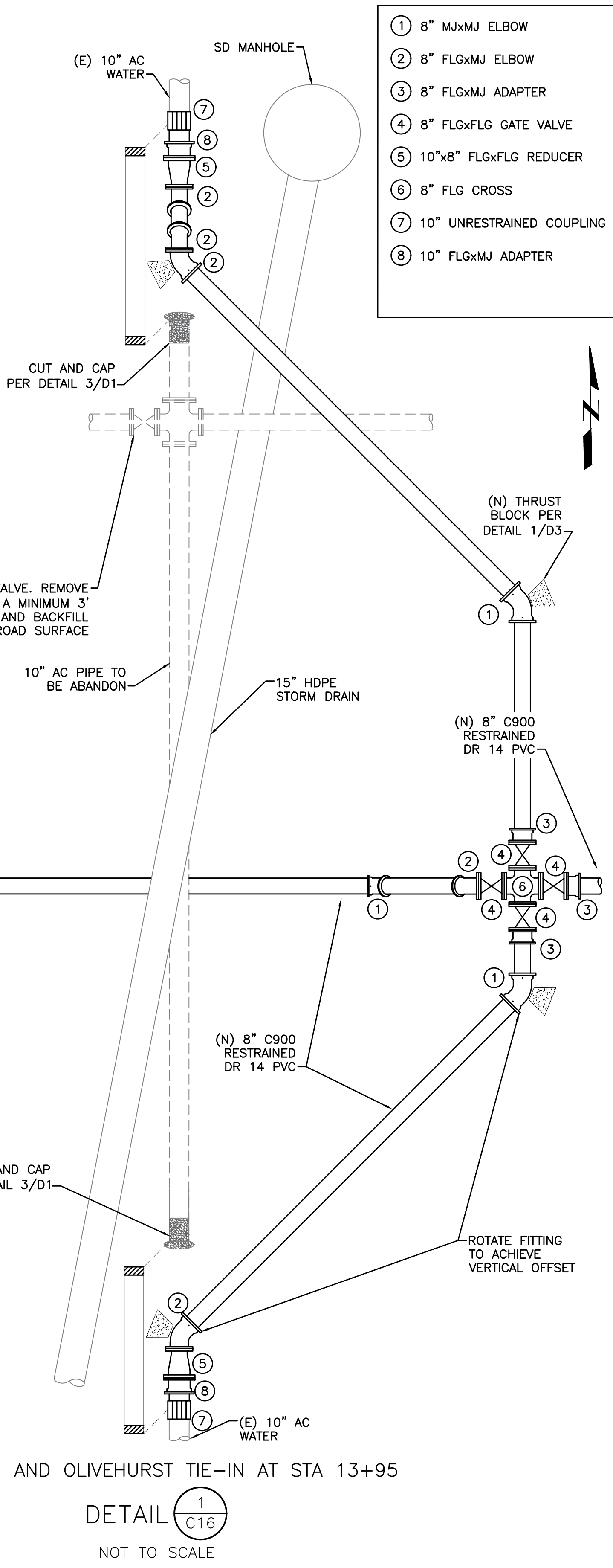


HISTORIC OLIVEHURST STEEL MAIN REPLACEMENT PROJECT
NEW SERVICE AND METER DETAILS

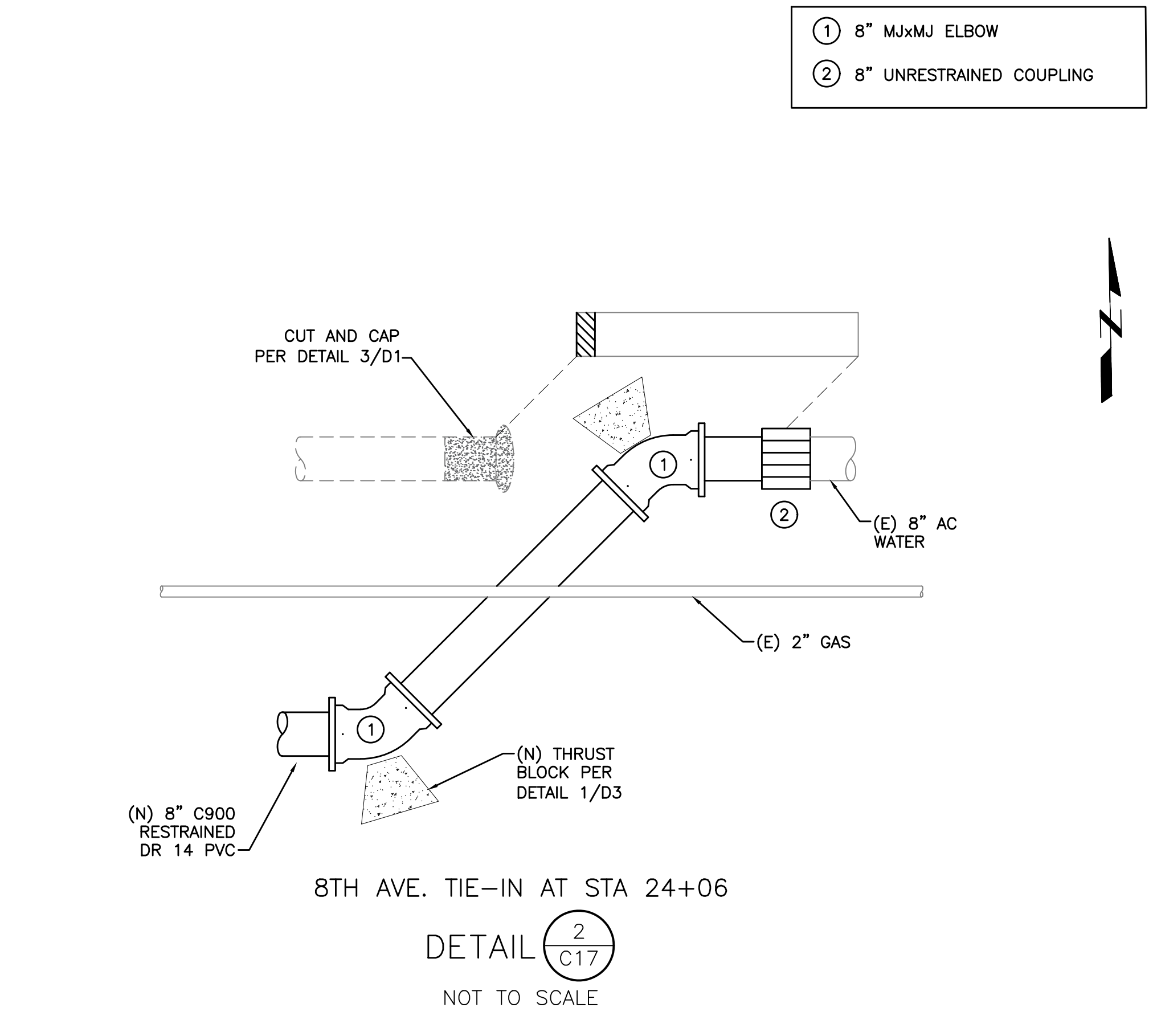
DWG	D4
SHEET	20
OF 24	

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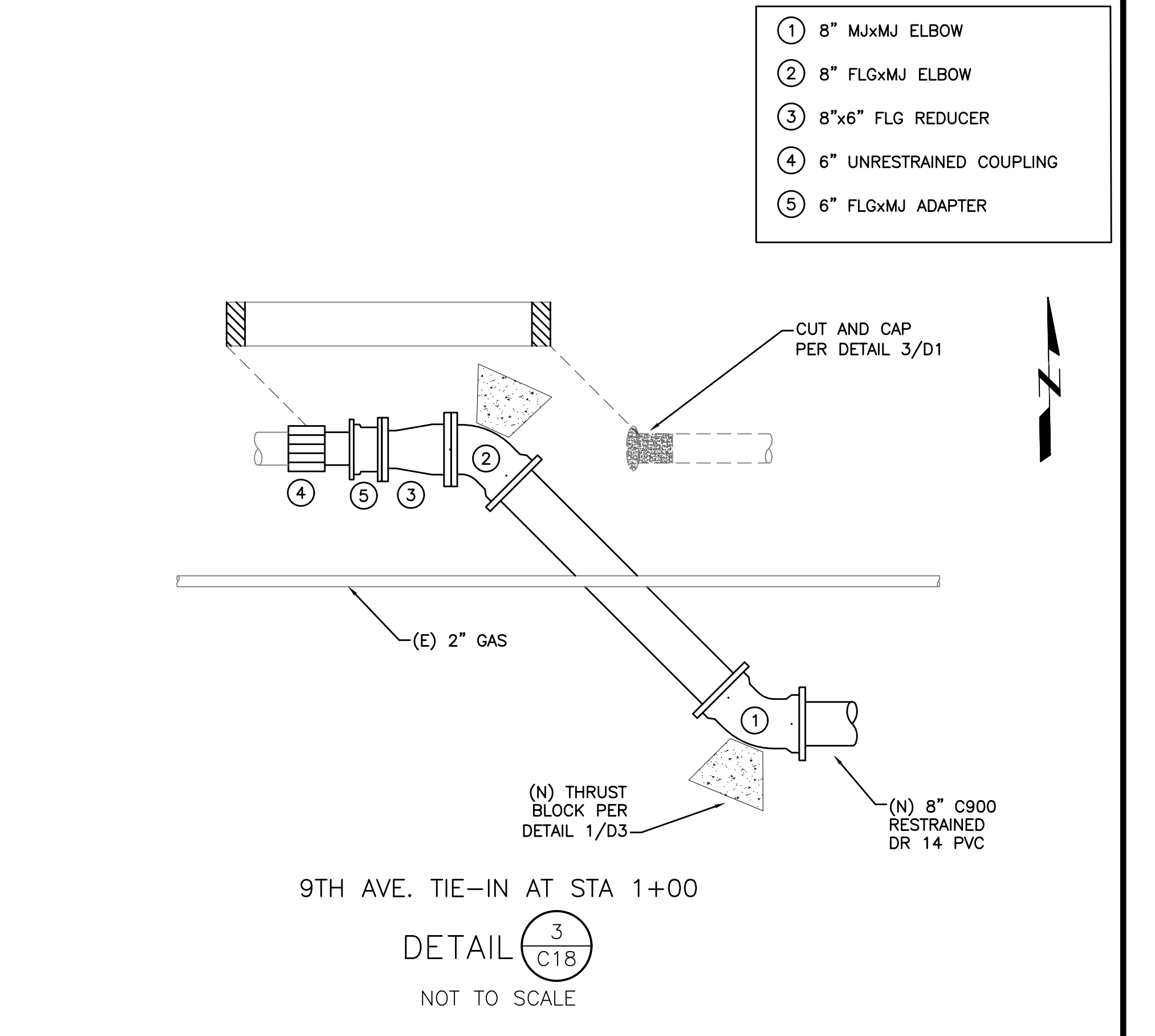
- GENERAL NOTES (APPLICABLE TO ALL DETAILS):**
1. NOT ALL UTILITIES BEING CROSSED OR IN THE VICINITY OF THE TIE-IN ARE SHOWN. CONTRACTOR MUST POTHOLE ALL UTILITIES AND NOTIFY THE ENGINEER OF ANY CONFLICTS.
 2. ALL MJ FITTINGS ARE TO BE FULLY RESTRAINED WITH MEGALUGS. ALL PVC PIPE TO BE CLASS 305 (DR14).
 3. CONTRACTOR TO POTHOLE AND VERIFY (E) PIPE DIAMETER, (E) PIPE MATERIAL AND EXISTING CONFIGURATION PRIOR TO ORDERING MATERIALS FOR TIE-INS AND ABANDONMENTS.
 4. CONNECTION TO ACP (IF PRESENT) WILL REQUIRE A NON-RESTRAINED PIPE COUPLING AND ADDITIONAL THRUST BLOCKS NOT SHOWN. CONTRACTOR TO COORDINATE WITH CITY INSPECTOR.
 5. FOR THE PURPOSE OF BIDDING, CONTINUATION OF NEW PVC TO THE EXTENT OF THE RESTRAINED LENGTH (NOT SHOWN) IS TO BE CONSIDERED PART OF EACH DETAIL. SEE M&P DESCRIPTIONS.



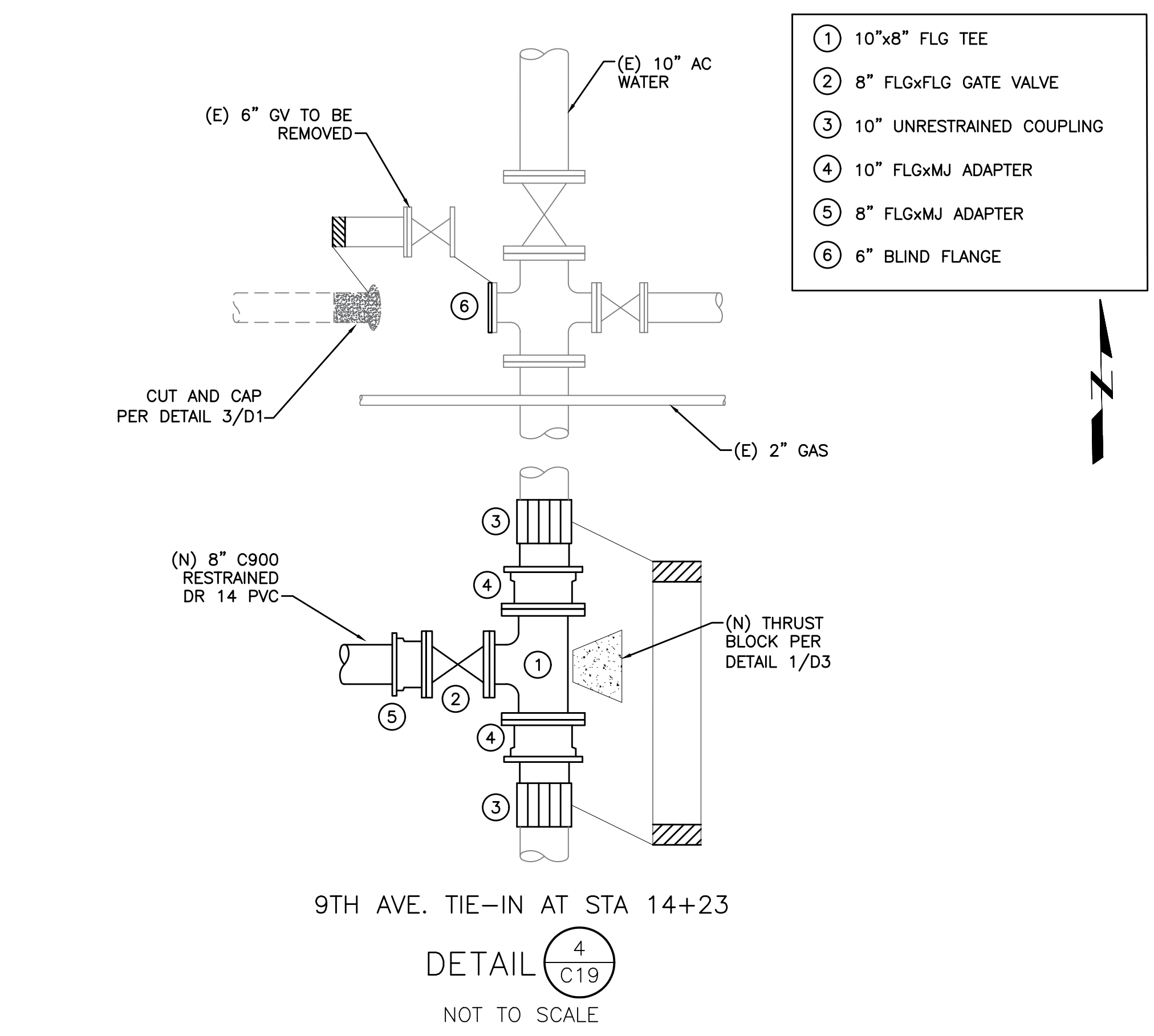
DETAIL $\frac{1}{C16}$
NOT TO SCALE



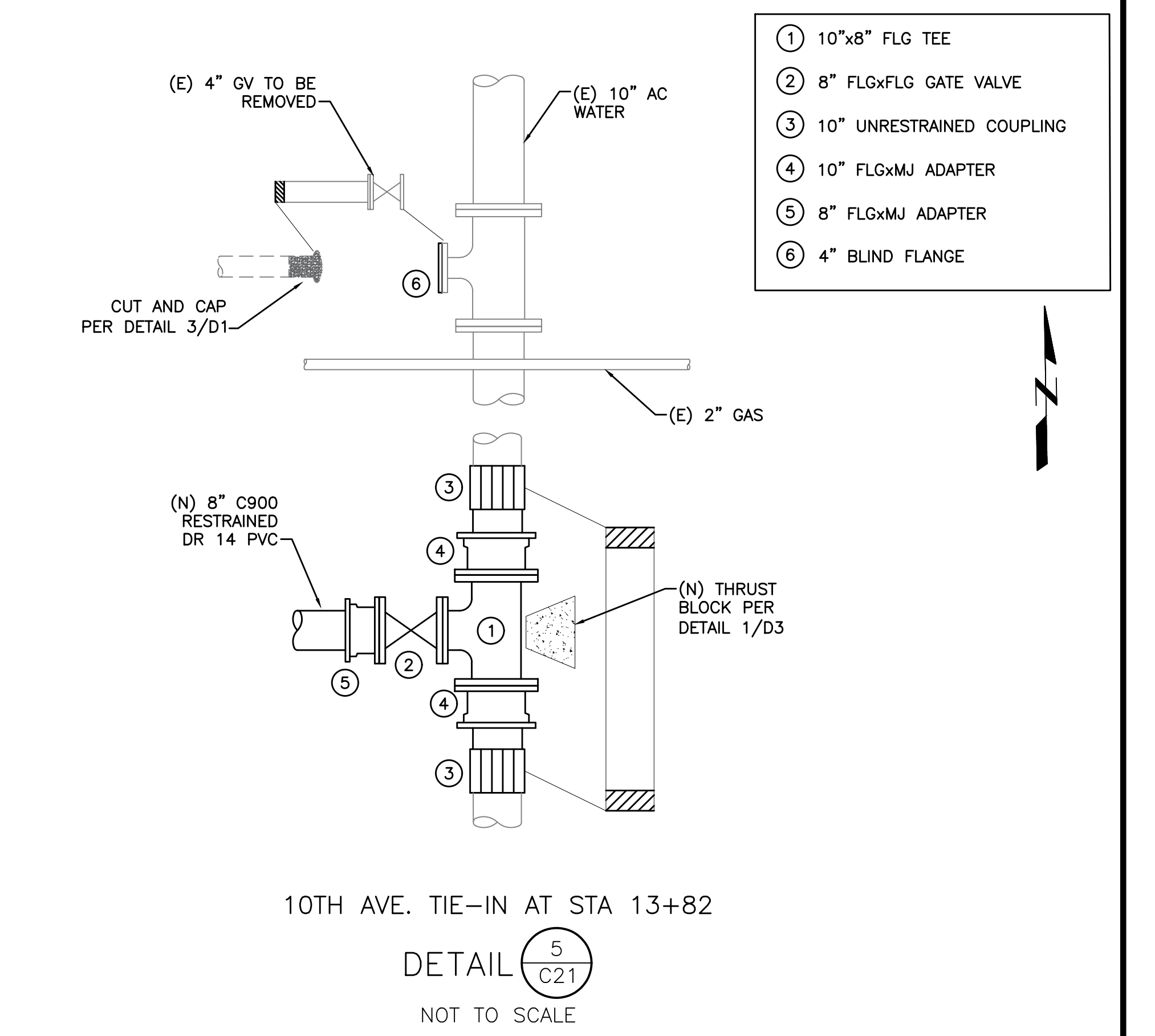
DETAIL $\frac{2}{C17}$
NOT TO SCALE



DETAIL $\frac{3}{C18}$
NOT TO SCALE



DETAIL $\frac{4}{C19}$
NOT TO SCALE



DETAIL $\frac{5}{C21}$
NOT TO SCALE

REV	DATE	BY	DESCRIPTION

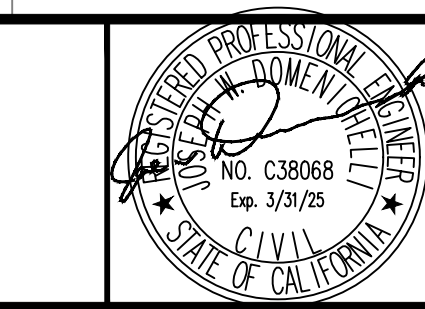
SCALE: NA

WARNING
0 1/2 1
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE.

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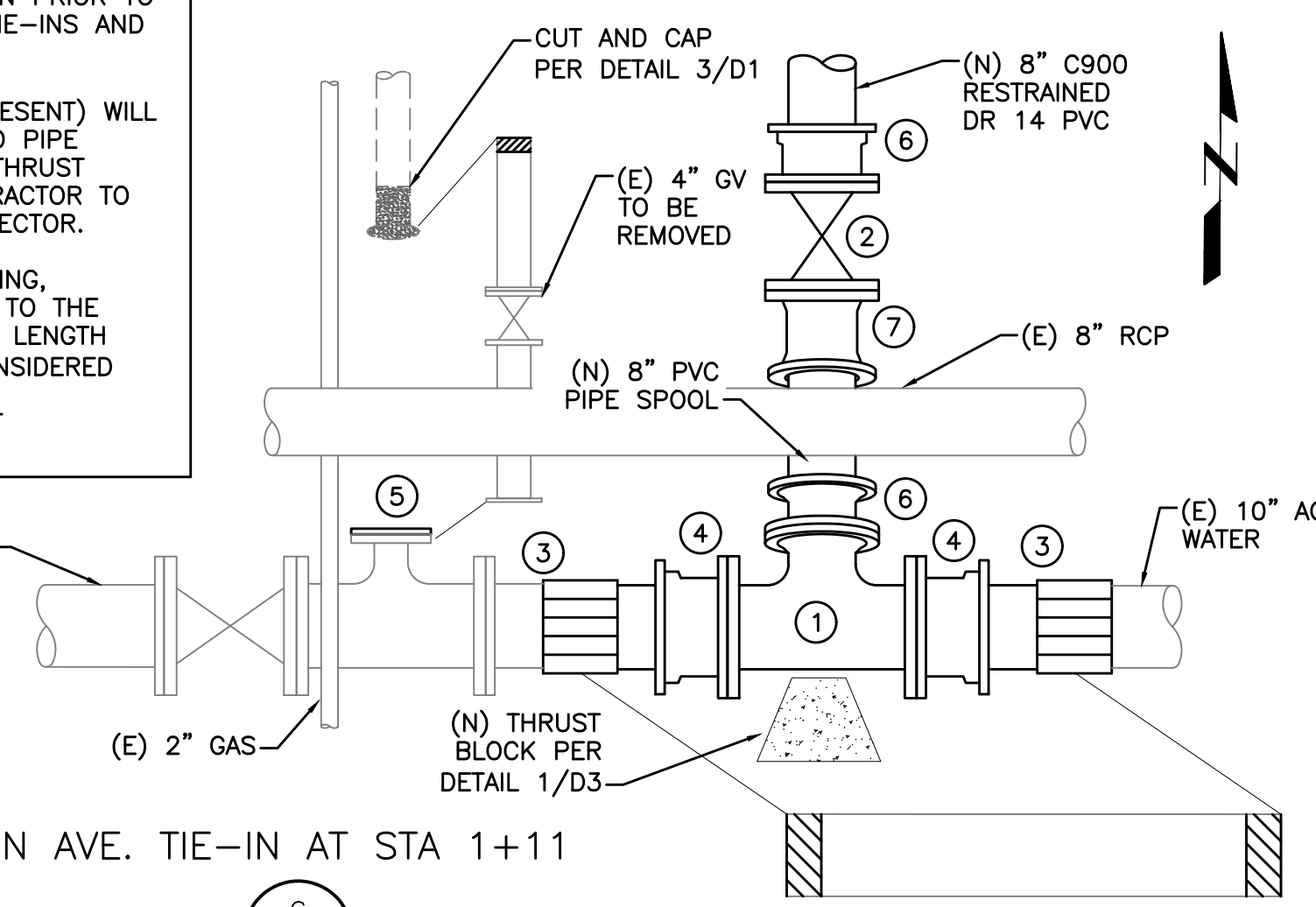
HISTORIC OLIVEHURST STEEL MAIN REPLACEMENT PROJECT

TIE-IN DETAILS 1

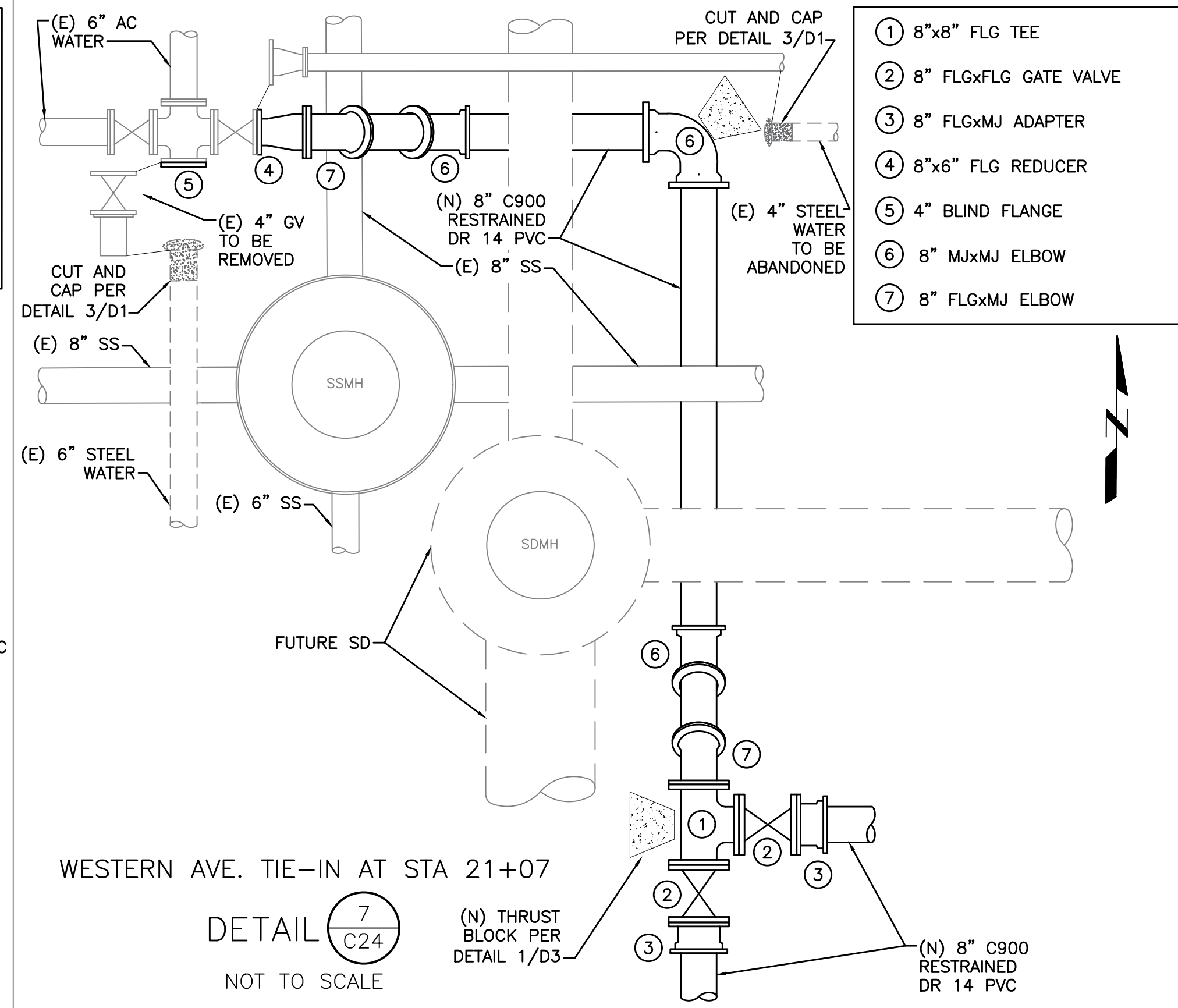
GENERAL NOTES (APPLICABLE TO ALL DETAILS):

1. NOT ALL UTILITIES BEING CROSSED OR IN THE VICINITY OF THE TIE-IN ARE SHOWN. CONTRACTOR MUST POTHOLE ALL UTILITIES AND NOTIFY THE ENGINEER OF ANY CONFLICTS.
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4. CONNECTION TO ACP (IF PRESENT) WILL REQUIRE A NON-RESTRAINED PIPE COUPLING AND ADDITIONAL THRUST BLOCKS NOT SHOWN. CONTRACTOR TO COORDINATE WITH CITY INSPECTOR.
5. FOR THE PURPOSE OF BIDDING, CONTINUATION OF NEW PVC TO THE EXTENT OF THE RESTRAINED LENGTH (NOT SHOWN) IS TO BE CONSIDERED PART OF EACH DETAIL. SEE MEASUREMENT AND PAYMENT DESCRIPTIONS.

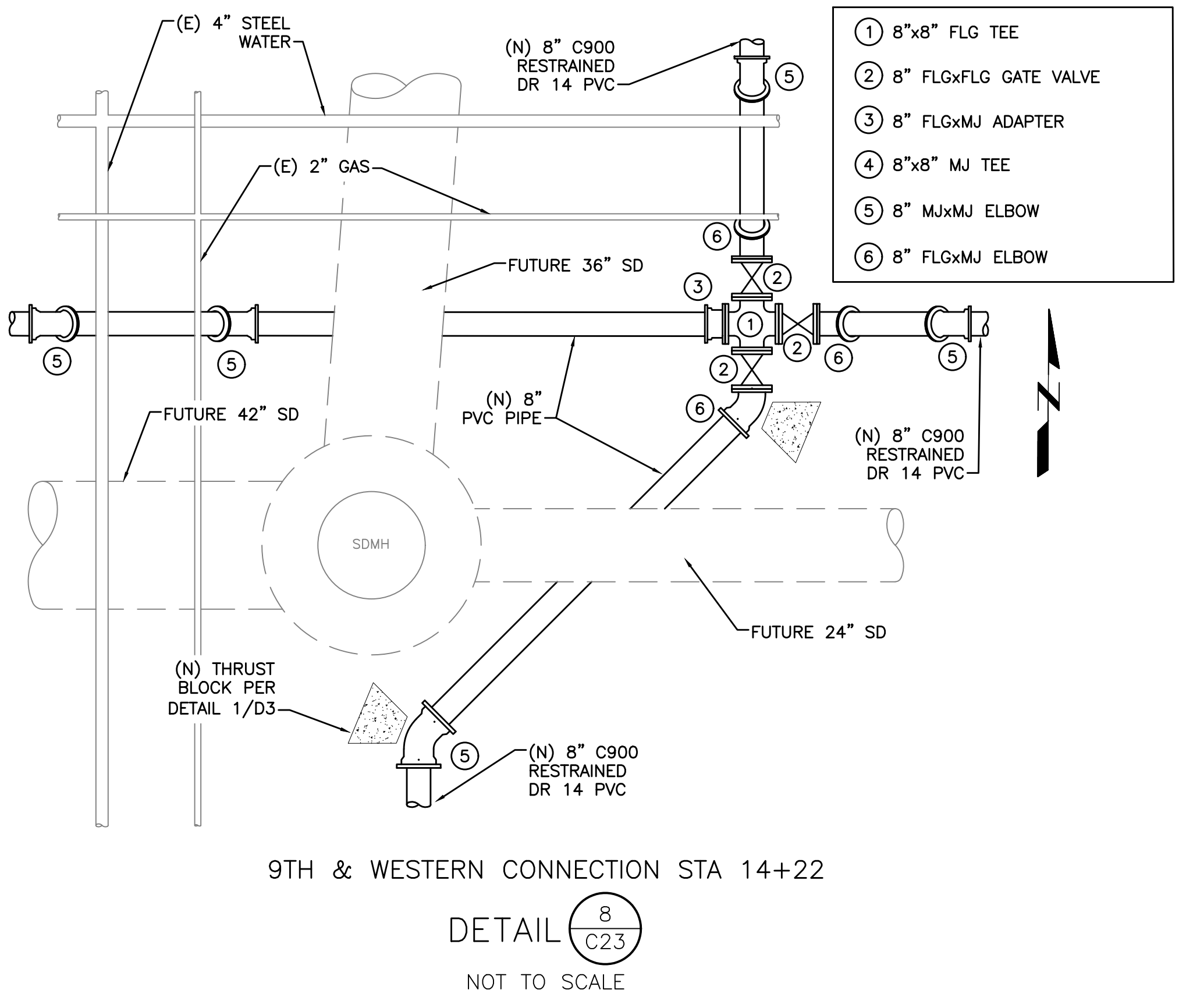
- 1 10"x8" FLG TEE, ROTATED
- 2 8" FLGxFLG GATE VALVE WITH FLGxMJ ADAPTERS
- 3 10" UNRESTRAINED COUPLING
- 4 10" FLGxMJ ADAPTER
- 5 4" BLIND FLANGE
- 6 8" FLGxMJ ADAPTER
- 7 8" FLGxMJ 11.25' BEND



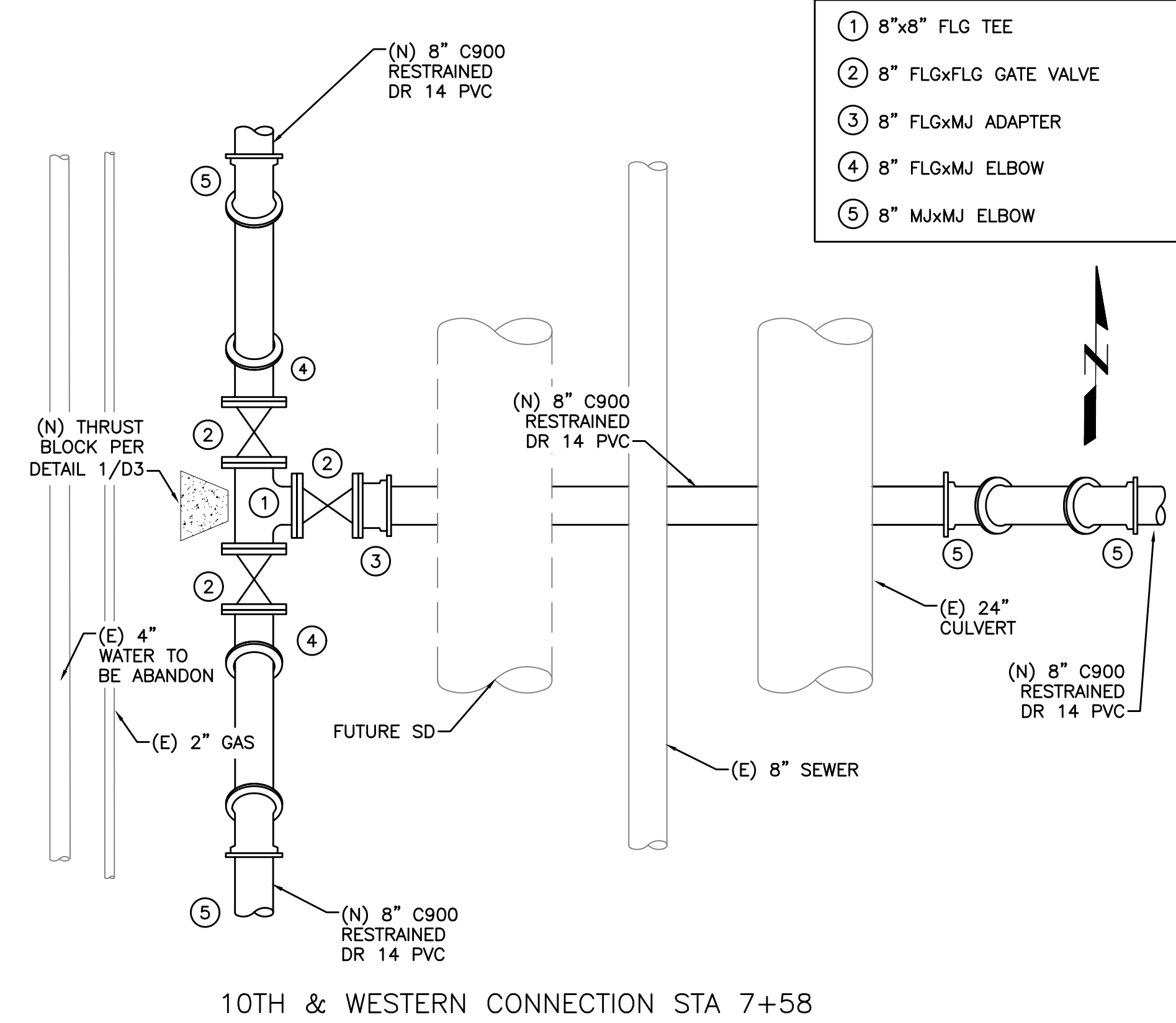
WESTERN AVE. TIE-IN AT STA 1+11
 DETAIL **6**
 C22
 NOT TO SCALE



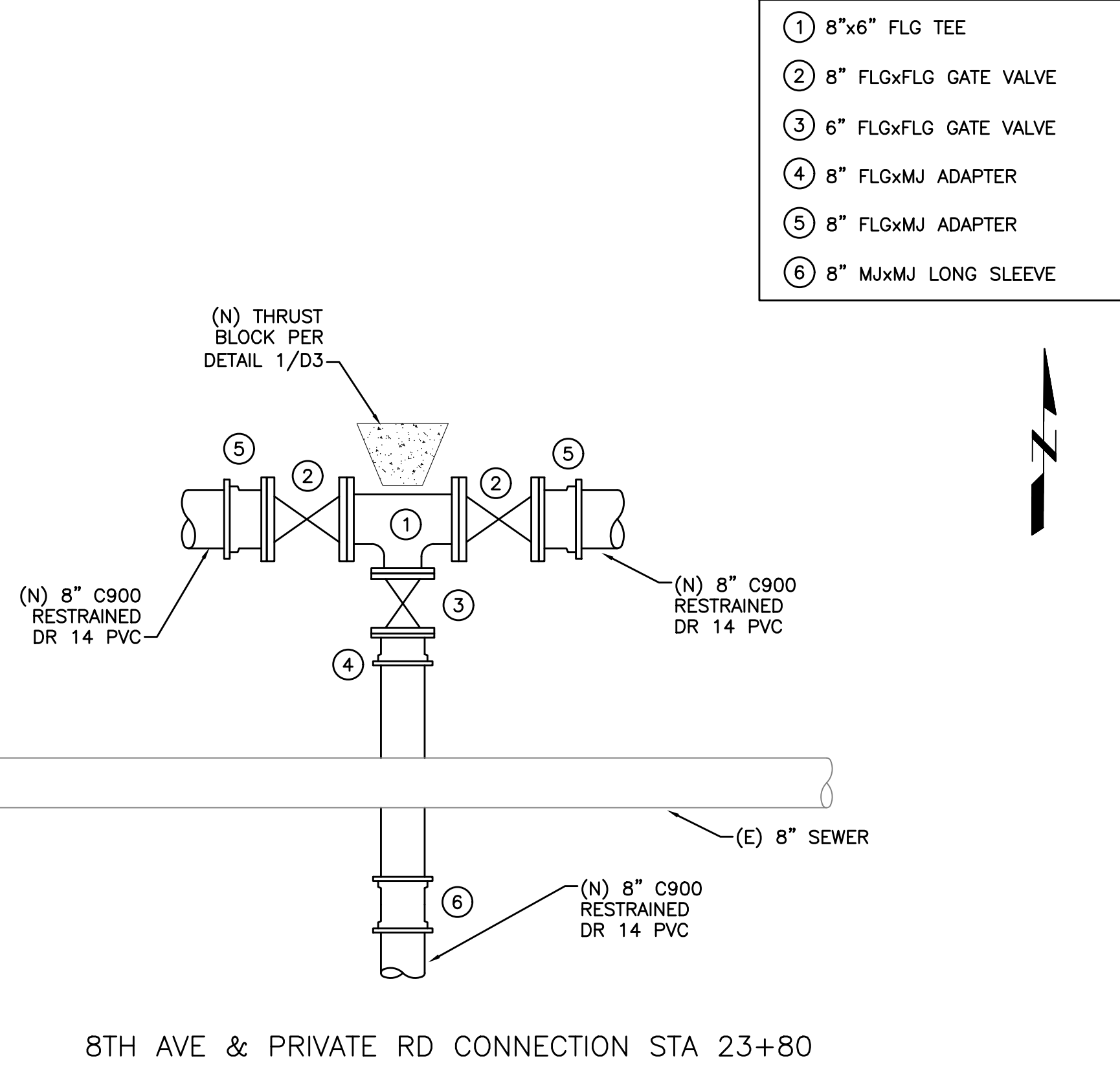
WESTERN AVE. TIE-IN AT STA 21+07
 DETAIL **7**
 C24
 NOT TO SCALE



9TH & WESTERN CONNECTION STA 14+22
 DETAIL **8**
 C23
 NOT TO SCALE



10TH & WESTERN CONNECTION STA 7+58
 DETAIL **9**
 C22
 NOT TO SCALE



8TH AVE & PRIVATE RD CONNECTION STA 23+80
 DETAIL **10**
 C25
 NOT TO SCALE

NOT USED
 DETAIL **11**
 NOT TO SCALE

Z:\OPUD-002 HISTORIC WATER INFRASTRUCTURE\DWG - PHASE 1\DWG\OPUD02-TS AND D'S.DWG

REV	DATE	BY	DESCRIPTION

SCALE: NA

WARNING
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 DRAWN MATT DOMENICHELLI
 CHECKED JOE DOMENICHELLI

DOMENICHELLI & ASSOCIATES

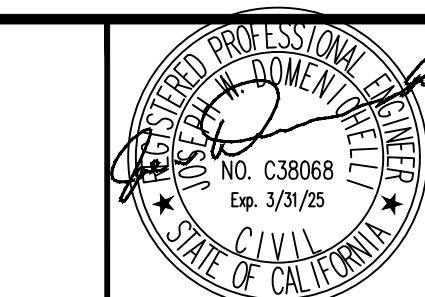
5180 Golden Foothill Pkwy, Suite 220
 El Dorado Hills, CA 95762

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HISTORIC OLIVEHURST STEEL MAIN REPLACEMENT PROJECT

TIE-IN DETAILS 2

ATTACHMENT C

Olivehurst Public Utility District - Historic Olivehurst Pipeline Replacement Project - Phase 1
State Water Resources Control Board - Division of Drinking Water
New Water Main Crossing Existing Non-Potable Fluid Pipeline

New Water						Crossing Existing Non-Potable Fluid Pipeline					
Item	Plan Sheet	Street	Station	Size (in.)	Material	Size (in.)	Material	Fluid	Position (Under/Over)	Seperation Min. (in.)	Comments
1	C16	8TH AVENUE	13+80	8	Class 305 DR14 PVC	15	HDPE	Storm Drain	New Water Main Under Existing SD	12	See Crossing Utilities Detail 1/D1 in Plan Set for Position of New Water Main Crossing Non-Potable Water
2	C17	8TH AVENUE	23+19	8	Class 305 DR14 PVC	36	RCP	Storm Drain	New Water Main Under Existing SD	12	See Crossing Utilities Detail 1/D1 in Plan Set for Position of New Water Main Crossing Non-Potable Water
3	C18	9TH AVENUE	1+38	8	Class 305 DR14 PVC	36	RCP	Storm Drain	New Water Main Under Existing SD	12	See Crossing Utilities Detail 1/D1 in Plan Set for Position of New Water Main Crossing Non-Potable Water
4	C18	9TH AVENUE	1+64	8	Class 305 DR14 PVC	24	CMP	Storm Drain	New Water Main Under Existing SD	12	See Crossing Utilities Detail 1/D1 in Plan Set for Position of New Water Main Crossing Non-Potable Water
5	C20	10TH AVENUE	1+06	8	Class 305 DR14 PVC	24	CMP	Storm Drain	New Water Main Under Existing SD	12	See Crossing Utilities Detail 1/D1 in Plan Set for Position of New Water Main Crossing Non-Potable Water
6	C20	10TH AVENUE	1+11	8	Class 305 DR14 PVC	8	VCP	Sanitary Sewer	New Water Main Under Existing SS	12	See Crossing Utilities Detail 1/D1 in Plan Set for Position of New Water Main Crossing Non-Potable Water
7	C20	10TH AVENUE	1+22	8	Class 305 DR14 PVC	24	CMP	Storm Drain	New Water Main Under Existing SD	12	See Crossing Utilities Detail 1/D1 in Plan Set for Position of New Water Main Crossing Non-Potable Water
8	C22	WESTERN AVENUE	1+13	8	Class 305 DR14 PVC	8	CMP	Storm Drain	New Water Main Under Existing SD	12	See Crossing Utilities Detail 1/D1 in Plan Set for Position of New Water Main Crossing Non-Potable Water
9	C22	WESTERN AVENUE	4+43	8	Class 305 DR14 PVC	48	CMP	Storm Drain	New Water Main Under Existing SD	12	See Crossing Utilities Detail 1/D1 in Plan Set for Position of New Water Main Crossing Non-Potable Water
10	C23	WESTERN AVENUE	13+96	8	Class 305 DR14 PVC	12	CMP	Storm Drain	New Water Main Under Existing SD	12	See Crossing Utilities Detail 1/D1 in Plan Set for Position of New Water Main Crossing Non-Potable Water
11	C23	WESTERN AVENUE	14+05	8	Class 305 DR14 PVC	8	VCP	Sanitary Sewer	New Water Main Under Existing SS	12	See Crossing Utilities Detail 1/D1 in Plan Set for Position of New Water Main Crossing Non-Potable Water
12	C23	WESTERN AVENUE	14+14	8	Class 305 DR14 PVC	24	RCP	Storm Drain	New Water Main Under Existing SD	12	See Crossing Utilities Detail 1/D1 in Plan Set for Position of New Water Main Crossing Non-Potable Water
13	C24	WESTERN AVENUE	20+60	8	Class 305 DR14 PVC	24	RCP	Storm Drain	New Water Main Under Existing SD	12	See Crossing Utilities Detail 1/D1 in Plan Set for Position of New Water Main Crossing Non-Potable Water
14	C24	WESTERN AVENUE	20+79	8	Class 305 DR14 PVC	30	RCP	Storm Drain	New Water Main Under Existing SD	12	See Crossing Utilities Detail 1/D1 in Plan Set for Position of New Water Main Crossing Non-Potable Water
15	C24	WESTERN AVENUE	20+85	8	Class 305 DR14 PVC	8	VCP	Sanitary Sewer	New Water Main Under Existing SS	12	See Crossing Utilities Detail 1/D1 in Plan Set for Position of New Water Main Crossing Non-Potable Water
16	C24	WESTERN AVENUE	20+97	8	Class 305 DR14 PVC	24	RCP	Storm Drain	New Water Main Under Existing SD	12	See Crossing Utilities Detail 1/D1 in Plan Set for Position of New Water Main Crossing Non-Potable Water

Legend
 ACP = Asbestoc Cement CL = Clay CMP = corrugated Metal Pipe DIP = Ductile Iron Pipe
 HDPE = High-density polyethylene NCP = Non-reinforced Concrete Pipe PL = Plastic
 PVC = Polyvinyl chloride RCP = Reinforced Concrete Pipe RIV = Riveted Steel Pipe
 STL = Steel UNK = Unknown VCP = Vitrified Clay Pipe

Joint Types
 R-MJ = Restrained Mechanical Joints (Bolted Fittings)
 R-POJ = Restrained Push-on Joint Gasket ("Field Lok350" manufactured by U.S. Pipe, or equivalent) - bell and spigot. Installation per manufacturer's recommendations.
 CCR = California Cod of Regulations

**Olivehurst Public Utility District - Historic Olivehurst Pipeline Replacement Project - Phase 1
State Water Resources Control Board - Division of Drinking Water
New Water Main Parallel Existing Non-Potable Fluid Pipeline**

New Water Main								Non Potable Fluid Pipe					
Item	Plan Sheet	Street	Sta Start	Sta End	Material	Length	Size (in.)	Size (in.)	Material	Fluid	Min Horizontal Clearance (ft.)	Comments	Proposed Joint Type
17	C17	8TH AVENUE	15+90	17+75	PVC C900 DR14	185	8	6	VCP	Sanitary Sewer	5	Due to constructability, the new water main is limited to this specific alignment which does not meet SS minimum horizontal separation of 10 feet clear (Section 64572 of the CCR). New water main in this section will be constructed with upgraded pipe (CL 350 DIP) and R-POJ as shown in Detail 2/D1.	R-POJ
18	C17	8TH AVENUE	17+86	22+86	PVC C900 DR14	500	8	6	VCP	Sanitary Sewer	5	Due to constructability, the new water main is limited to this specific alignment which does not meet SS minimum horizontal separation of 10 feet clear (Section 64572 of the CCR). New water main in this section will be constructed with upgraded pipe (CL 350 DIP) and R-POJ as shown in Detail 2/D1.	R-POJ

Legend
 ACP = Asbestoc Cement CL = Clay CMP = corrugated Metal Pipe DIP = Ductile Iron Pipe
 HDPE = High-density polyethylene NCP = Non-reinforced Concrete Pipe PL = Plastic
 PVC = Polyvinyl chloride RCP = Reinforced Concrete Pipe RIV = Riveted Steel Pipe
 STL = Steel UNK = Unknown VCP = Vitrified Clay Pipe

Joint Types
 R-MJ = Restrained Mechanical Joints (Bolted Fittings)
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 CCR = California Cod of Regulations

APPENDIX 6
Department of Water Resources
Prevailing Wage Reporting Form

This template should be placed onto the agency letterhead.

<Date>

<Enter Grant Manager Name>

Financial Assistance Branch
Department of Water Resources
P.O. Box 942836
Sacramento, CA 94236-0001

Subject: Agreement No. 46000XXXXX <enter grant program> Personnel Billing Rate Notification Letter

Dear <enter Grant Manager name>,

The <enter your agency name> is providing personnel services in support of Agreement No. 46000XXXXX <enter program name>. The table below presents the hourly personnel rates by job classification. These rates are comprised of base salary, fringe benefits, and administrative expenses (update this sentence to reflect what is included in your rates). <enter your agency name> will keep payroll records including timesheets for Agency personnel who provided services charged to <enter program name> and these rates align with internal accounting records. A written notification will be provided to DWR in the event of any changes such as new employees, job classifications, and/or rates that differ from the ranges shown below.

Employee Name (Optional)	Job Classification	Time Period	Personnel Rate Range (\$/hr)

Summary of standardized resources allocation methodology (required if you are including administrative expenses within the Personnel Rate and have not already submitted a methodology)

Example: The following is an example of a brief description of a methodology that could be used. It does not need to be the full breakdown (although you must have one on file that an auditor can review). There must be enough detail here, however, for a grant manager to verify that only eligible costs are included.

The following points summarize the current methodology for developing fully-burdened Personnel hourly rates:

- **Base Compensation** – Each position has an annual salary cost (base compensation).
- **Benefits** – Benefits include:

This template should be placed onto the agency letterhead.

- Mandatory benefits costs associated with payroll taxes, workers' compensation, and 401K employee retirement contribution.
- Optional benefits costs (employees may elect coverage) include, as applicable, Health, Dental, Life, and Disability insurance.
- The Payroll (Benefits) Burden is the sum of the benefits (Mandatory + Optional) calculated for each employee.
- **Administrative Expenses** – A consistent, standardized allocation methodology is used to determine the administrative expenses that are apportioned and included within the fully-burdened hourly rate. The administrative expenses only include expenses incurred by employees to complete work on this grant. Apportioned direct costs consist of: office usage (space square footage); phone/telecom; utilities and facility expenses.

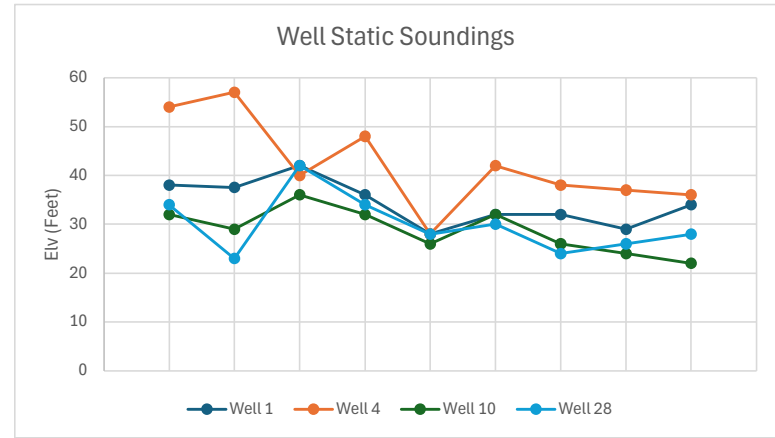
<Add signature by authorized representative>

APPENDIX 7

OPUD Well Data

APPENDIX 7 - WELL DATA

Year	Month	Well	Well Soundings (feet)			
			1	4	10	28
23	June		38	54	32	34
23	July		38	57	29	23
23	August		42	40	36	42
23	October		36	48	32	34
24	January		28	28	26	28
24	february		32	42	32	30
24	April		32	38	26	24
24	May		29	37	24	26
24	June		34	36	22	28



Well Locations

- Well 1 1255 Melody Rd, Olivehurst, CA 95961
- Well 4 1458 Melody Rd, Olivehurst, CA 95961
- Well 10 1640 11th Ave, Olivehurst, CA 95961
- Well 28 4610 Arboga Rd, Olivehurst, CA 95961

