



***Elsinore Valley Municipal Water District***

**STANDARD SPECIFICATIONS  
AND DRAWINGS**

**FOR THE CONSTRUCTION OF POTABLE WATER,  
RECYCLED WATER AND SEWER FACILITIES**

**January 2013**



**Elsinore Valley Municipal Water District**

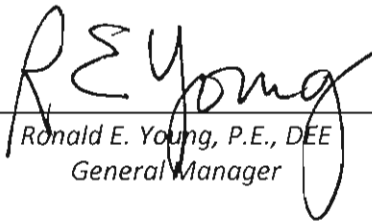
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**STANDARD SPECIFICATIONS AND DRAWINGS**

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**ELSINORE VALLEY MUNICIPAL WATER DISTRICT  
WATER AND SEWER CONSTRUCTION STANDARDS**

**STANDARD SPECIFICATIONS FOR POTABLE WATER,  
RECYCLED WATER AND SEWER FACILITIES**

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## ELSINORE VALLEY MUNICIPAL WATER DISTRICT WATER AND SEWER CONSTRUCTION STANDARDS

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Developers shall contact EVMWD for a copy of the current Construction Standard Specifications.

# PART I

## STANDARD AND REFERENCE SPECIFICATIONS, DEFINITIONS AND ABBREVIATIONS

## **PART I - STANDARD AND REFERENCE SPECIFICATIONS, DEFINITIONS AND ABBREVIATIONS**

### **1-1 STANDARD AND REFERENCE SPECIFICATIONS**

The work to be done under this Contract requires the completion of all work in accordance with the Contract Documents, including the current edition of the following documents (collectively, the "Standard Specifications"), as modified herein. In the case of conflict between the Standard Specifications and the General Conditions or Special Provisions, the General Conditions and Special Provisions shall take precedence over all of the following referenced Standard Specifications, in all areas, and said referenced Standard Specifications shall take precedence in the following order:

- A. Elsinore Valley Municipal Water District, "Standard Specifications and Drawings," as last revised, which are incorporated herein by this reference.
- B. "Standard Specifications for Public Works Construction", (the Green Book), and "Standard Plans for Public Works Construction", latest editions (hereinafter, SSPWC), including all supplements which said "Standard Specifications for Public Works Construction" are incorporated herein by this reference. Copies may be purchased from Building News, Inc., 10801 National Blvd., Los Angeles, California 90064, telephone (714) 517-0970, FAX (714) 535-8078 or 1612 S. Clementine St., Anaheim, California 92802, telephone (714) 517-0970, FAX (714) 533-8078.
- C. County of Riverside "Standard Specifications," as last revised, which are incorporated herein by this reference.

### **1-2 DEFINITIONS**

Whenever the words defined in this article, or pronouns used in their stead, occur in these specifications or in any of the other contract documents, they shall have the meanings here given:

- A. Acceptable, Acceptance or words of similar import shall be understood to be the acceptance of the Engineer and/or the District.
- B. Act of God an Act of God is an earthquake of magnitude 3.5 on the Richter scale and tidal waves.
- C. Approval means written authorization by Engineer and/or District.
- D. Contract Documents includes all documents as stated in the Contract.

- E. District and Contractor are those stated in the Contract. The terms District and Owner may be used interchangeably.
- F. Day shall mean calendar day unless otherwise specifically designated.
- G. Engineer shall mean the General Manager, or his or her designee, of the Elsinore Valley Municipal Water District, acting either directly or through properly authorized agents, such as agents acting within the scope of the particular duties entrusted to them. Also sometimes referred to as the “District’s Representative” or “Representative” in the Contract Documents.
- H. Equal, Equivalent, Satisfactory, Directed, Designated, Selected, As Required and similar words shall mean the written approval, selection, satisfaction, direction, or similar action of the Engineer and/or District.
- I. Indicated, Shown, Detailed, Noted, Scheduled or words of similar meaning shall mean that reference is made to the drawings, unless otherwise noted. It shall be understood that the direction, designation, selection, or similar import of the Engineer and/or District is intended, unless stated otherwise.
- J. Install means the complete installation of any item, equipment, or material such that it is operable and can be used by the District.
- K. Material shall include machinery, equipment, manufactured articles, or construction such as form work, fasteners, etc., and any other classes of material to be furnished in connection with the Contract. All materials shall be new unless specified otherwise.
- L. Perform shall mean that the Contractor, at Contractor’s expense, shall take all actions necessary to complete The Work, including furnishing of necessary labor, tools, and equipment, and providing and installing Materials that are indicated, specified, or required to complete such performance.
- M. Project is The Work planned by District as provided in the Contract Documents.
- N. Provide shall include provide complete in place, that is furnish, install, test and make ready for use.
- O. Recyclable Waste Materials shall mean materials removed from the Project site, which are required to be diverted to a recycling center rather than an area landfill. Recyclable Waste Materials include asphalt, concrete, brick, concrete block, and rock.
- P. Specifications means the Standard Specifications referenced in Part II Section 1-1 of EVMWD Standard Drawings and Specifications.

- Q. The Work means the entire improvement planned by the District pursuant to the Contract Documents.
- R. Work means labor, equipment and materials incorporated in, or to be incorporated in the construction covered by the Contract Documents.

### 1-3 ABBREVIATIONS

The following abbreviations, of the names of agencies promulgating reference specification are used herein:

<b>AWWA</b>	American Water Works Association
<b>AASHTO</b>	American Association of State Highway Transportation Officials
<b>ACI</b>	American Concrete Institute
<b>AISC</b>	American Institute of Steel Construction, Inc.
<b>ANSI</b>	American National Standards Institute, Inc.
<b>ASME</b>	American Society of Mechanical Engineers
<b>ASTM</b>	American Society for Testing and Materials
<b>CalTrans</b>	Department of Transportation, State of California
<b>DIS</b>	California Division of Industrial Safety
<b>DWP</b>	Department of Water and Power, City of Los Angeles
<b>EVMWD</b>	Elsinore Valley Municipal Water District
<b>LACPWD</b>	Los Angeles County Public Works Department
<b>MWD</b>	Metropolitan Water District of Southern California
<b>NEMA</b>	National Electrical Manufacturers Association
<b>NFPA</b>	National Fire Protection Association
<b>NSF</b>	National Sanitation Foundation
<b>OSHA</b>	Occupational Safety and Health Administration

- SSPC**      Steel Structures Painting Council
- SSPWC**    Standard Specifications for Public Works Construction
- WCLIB**    West Coast Lumber Inspection Bureau



# PART II

# GENERAL SPECIFICATIONS

## PART II - GENERAL SPECIFICATIONS

### SECTION 1 - GENERAL

#### 1-1 CONTRACT DOCUMENTS

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

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

1. Figures govern over scaled dimensions
  2. Detail drawings govern over general drawings
  3. Addenda or Change Order drawings govern over Contract Drawings
  4. Contract Drawings govern over Standard Drawings
  5. Contract Drawings govern over Shop Drawings
- C. **Conflicts in Contract Documents.** Notwithstanding the orders of precedence established above, in the event of conflicts, the higher standard shall always apply.
- D. **Organization of Contract Documents.** Organization of the Contract Documents into divisions, sections, and articles, and arrangement of drawings shall not control the Contractor in dividing The Work among subcontractors or in establishing the extent of Work to be performed by any trade.

## 1-2 CONTRACT DOCUMENTS: COPIES & MAINTENANCE

Contractor will be furnished, free of charge, **five (5)** copies of the Contract Documents. Additional copies may be obtained at cost of reproduction.

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

## 1-3 DETAIL DRAWINGS AND INSTRUCTIONS

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

## 1-4 SHOP DRAWINGS

- A. Contractor shall check and verify all field measurements and shall submit with such promptness as to provide adequate time for review and cause no delay in his own Work or in that of any other contractor, subcontractor, or worker on the Project, six (6) copies of all shop or setting drawings, calculations, schedules, and materials list, and all other provisions required by the Contract. Contractor shall sign all submittals affirming that submittals have been reviewed and approved by Contractor prior to submission to Engineer. Each signed submittal shall affirm that the submittal meets all the requirements of the Contract

Documents except as specifically and clearly noted and listed on the cover sheet of the submittal.

- B. The Contractor shall furnish to the Engineer such working drawings, data on materials, and equipment and samples as are required for the proper control of the work. All working drawings, data, and samples shall be subject to review by the Engineer for conformity with the drawings and specifications.

Working drawings include, without limitation, shop detail drawings, fabrication drawings, falsework and formwork drawings, pipe layouts, steel reinforcement, and similar classes of drawings. They shall contain all required details and information in reasonable scale.

Data on materials and equipment include, without limitation, materials and equipment lists, catalog data sheets, cuts, performance curves, diagrams and similar descriptive lists. Materials and equipment lists shall give, for each item thereon, the name and location of the supplier or manufacturer, trade name, catalog reference, size finish, and all other pertinent data.

- C. The Contractor shall properly check and correct all working drawings and data before their submission, whether they are prepared within his own organization or by a subcontractor or supplier. The shop drawings shall be submitted at least 30 calendar days before drawings will be required for commencing the work. Within ten days of receipt of said prints, the Engineer will return three copies of each drawing to the Contractor with his comments noted thereon. Shop drawings submitted via a FAX machine will not be considered for review.

1. If the drawing is returned to the Contractor marked "NO EXCEPTIONS TAKEN," a revision of said drawing will not be required.
2. If the drawing is returned to the Contractor marked "SUBMIT SPECIFIED ITEMS," those items shall be submitted before further consideration of said drawing is made.
3. If the drawing is returned to the Contractor marked "MAKE CORRECTIONS NOTED," formal revision of said drawing will not be required, but the Contractor shall immediately submit two (2) corrected copies to the Engineer.
4. If the drawing is returned to the Contractor marked "REVISE AND RESUBMIT," the Contractor shall revise said drawing and shall resubmit six (6) copies of said revised drawing to the Engineer.
5. If the drawing is returned to the Contractor marked "REJECTED," the Contractor shall revise said drawing and shall resubmit six (6) copies of said revised drawing to the Engineer, as in the case of an original submittal.

- D. Fabrication of an item shall not be commenced before the Engineer has reviewed the pertinent shop drawings and returned copies to the Contractor without rejection or revisions.

Revisions indicated on shop drawings shall be considered as changes necessary to meet the requirements of the contract plans and specifications and shall not be taken as the basis of claims for extra work. The Contractor shall have no claim for damages or extension of time

due to any delay resulting from making required revisions to shop drawings. The review of said drawings by the Engineer will apply to general design only and will in no way relieve the Contractor of responsibility for errors or omissions contained therein nor will such review operate to waive or modify any provisions or requirements contained in these contract specifications or on the contract drawings.

- E. Submittals shall consist of the appropriate combination of catalog sheets, material lists, manufacturer's brochures, technical bulletins, specifications, diagrams, or product samples necessary to describe a system, product, or item. In part, this includes such items as pipe, valves, meter, meter vault, air-vacuum assembly, casing pipe, pipe hangers and fittings, related appurtenances, shoring, traffic control, dewatering plans, etc.
- F. Contractor shall make any corrections required by the Engineer, and file with the Engineer six (6) corrected copies each, and furnish such other copies as may be needed for completion of the Work.
- G. Engineer's approval of shop drawings shall not relieve Contractor from responsibility for deviations from the Contract Documents unless Contractor has, in writing, called Engineer's attention to such deviations at time of submission and has secured the Engineer's written Approval. Engineer's Approval of shop drawings shall not relieve Contractor from responsibility for errors in shop drawings.

#### **1-5 RECORD ("AS BUILT") DRAWINGS**

- A. Contractor shall prepare and maintain a complete set of record drawings (herein referred to as "as-builts") and shall require each trade to prepare its own as-builts. The as-builts must show the entire site for each major trade, including but not limited to water, sewer, electrical, data, telephone, cable, fire alarm, gas, and plumbing. Contractor shall mark the as-builts to show the actual installation where the installation varies from the Work as originally shown on the Contract Drawings.
- B. Contractor shall mark whichever drawings are most capable of showing conditions fully and where shop drawings are used, Contractor must record a cross-reference at the corresponding location on the contract drawings. Contractor shall give particular attention to concealed elements that would be difficult to measure and record at a later date. Contractor shall use colors to distinguish variations in separate categories of The Work.
- C. Contractor shall note related change order numbers where applicable. Contractor shall organize as-builts into manageable sets, bound with durable paper cover sheets and shall print suitable title, dates and other identification on the cover of each set. Contractor to also provide an electronic version of the as-builts. The suitability of the as-builts will be determined by the Engineer.
- D. Within thirty (30) days after project completion and before final payment, the Contractor shall deliver the completed record drawings and other documents to the District.

## **SECTION 2 - CHANGES AND EXTRA WORK**

### **2-1 CHANGE ORDER WORK**

- A. The District, without invalidating the Contract, may order changes in the Work consisting of additions, deletions or other revisions, the Contract amount and Contract time being adjusted accordingly. All such changes in the Work shall be authorized by Change Order, and shall be performed under the applicable conditions of the Contract Documents. A Change Order signed by the Contractor indicates the Contractor's agreement therewith, including any adjustment in the Contract amount or the Contract time, and the full and final settlement of all costs (direct, indirect, and overhead) related to the Work authorized by the Change Order.
- B. All claims for additional compensation to the Contractor shall be presented in writing before the expense is incurred and will be adjusted as provided herein. No work shall be allowed to lag pending such adjustment, but shall be promptly executed as directed, even if a dispute arises. No claim will be considered after the work in question has been done unless a written contract change order has been issued or a timely written notice of claim has been made by Contractor. Contractor shall not be entitled to claim or bring suit for damages, whether for loss of profits or otherwise, on account of any decrease or omission of any item or portion of Work to be done. Whenever any change is made as provided for herein, such change shall be considered and treated as though originally included in the Contract, and shall be subject to all terms, conditions, and provisions of the original Contract.

### **2-2 OWNER-INITIATED CHANGE**

The Contractor must submit a complete cost proposal, including any change in the Contract time, within seven (7) Days after receipt of a scope of a proposed change order, unless the District requests that proposals be submitted in less than seven (7) Days.

### **2-3 CONTRACTOR-INITIATED CHANGE**

The Contractor must give written notice of a proposed change order required for compliance with the Contract Documents within seven (7) Days of discovery of the facts giving rise to the proposed change order.

### **2-4 COST PROPOSALS**

Price quotations from the Contractor shall be accompanied by sufficiently detailed supporting documentation to permit verification by the District. Whenever possible, any changes to the Contract amount shall be in a lump sum mutually agreed to by the Contractor and the District. If the Contractor fails to submit the cost proposal within the seven (7) Day period (or as requested), the District has the right to order the Contractor in writing to commence the work immediately on a force account basis and/or issue a lump sum change to the contract price in accordance with the District's estimate of cost. If the change is issued based on the District estimate, the Contractor will waive its right to dispute the action unless within fifteen (15) Days following completion of the added/deleted work, the Contractor presents written proof that the District's estimate was in error.

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## 2-5 SEGREGATION OF COSTS

- A. Estimates for lump sum quotations and accounting for cost-plus-percentage work shall be limited to direct expenditures necessitated specifically by the subject extra work, and shall be segregated as follows:
- B. Labor. The costs of labor will be the actual cost for wages prevailing locally for each craft or type of worker at the time the extra work is done, plus employer payments of payroll taxes and insurance, health and welfare, pension, vacation, apprenticeship funds, and other direct costs resulting from Federal, State or local laws, as well as assessment or benefits required by lawful collective bargaining agreements. The use of a labor classification which would increase the extra work cost will not be permitted unless the contractor establishes the necessity for such additional costs. Labor costs for equipment operators and helpers shall be reported only when such costs are not included in the invoice for equipment rental.
- C. Materials. The cost of materials reported shall be at invoice or lowest current price at which such materials are locally available in the quantities involved, plus sales tax, freight and delivery. Materials cost shall be based upon supplier or manufacturer's invoice. If invoices or other satisfactory evidence of cost are not furnished within fifteen (15) Days of delivery, then the Engineer shall determine the materials cost, at its sole discretion.
- D. Tool and Equipment Use
1. Contractor-owned equipment charges for Extra Work, or for delays in Work, shall be in accordance with the current State of California, Department of Transportation, Division of Construction – Labor Surcharge and Equipment Rental Rates, as follows:
    - a. Working Equipment Rates, 100% of the price listed for the first shift each day and at 50% of that same hourly rate for the second and third shifts each day.
    - b. Standby Equipment Rates, 50% of the price listed.
  2. Tools and equipment rented by the Contractor will be reimbursed at the actual invoiced amount applicable to the Extra Work. The Contractor will provide the applicable weekly or monthly rate for tools and/or equipment that will be used in long durations. No payment will be made for the use of tools or equipment that has a replacement value of \$1,000 or less.

The reported rental time for equipment already at the worksite shall be the duration of its use on the Extra Work. This time begins when equipment is first put into actual operation on the Extra Work, plus the time required moving it from its previous site and back, or to a closer site.
  3. No payment will be made for use of Contractor-owned or rented transportation vehicles (including job trucks) unless the vehicle is utilized (1) by personnel at or below the foreman level; and (2) exclusively in connection with performing Extra Work. In such event, the Contractor will only be entitled to payment for the pro-rata time the vehicle was actually used in connection with the Extra Work, as properly

documented, and demonstrated by the Contractor. All other use of Contractor-owned or rented transportation vehicles shall be considered part of Contractor's markup specified in subsection below.

E. Overhead, Profit and Other Charges. The mark-up for overhead (including supervision) and profit on work added to the Contract shall be according to the following:

1. "Net Cost" is defined as consisting of costs of labor, materials and tools and equipment only excluding overhead and profit. The costs of applicable insurance and bond premium will be reimbursed to the Contractor and subcontractors at cost only, without mark-up.
2. For Work performed by the Contractor's forces the added cost for overhead and profit shall not exceed fifteen (15%) percent of the Net Cost of the Work.
3. For Work performed by a subcontractor, the added cost for overhead and profit shall not exceed fifteen (15%) percent of the Net Cost of the Work to which the Contractor may add five (5%) percent of the subcontractor's Net Cost.
4. For Work performed by a sub-subcontractor the added cost for overhead and profit shall not exceed fifteen (15 %) percent of the Net Cost for Work to which the subcontractor and general contractor may each add an additional five (5 %) percent of the Net Cost of the lower tier subcontractor.
5. No additional mark up will be allowed for lower tier subcontractors, and in no case shall the added cost for overhead and profit payable by District exceed twenty-five (25%) percent of the Net Cost as defined herein.
6. For added or deducted Work by subcontractors, the Contractor shall furnish to the District the subcontractor's signed detailed estimate of the cost of labor, material and equipment, including the subcontractor markup for overhead and profit. The same requirement shall apply to sub-subcontractors.
7. For added or deducted work furnished by a vendor or supplier, the Contractor shall furnish to the District a detailed estimate or quotation of the cost to the Contractor, signed by such vendor or supplier.
8. Any change in The Work involving both additions and deletions shall indicate a net total cost, including subcontracts and materials. Allowance for overhead and profit, as specified herein, shall be applied if the net total cost is an extra; overhead and profit allowances shall not be applied if the net total cost is a credit. The estimated cost of deductions shall be based on labor and material prices on the date the Contract was executed.
9. Contractor shall not reserve a right to assert impact costs, extended job site costs, extended overhead, constructive acceleration, and/or actual acceleration beyond what is stated in the change order for work. No claims shall be allowed for impact,

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extended overhead costs, constructive acceleration, and/or actual acceleration due to a multiplicity of changes and/or clarifications. **The Contractor may not change or modify the District's change order form in an attempt to reserve additional rights.**

## **2-6 UNILATERAL CHANGE ORDER/CHANGE ORDER DIRECTIVE**

If the District disagrees with the proposal submitted by Contractor, it will notify the Contractor and the District will provide its opinion of the appropriate price and/or time extension. If the Contractor agrees with the District, a change order will be issued by the District. If no agreement can be reached, the District shall have the right to issue a unilateral change order setting forth its determination of the reasonable additions or savings in costs and time attributable to the extra or deleted work. Such determination shall become final and binding if the Contractor fails to submit a claim in writing to the District within fifteen (15) Days of the issuance of the unilateral change order, disputing the terms of the unilateral change order.

## **2-7 NO DELAY**

No dispute, disagreement, or failure of the parties to reach agreement on the terms of the change order shall relieve the Contractor from the obligation to proceed with performance of the work, including extra work, promptly and expeditiously.

## **2-8 SURETY**

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

## **2-9 NO MOVE-IN COSTS**

Changes in the work that do not result in an interruption of construction shall not include costs for Contractor move-in regardless of the number of changes required to complete the work specified by these contract documents. Additional Contractor move-in will be paid only if the Contractor is directed to withdraw from the construction area.

## **2-10 EXCLUDED COSTS**

The following specific items of work shall be paid for by the Contractor and shall not be considered as a basis for a Change Order:

- A. Additional surveying work to establish line and/or grade when the original survey stakes were damaged or destroyed by the Contractor.
- B. Additional compaction testing of trench backfill when the Contractor fails to achieve proper compaction in an area after two (2) compaction tests are completed.
- C. Removal and proper disposal of all excess materials as part of the final clean-up including asbestos-cement pipe that is removed as part of construction.

## **2-11 UNIT PRICES**

Payment for the various items of work on the Bid Sheets shall include all compensation to be received by the Contractor for furnishing all tools, equipment, supplies, and manufactured articles, and for all labor, operations and incidentals appurtenant to the items of the work as specified and shown on the drawings, including all appurtenances thereto. No separate payment will be made for any item that is not specifically set forth in the Bid Schedule, and all costs therefore shall be included in the prices named in the Bid Schedule for the various appurtenant items of work. Move-ins caused by an interruption of construction beyond the control of the Contractor will be paid for by change order to the contract. A maximum of \$2,000 will be paid for each eligible move-in.

## **2-12 CHANGES IN PIPELINE ALIGNMENT**

- A. Changes in horizontal pipeline alignment will not be considered as a basis for a change order unless the horizontal alignment changes by more than five (5) feet from that shown on the plan.
- B. Changes in vertical alignment will be paid for at the same price per vertical foot of depth as was contained in the original unit price for installing the pipe plus 25% for the incremental costs of additional shoring. The change order amount will be calculated by taking the unit price per foot for the installation of the pipe, subtracting the cost of the pipe, and dividing by the average depth of the trench to the top of the pipe. The change order amount will be a cost per additional foot of depth per foot of length.

## **2-13 TOOLS AND EQUIPMENT USE**

Contractor-owned equipment charges for Extra Work, or for delays in Work, shall be in accordance with the current State of California, Department of Transportation, Division of Construction – Labor Surcharge and Equipment Rental Rates, as follows:

- A. Working Equipment Rates, 100% of the price listed for the first shift each day and at 50% of that same hourly rate for the second and third shifts each day.
- B. Standby Equipment Rates, 50% of the price listed.

Tools and equipment rented by the Contractor will be reimbursed at the actual invoiced amount applicable to the Extra Work. The Contractor will provide the applicable weekly or monthly rate for tools and/or equipment that will be used in long durations.

No payment will be made for the use of tools or equipment that has a replacement value of \$500 or less.

The reported rental time for equipment already at the worksite shall be the duration of its use on the Extra Work. This time begins when equipment is first put into actual operation on the Extra Work, plus the time required moving it from its previous site and back, or to a closer site.

No payment will be made for use of Contractor-owned or rented transportation vehicles (including job trucks) unless the vehicle is utilized (1) by personnel at or below the foreman level and; (2) exclusively in connection with performing Extra Work. In such event, the Contractor will only be entitled to payment for the pro-rated time the vehicle was actually used in connection with the Extra Work, as properly documented and demonstrated by the Contractor.

## **SECTION 3 - SCHEDULE**

### **3-1 ESTIMATED SCHEDULE**

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

### **3-2 SCHEDULE CONTENTS**

The schedule shall allow enough time for inclement weather. The schedule shall indicate the beginning and completion dates of all phases of construction; critical path for all critical, sequential time related activities; and "float time" for all "slack" or "gaps" in the non-critical activities. The schedule shall clearly identify all staffing and other resources which in the Contractor's judgment are needed to complete the Project within the time specified for completion. Schedule duration shall match the Contract time or earlier.

### **3-3 SCHEDULE UPDATES**

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

### **3-4 TIME OF COMPLETION**

The project will be completed by the date shown in Article 4 of the Contract.

## SECTION 4- SUBSTITUTIONS

### 4-1 DESIGNATION

Pursuant to Public Contract Code Section 3400(b) the District may make a finding that is described in the invitation for bids that designates certain products, things, or services by specific brand or trade name.

### 4-2 OR EQUAL

Unless specifically designated in the Contract Documents, whenever any material, process, or article is indicated or specified by grade, patent, or proprietary name or by name of manufacturer, such Specifications shall be deemed to be used for the purpose of facilitating the description of the material, process or article desired and shall be deemed to be followed by the words "or equal." Contractor may, unless otherwise stated, offer for substitution any material, process or article which shall be substantially equal or better in every respect to that so indicated or specified in the Contract Documents. However, the District may have adopted certain uniform standards for certain materials, processes, and articles.

### 4-3 SUBSTITUTION REQUESTS

Contractor shall submit requests, together with substantiating data, for substitution of any "or equal" material, process or article no later than thirty-five (35) days after award of the Contract. To facilitate the construction schedule and sequencing, some requests may need to be submitted before thirty-five (35) days after award of Contract. Provisions regarding submission of "or equal" requests shall not in any way authorize an extension of time for performance of this Contract. If a proposed "or equal" substitution request is rejected, Contractor shall be responsible for providing the specified material, process, or article. The burden of proof as to the equality of any material, process, or article shall rest with the Contractor. The District has the complete and sole discretion to determine if a material, process or article is an "or equal" material, process or article that may be substituted.

- A. Data required to substantiate requests for substitutions of an "or equal" material, process or article data shall include a signed affidavit from the Contractor stating that, and describing how the substituted "or equal" material, process or article is equivalent to that specified in every way except as listed on the affidavit. Substantiating data shall include any and all illustrations, specifications, and other relevant data including catalog information which describes the requested substituted "or equal" material, process or article, and substantiates that it is an "or equal" to the material, process or article. The substantiating data must also include information regarding the durability and lifecycle cost of the requested substituted "or equal" material, process, or article. Failure to submit all the required substantiating data, including the signed affidavit, to the District in a timely fashion will result in the rejection of the proposed substitution.
- B. The Contractor shall bear all of the District's costs associated with the review of substitution requests.

- C. The Contractor shall be responsible for all costs related to a substituted “or equal” material, process, or article.
- D. Contractor is directed to the Special Provisions (if any) to review any findings made pursuant to Public Contract Code section 3400.

## SECTION 5 – SUBMITTALS AND MATERIALS

### 5-1 SUBMITTALS

- A. Contractor shall furnish to the Engineer for approval, prior to purchasing or commencing any Work, a log of all samples, material lists and certifications, mix designs, schedules, and other submittals, as required in the specifications. The log shall indicate whether samples will be provided in accordance with other provisions of this Contract.
- B. Contractor will provide samples and submittals, together with catalogs and supporting data required by the Engineer, to the Engineer within a reasonable time period to provide for adequate review and avoid delays in the Work.
- C. These requirements shall not authorize any extension of time for performance of this Contract. Engineer will check and approve such samples, but only for conformance with design concept of work and for compliance with information given in the Contract Documents. Work shall be in accordance with approved samples and submittals.

### 5-2 MATERIALS

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

## **SECTION 6 – TIME FOR COMPLETION AND LIQUIDATED DAMAGES**

### **6-1 TIME FOR COMPLETION/LIQUIDATED DAMAGES**

Work shall be commenced within ten (10) days of the date stated in the District's Notice to Proceed and shall be completed by Contractor in the time specified in Article 4 of the Contract Documents. The District is under no obligation to consider early completion of the Project and the Contract completion date shall not be amended by the District's receipt or acceptance of the Contractor's proposed earlier completion date. Furthermore, Contractor shall not, under any circumstances, receive additional compensation from the District (including but not limited to indirect, general, administrative, or other forms of overhead costs) for the period between the time of earlier completion proposed by the Contractor and the Contract completion date.

If the Work is not completed as stated in the Contract Documents, it is understood that the District will suffer damage. In accordance with Government Code section 53069.85, being impractical and infeasible to determine the amount of actual damage, it is agreed that Contractor shall pay to the District as fixed and liquidated damages, and not as a penalty, the sum stipulated in Article 5 of the Contract for each day of delay until The Work is fully completed. Contractor and its surety shall be liable for any liquidated damages. Any money due or to become due the Contractor may be retained to cover liquidated damages.

### **6-2 INCLEMENT WEATHER**

Contractor shall abide the Engineer's determination of what constitutes inclement weather. Time extensions for inclement weather shall only be granted when the Work stopped during inclement weather is on the critical path of the Project schedule.

### **6-3 CONTRACT TIME ACCOUNTING**

All changes which affect contract time must be authorized by means of Change Order as they occur. The Contract Time, including all adjustments by Change Order, shall be shown on each Partial Payment Estimate request submitted by the Contractor.



## SECTION 7- DELAYS

### 7-1 EXTENSION OF TIME

Contractor shall not be charged liquidated damages because of any delays in completion of The Work due to unforeseeable causes beyond the control and without the fault or negligence of Contractor (or its subcontractors or suppliers).

Contractor shall within five (5) Days of identifying any such delay notify the District in writing of causes of delay. The District shall ascertain the facts and extent of delay and grant extension of time for completing The Work when, in its judgment, the facts justify such an extension. Time extensions to the Project shall be requested by the Contractor as they occur and without delay. No delay claims shall be permitted unless the event or occurrence delays the completion of the Project beyond the Contract completion date.

### 7-2 NO DAMAGES FOR REASONABLE DELAY

The District's liability to Contractor for delays for which the District is responsible shall be limited to only an extension of time unless such delays were unreasonable under the circumstances. In no case shall the District be liable for any costs which are borne by the Contractor in the regular course of business, including, but not limited to, home office overhead and other ongoing costs.

Damages caused by unreasonable District delay, including delays caused by items that are the responsibility of the District pursuant to Government Code Section 4215, shall be based on actual costs only, no proportions or formulas shall be used to calculate any delay damages.

### 7-3 RELATED WORK

The Contractor expressly waives any and all rights to make claim or be entitled to receive any compensation or damages for failure of Elsinore Valley Municipal Water District or of a utility company, district, agency, or other contractor to have related portions of the project completed in time, creating delays, standby or waiting time for work included in this contract.

Contractor expressly agrees that such delays are within the parties' contemplation at the time of execution of the Contract. The Contractor shall be entitled to actually necessary time extension, without damages, as determined by the District for such delay and liquidated damages shall not accrue to the contractor as a result of said delays.

### 7-4 GEOTECHNICAL OR SUBSURFACE CONDITIONS

Unforeseen geotechnical and subsurface conditions may be exposed during grading or construction activities that may require additional geotechnical or subsurface investigations and/or design modifications to the construction plans. The Contractor shall be entitled to reasonable extra costs and time delays caused by the unforeseen geotechnical or subsurface conditions which cause delays, standby, or waiting time for work included in this contract. A Potential Change Order (PCO) and Change Order (CO) shall be negotiated with the District for these reasonable extra costs and time delays.

Contractor expressly agrees that such delays are within the parties' contemplation at the time of execution of the Contract. The Contractor shall be entitled to actually necessary time extension, without damages, as determined by the District for such delay and liquidated damages shall not accrue to the contractor as a result of said delays.

## SECTION 8 - COST BREAKDOWN AND PERIODIC ESTIMATES

### 8-1 ESTIMATES

Contractor shall furnish on forms Approved by the District:

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

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

### 8-2 MOBILIZATION COSTS

- A. When a bid item is included in the Bid Form for mobilization, the costs of Work in advance of construction operations and not directly attributable to any specific bid item will be included in the progress estimate ("Initial Mobilization"). When no bid item is provided for "Initial Mobilization," payment for such costs will be deemed to be included in the other items of The Work.
- B. A separate field office trailer will not be required for the Engineer unless specifically called for in the Bid Items. Otherwise a desk with chair will be included in the Contractor's construction trailer for use by the Engineer when he is visiting the construction site.
- C. Payment for Initial Mobilization based on the lump sum provided in the Bid Form, which shall constitute full compensation for all such Work. No payment for Initial Mobilization will be made until all of the listed items have been completed to the satisfaction of the Engineer. The scope of the Work included under Initial Mobilization shall include, but shall not be limited to, the following principal items:
  1. Obtaining and paying for all bonds, insurance, and permits.

2. Moving on to the Project site of all Contractor's plant and equipment required for the first month's operations.
3. Installing temporary construction power, wiring, internet (if needed), and lighting facilities.
4. Establishing a fire protection system.
5. Developing and installing a construction water supply.
6. Providing and maintaining the field office trailers for the Contractor and the Engineer, complete, with all specified furnishings and utility services including telephones, telephone appurtenances, computer and printer, and copying machine.
7. Providing on-site communication facilities for the Owner and the Engineer, including telephones, radio pagers, internet connections and fax machines.
8. Providing on-site sanitary facilities and potable water facilities as specified per Cal-OSHA and these Contract Documents.
9. Furnishing, installing, and maintaining all storage buildings or sheds required for temporary storage of products, equipment, or materials that have not yet been installed in the Work. All such storage shall meet manufacturer's specified storage requirements, and the specific provisions of the specifications, including temperature and humidity control, if recommended by the manufacturer, and for all security.
10. Arranging for and erection of Contractor's work and storage yard.
11. Posting all OSHA required notices and establishment of safety programs per Cal-OSHA.
12. Full-time presence of Contractor's superintendent at the job site as required herein.
13. Submittal of Construction Schedule as required by the Contract Documents.

## **SECTION 9 - PAYMENTS**

### **9-1 PROGRESS PAYMENTS**

The District shall make monthly progress payments following receipt of undisputed and properly submitted payment requests. Contractor shall be paid a sum equal to ninety percent (90%) of the value of Work performed up to the last day of the previous month, less the aggregate of previous payments.

### **9-2 FINAL PAYMENT**

The Contractor shall, after the full completion of The Work, submit a final payment application. All prior progress estimates shall be subject to correction in the final estimate and payment.

- A. Unless otherwise required by law, the final payment of ten percent (10%) of the value of the Work, if unencumbered, shall be paid no later than sixty (60) Days after the date of recordation of the Notice of Completion.
- B. Acceptance by Contractor of the final payment shall constitute a waiver of all claims against the District arising from this Contract.
- C. Payments to the Contractor shall not be construed to be an acceptance of any defective work or improper materials, or to relieve the Contractor of its obligations under the Contract Documents.

### **9-3 LIEN WAIVER**

The Contractor shall submit with each payment request the Contractor's conditional waiver of lien for the entire amount covered by such payment request, as well as a valid unconditional waiver of lien from the Contractor and all subcontractors and materialmen for all work and materials included in any prior invoices. Waivers of lien shall be in the forms prescribed by California Civil Code Section 3262. Prior to final payment by the District, the Contractor shall submit a final waiver of lien for the Contractor's work, together with releases of lien from any subcontractor or materialmen.

### **9-4 SUBSTITUTION OF SECURITY**

Upon the written request of the Contractor, delivered to Elsinore Valley Municipal Water District at least ten (10) days in advance, and at the sole costs of expense of the Contractor, the Contractor may substitute securities for any monies held by EVMWD to ensure the performance of the Contractor hereunder. The securities proposed to be substituted shall be specifically identified in the Contractor's notice, shall be limited to those listed in Government Code Section 16430 and to bank or savings and loan certificates of deposit, and shall be of a market value (as determined by EVMWD), at least equal to the amount of money withheld by EVMWD. Upon the approval of the proposed substitution by EVMWD, the securities may be deposited with EVMWD or with a state or federally chartered bank approved EVMWD as the escrow agent of the parties. The Contractor shall be the beneficial owner of these securities and shall receive interest thereon. An administrative fee of \$200 shall be charged by EVMWD to process a request for substitution by the Contractor.

## 9-5 PAYMENTS WITHHELD AND BACK CHARGES

In addition to amounts which the District may retain under other provisions of the Contract Documents, the District may withhold payments due to Contractor as may be necessary to cover:

- A. Stop Notice Claims.
- B. Defective work not remedied.
- C. Failure of Contractor to make proper payments to its subcontractors or suppliers.
- D. Completion of the Contract if there exists a reasonable doubt that the work can be completed for balance then unpaid.
- E. Damage to another contractor or third party.
- F. Amounts which may be due the District for claims against Contractor.
- G. Failure of Contractor to keep the record (“as-built”) drawings up to date.
- H. Failure to provide updates on the construction schedule.
- I. Site clean up.
- J. Failure of the Contractor to comply with requirements of the Contract Documents.
- K. Liquidated damages.
- L. Legally permitted penalties.

Upon completion of the Contract, the District will reduce the final Contract amount to reflect costs charged to the Contractor, backcharges or payments withheld pursuant to the Contract Documents.

## SECTION 10 – INSURANCE AND INDEMNITY

### 10-1 INSURANCE

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

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

1. *General Liability:* Insurance Services Office Commercial General Liability coverage (occurrence form CG 00 01) OR Insurance Services Office Owners and Contractors Protective Liability Coverage Form (CG 00 09 11 88) (coverage for operations of designated contractor);
2. *Automobile Liability:* Insurance Services Office Business Auto Coverage form number CA 00 01, code 1 (any auto);
3. *Workers' Compensation and Employer's Liability:* Workers' Compensation insurance as required by the State of California and Employer's Liability Insurance;
4. *Builders'/All Risk:* Builders'/All Risk insurance covering for all risks of loss, including explosion, collapse, underground excavation, and removal of lateral support (and including earthquakes and floods if requested by the District).

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

1. *General Liability:* \$2,500,000 per occurrence for bodily injury, personal injury, and property damage. If Commercial General Liability Insurance or other form with a general aggregate limit is used including, but not limited to, form CG 2503, either the general aggregate limit shall apply separately to this Contract/location or the general aggregate limit shall be twice the required occurrence limit;
2. *Automobile Liability:* \$2,500,000 per accident for bodily injury and property damage;
3. *Workers' Compensation and Employer's Liability:* Workers' compensation limits as required by the Labor Code of the State of California. Employer's Liability limits of \$1,000,000 each accident, policy limit bodily injury or disease, and each employee bodily injury or disease;
4. *Builders'/All Risk:* Completed value of the project with no coinsurance penalty provisions;

### 10-2 INSURANCE ENDORSEMENTS

The insurance policies shall contain the following provisions, or Contractor shall provide endorsements (amendments) on forms supplied or approved by the District to add the following provisions to the insurance policies:

- A. **General Liability.** (1) Such policy shall give Elsinore Valley Municipal Water District, the Board and each member of the Board, its officers, employees, agents and District designated volunteers insured status using ISO endorsement CG20 10 11 85, or CG20 10 01 plus CG20 37 10 01, or equivalent, with respect to the Work or operations performed by or on behalf of Contractor, including materials, parts or equipment furnished in connection with such work; (2) Consultant agrees to waive subrogation which any insurer of Contractor may acquire from Contractor by virtue of the payment of any loss; and (3) the insurance coverage shall be primary insurance as respects the District, its directors, officials, officers, employees, agents and volunteers, or if excess, shall stand in an unbroken chain of coverage excess of Contractor's scheduled underlying coverage. Any insurance or self-insurance maintained by the District, its directors, officials, officers, employees, agents, and volunteers shall be excess of Contractor's insurance and shall not be called upon to contribute with it.
- B. **Automobile Liability.** (1) Such policy shall give Elsinore Valley Municipal Water District, the Board and each member of the Board, its officers, employees, agents and District designated volunteers insured status using ISO endorsement CG20 10 11 85, or CG20 10 01 plus CG20 37 10 01, or equivalent, with respect to the ownership, operation, maintenance, use, loading or unloading of any auto owned, leased, hired or borrowed by Contractor or for which Contractor is responsible; (2) Consultant agrees to waive subrogation which any insurer of Contractor may acquire from Contractor by virtue of the payment of any loss; and (3) the insurance coverage shall be primary insurance as respects the District, its directors, officials, officers, employees, agents and volunteers, or if excess, shall stand in an unbroken chain of coverage excess of Contractor's scheduled underlying coverage. Any insurance or self-insurance maintained by the District, its directors, officials, officers, employees, agents, and volunteers shall be excess of Contractor's insurance and shall not be called upon to contribute with it in any way.
- C. **Workers' Compensation and Employer's Liability Coverage.** The insurer shall agree to waive all rights of subrogation against the District, its directors, officials, officers, employees, agents, and volunteers for losses paid under the terms of the insurance policy which arise from work performed by Contractor.
- D. **All Coverages.** Each insurance policy required by this Contract shall be endorsed to state that: (1) coverage shall not be suspended, voided, reduced or canceled except after thirty (30) days prior written notice by certified mail, return receipt requested, has been given to the District; and (2) any failure to comply with reporting or other provisions of the policies, including breaches of warranties, shall not affect coverage provided to the District, its directors, officials, officers, employees, agents and volunteers.
- E. **Builders'/All Risk Policy Requirements.** The builders'/all risk insurance shall provide that the District be named as loss payee. In addition, the insurer shall waive all rights of subrogation against the District.
- F. **Separation of Insureds; No Special Limitations.** All insurance required by this Section shall contain standard separation of insureds provisions. In addition, such insurance shall not contain any special limitations on the scope of protection afforded to the District, its



directors, officials, officers, employees, agents, and volunteers.

### **10-3 DEDUCTIBLES AND SELF-INSURANCE RETENTIONS**

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

### **10-4 ACCEPTABILITY OF INSURERS**

Insurance is to be placed with insurers with a current A.M. Best's rating no less than A:VII, licensed to do business in California, and satisfactory to the District. Exception may be made for the State Compensation Insurance Fund when not specifically rated.

### **10-5 VERIFICATION OF COVERAGE**

The Contractor shall not commence Work under this Contract until it has provided evidence satisfactory to the District that it has secured all insurance required under this Section. In addition, Contractor shall not allow any subcontractor to commence work on any subcontract until it has provided evidence satisfactory to the District that the subcontractor has secured all insurance required under this Section. Failure to provide and maintain all required insurance shall be grounds for the District to terminate this Contract for cause. Contractor shall furnish District with original certificates of insurance and endorsements effecting coverage required by this Contract on forms satisfactory to the District. The certificates and endorsements for each insurance policy shall be signed by a person authorized by that insurer to bind coverage on its behalf, and shall be on forms supplied or approved by the District. All certificates and endorsements must be received and approved by the District before work commences. The District reserves the right to require complete, certified copies of all required insurance policies, at any time.

- A. **Subcontractors.** Contractor shall make certain that all of its subcontractors meet the requirements of this Section before commencing Work. In addition, Contractor shall include all subcontractors as insureds under its policies or shall furnish separate certificates and endorsements for each subcontractor. All coverages for subcontractors shall be subject to all of the requirements stated herein.
- B. **Reporting of Claims.** Contractor shall report to the District, in addition to Contractor's insurer, any and all insurance claims submitted by Contractor in connection with the Work under this Contract.

### **10-6 INDEMNIFICATION**

Contractor shall defend (with Counsel of District's choosing), indemnify and hold the District, its officials, officers, agents, employees, and representatives free and harmless from any and all claims, demands, causes of action, costs, expenses, liabilities, losses, damages or injuries, in law or equity,

INSURANCE AND INDEMNITY

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

## SECTION 11 – WORK SITE

### 11-1 EXISTENCE OF UTILITIES AT THE WORK SITE

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

### 11-2 PERMITS AND LICENSES

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

- A. Contractor shall obtain and pay for all other permits and licenses required for The Work,

including excavation permit and for plumbing, mechanical, and electrical work, and for operations in or over public streets or right of way under jurisdiction of public agencies other than the District.

- B. The Contractor shall arrange and pay for all off-site inspection of the Work related to permits and licenses, including certification, required by the specifications, drawings, or by governing authorities, except for such off-site inspections delineated as the District's responsibility pursuant to the Contract Documents.
- C. Before Acceptance of the Project, the Contractor shall submit all licenses, permits, certificates of inspection and required approvals to the District.

### **11-3 UTILITY USAGE**

- A. All temporary utilities, including but not limited to electricity, water, gas, and telephone, used on the Work shall be furnished and paid for by Contractor. Contractor shall provide necessary temporary distribution systems, including meters, if necessary, from distribution points to points on The Work where the utility is needed. Upon completion of The Work, Contractor shall remove all temporary distribution systems.
- B. Contractor shall provide necessary and adequate utilities and pay all costs for water, electricity, gas, oil, and sewer charges required for completion of the Project.
- C. All permanent meters installed shall be listed in the Contractor's name until Project Acceptance.
- D. If the Contract is for construction in existing facilities, Contractor may, with prior written approval of the District, use the District's existing utilities by compensating the District for utilities used by Contractor.
- E. Contractor shall contact EVMWD for water service and pay for a construction water hydrant meter. The meter will be installed by EVMWD and may not be moved by the Contractor. The cost for the renting the meter and water used shall be included in the total bid price and separate compensation will not be made. Contact EVMWD Customer Service for the current cost of rent and monthly fee for a hydrant meter.

### **11-4 INSPECTION FEES FOR PERMANENT UTILITIES**

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

## 11-5 TRENCHES

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

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

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

## 11-6 DIVERSION OF RECYCLABLE WASTE MATERIALS

In compliance with the applicable local waste reduction and recycling efforts, Contractor shall divert all Recyclable Waste Materials to appropriate recycling centers. Contractor will be required to submit weight tickets and written proof of diversion with its monthly progress payment requests. Contractor shall complete and execute any certification forms required by District or other applicable

agencies to document Contractor's compliance with these diversion requirements. All costs incurred for these waste diversion efforts shall be the responsibility of the Contractor.

#### **11-7 REMOVAL OF HAZARDOUS MATERIALS**

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

#### **11-8 AIR POLLUTION CONTROL**

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

#### **11-9 COMPLIANCE WITH STATE STORM WATER PERMIT**

- A. Contractor shall be required to comply with all conditions of the State Water Resources Control Board (SWRCB) National Pollutant Discharge Elimination System (NPDES) General Permit (California Permit No. 2009-0009-DWR Permit) for Waste Discharge Requirements for Discharges of Storm Water Runoff Associated with Construction Activity ("Permit") for all construction activity which results in the disturbance of in excess of one acre of total land area or which is part of a larger common area of development or sale.
- B. Contractor shall be responsible for all documents required in the permit. The contractor shall submit to the District a complete hard copy and electronic format of the permit registration documents (PRD). The contractor shall allow the District ten (10) working days to review the documents. If revisions are required as determined by the Engineer, the Contractor shall revise and resubmit the PRDs within three (3) working days of receipt of the Engineer's comments. The Contractor shall pay all fees for the permits for this project. Contractor shall be solely responsible for preparing and implementing a Storm Water Pollution Prevention Plan ("SWPPP") prior to initiating Work. In bidding on this Contract, it shall be Contractor's responsibility to evaluate the cost of procuring the Permit and preparing the SWPPP as well as complying with the SWPPP and any necessary revision to the SWPPP. Contractor shall comply with all requirements of the SWRCB. Contractor shall include all costs of compliance with specified requirements in the Contract amount.
- C. Contractor shall be responsible for procuring, implementing, and complying with the provisions of the Permit and the SWPPP, including the standard provisions, inspecting, photographing, sampling, monitoring and reporting requirements as required by the Permit. Contractor shall provide copies of all reports and monitoring information to the Engineer.

- D. Contractor shall comply with the lawful requirements of any applicable municipality, the District, drainage district, and other local agencies regarding discharges of storm water to separate storm drain system or other watercourses under their jurisdiction, including applicable requirements in municipal storm water management programs.
- E. Storm, surface, nuisance, or other waters may be encountered at various times during construction of The Work. Therefore, the Contractor, by submitting a Bid, hereby acknowledges that it has investigated the risk arising from such waters, has prepared its Bid accordingly, and assumes any and all risks and liabilities arising therefrom.
- F. Failure to comply with the Permit is in violation of federal and state law. In the event the District incurs any Administrative Civil Liability or Mandatory Minimum fine imposed by the RWQCB as a result of the Contractor's failure to fully implement the provisions of this section and permit requirements, the Engineer may withhold from payments otherwise due the Contractor, a sufficient amount to cover the Civil Liability costs. Contractor hereby agrees to indemnify and hold harmless District, its officials, officers, agents, employees and authorized volunteers from and against any and all claims, demands, losses or liabilities of any kind or nature which District, its officials, officers, agents, employees and authorized volunteers may sustain or incur for noncompliance with the Permit arising out of or in connection with the Project, except for liability resulting from the sole established negligence, willful misconduct or active negligence of the District, its officials, officers, agents, employees or authorized volunteers. District may seek damages from Contractor for delay in completing the Contract in accordance with the Contract Documents, caused by Contractor's failure to comply with the Permit.

#### **11-10 SOILS INVESTIGATIONS**

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

#### **11-11 LAYOUT AND FIELD ENGINEERING**

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

## **11-12 EXCESSIVE NOISE**

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

## **11-13 PROTECTION OF WORK AND PROPERTY**

- A. The Contractor shall be responsible for all damages to persons or properties that occur as a result of The Work. Contractor shall be responsible for the proper care and protection of all materials delivered and Work performed until completion and final Acceptance by the District. All Work shall be solely at the Contractor's risk. Contractor shall adequately protect adjacent property from settlement or loss of lateral support as necessary. Contractor shall comply with all applicable safety laws and building codes to prevent accidents or injury to persons on, about, or adjacent to the Project site where Work is being performed. Contractor shall erect and properly maintain at all times, as required by field conditions and progress of work, all necessary safeguards, signs, barriers, lights, and watchmen for protection of workers and the public, and shall post danger signs warning against hazards created in the course of construction.
- B. In an emergency affecting safety of life or of work or of adjoining property, Contractor, without special instruction or authorization from the Engineer, is hereby permitted to act to prevent such threatened loss or injury; and Contractor shall so act, without appeal, if so authorized or instructed by the Engineer or the District. Any compensation claimed by Contractor on account of emergency work shall be determined by and agreed upon by the District and the Contractor.
- C. Contractor shall provide such heat, covering, and enclosures as are necessary to protect all Work, materials, equipment, appliances, and tools against damage by weather conditions.
- D. Contractor shall take adequate precautions to protect existing sidewalks, curbs, pavements, utilities, and other adjoining property and structures, and to avoid damage thereto, and Contractor shall repair any damage thereto caused by The Work operations. Contractor shall:



1. Enclose the working area with a substantial barricade, and arrange work to cause minimum amount of inconvenience and danger to the public.
2. Provide substantial barricades around any shrubs or trees indicated to be preserved.
3. Deliver materials to the Project site over a route designated by the Engineer.
4. Provide any and all dust control required and follow the Applicable air quality regulations as appropriate. If the Contractor does not comply, the District shall have the immediate authority to provide dust control and deduct the cost from payments to the Contractor.
5. Confine Contractor's apparatus, the storage of materials, and the operations of its workers to limits required by law, ordinances, permits, or directions of the Engineer. Contractor shall not unreasonably encumber the Project site with its materials.
6. Take care to prevent disturbing or covering any survey markers, monuments, or other devices marking property boundaries, corners or street centerlines. If such markers are disturbed by accident, they shall be replaced by an approved civil engineer or land surveyor, at no cost to the District.
7. Ensure that existing facilities, fences and other structures are all adequately protected and that, upon completion of all Work, all facilities that may have been damaged are restored to a condition acceptable to the District.
8. Preserve and protect from injury all buildings, pole lines and all direction, warning, and mileage signs that have been placed within the right-of-way.
9. At the completion of work each day, leave the Project site in a clean, safe condition.
10. Comply with any staged construction and traffic handling plans. Access to residences and businesses shall be maintained at all times.
11. Sodded lawns shall be replaced in kind on a properly prepared soil foundation and maintained until said work is accepted by the District.

These precautionary measures will apply continuously and not be limited to normal working hours. Full compensation for the Work involved in the preservation of life, safety and property as above specified shall be considered as included in the prices paid for the various contract items of Work, and no additional allowance will be made therefor.

- E. Should damage to persons or property occur as a result of The Work, Contractor shall be responsible for proper investigation, documentation, including video or photography, to adequately memorialize and make a record of what transpired. The District shall be entitled to inspect and copy any such documentation, video, or photographs.

#### **11-14 CLEANING UP**

- A. Contractor at all times shall keep premises free from debris such as waste, rubbish, and excess materials and equipment. Contractor shall not store debris under, in, or about the premises. Upon completion of Work, Contractor shall clean the interior and exterior of the building or improvement including fixtures, equipment, walls, floors, ceilings, roofs, window sills and ledges, horizontal projections, and any areas where debris has collected so surfaces are free from foreign material or discoloration. Contractor shall clean and polish all glass, plumbing fixtures, and finish hardware and similar finish surfaces and equipment and contractor shall also remove temporary fencing, barricades, planking and construction

toilet and similar temporary facilities from site. Contractor shall also clean all buildings, asphalt, and concrete areas to the degree necessary to remove oil, grease, fuel, or other stains caused by Contractor operations or equipment.

- B. Contractor shall fully clean up the site at the completion of The Work. If the Contractor fails to immediately clean up at the completion of The Work, the District may do so and the cost of such clean up shall be charged back to the Contractor.

#### **11-15 SEPARATE CONTRACTS**

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

#### **11-16 OCCUPANCY**

The district reserves the right to occupy or utilize any portion of the work at any time before completion, and such occupancy or use shall not constitute acceptance of any part of work covered by this contract. This use shall not relieve the contractor of its responsibilities under the contract.

#### **11-17 OPERATION OF EXISTING WATER FACILITIES**

The Contractor shall not operate any of the existing water system including pumps, motors, or hydrants but shall contact the District two (2) working days in advance with a list and location of the water system facilities that will require operating, opening, stopping, or closure by the District.

At the option of the Engineer, the Contractor may be permitted to operate valves for the purpose of making connections to existing mains. The District will perform all notification to existing customers regarding temporary loss of service.

### **11-18 SPECIAL PROJECT SITE MAINTENANCE AND PUBLIC CONVENIENCE AND SAFETY**

Pursuant to the provisions of Section 7-8 and Section 7-10 of EVMWD Standard Drawings and Specifications and these special provisions, the Contractor is responsible for project site maintenance and for public convenience and safety. Payments for compliance with these provisions are considered as included in the prices bid for other contract items.

The District, however, to maintain good public relations, may deem it necessary to require special project site maintenance and public convenience and safety actions and work to be performed by the Contractor that are over and above those required by the provisions of Section 7-8 and Section 7-10 of EVMWD Standard Drawings and Specifications and these special provisions.

These actions and work shall be as directed by the Engineer in writing and payment for compliance therewith shall be on a cost plus basis for extra work.

## **SECTION 12 - TESTS AND INSPECTIONS**

### **12-1 NOTICE**

If the Contract Documents, the Engineer, or any instructions, laws, ordinances, or public authorities require any part of The Work to be tested or approved, Contractor shall provide the Engineer at least two (2) working days notice of its readiness for observation or inspection. If inspection is by a public authority other than the District, Contractor shall promptly inform the District of the date fixed for such inspection. Required certificates of inspection (or similar) shall be secured by Contractor. Costs for District testing and District inspection shall be paid by the District. Costs of tests for Work found not to be in compliance shall be paid by the Contractor.

### **12-2 INSPECTION OF THE WORK**

- A. Inspection of the Work will be provided by the District. Inspectors may be District employees or contract services inspectors. In either case, they represent the District and the Contractor shall follow their directions.
- B. If any Work is done or covered up without the required testing or inspection and approval, the Contractor shall uncover or deconstruct the Work and the Work shall be redone after completion of the inspection or testing at the Contractor's cost, in compliance with the Contract Documents.

### **12-3 SELECTION OF LABORATORY**

Where inspection and testing are to be conducted by an independent laboratory or agency, materials or samples of materials to be inspected or tested shall be selected by such laboratory or agency, or by the District, and not by Contractor. All tests or inspections of materials shall be made in accordance with the commonly recognized standards of national organizations.

### **12-4 MANUFACTURED MATERIALS**

In advance of manufacture of materials to be supplied by Contractor which must be tested or inspected, Contractor shall notify the District so that the District may arrange for testing at the source of supply. Any materials which have not satisfactorily passed such testing and inspection shall not be incorporated into The Work.

- A. If the manufacture of materials to be inspected or tested will occur in a plant or location outside the geographic limits of District, the Contractor shall pay for any excessive or unusual costs associated with such testing or inspection, including but not limited to travel time, travel cost, standby time, and required food and lodging.

### **12-5 REEXAMINATION**

Reexamination of Work may be ordered by the District. If so ordered, Work must be uncovered or deconstructed by Contractor. If Work is found to be in accordance with the Contract Documents, the

District shall pay the costs of reexamination and reconstruction. If such work is found not to be in accordance with the Contract Documents, Contractor shall pay all costs.

## **12-6 SOILS COMPACTION TESTING**

All soils compaction testing will be done by a licensed geotechnical engineer furnished by the District. Soils compaction testing will be done for all footings and foundations prior to placement of rebar or concrete. For pipeline construction, soil compaction testing will be done at 100-foot intervals at the bottom of the trench prior to placement of pipe bedding; at the top of the pipe bedding above the pipe; every two vertical feet of trench backfill; at the top of the trench backfill, which should be the bottom of the pavement section; and at the top of the aggregate base prior to pavement construction.

## SECTION 13 - SUPERVISION

### 13-1 CONTRACTOR'S MEANS AND METHODS

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

### 13-2 CONTRACTOR'S SUPERVISION

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

### 13-3 AUTHORIZED REPRESENTATIVES

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

### 13-4 INSPECTOR'S FIELD OFFICE

- A. If specifically called for in the bid items, the Contractor shall be responsible for providing the inspector's field office. The Office shall be a substantial waterproof construction with adequate natural light and ventilation by means of stock design windows. Door shall have a key type lock or padlock clasp. The office shall have heating and air conditioning and shall be equipped with a telephone, a telephone answering machine, an internet connection, and a fax machine at Contractor's expense.
- B. A table satisfactory for the study of plans and two chairs shall be provided by Contractor. Contractor shall provide and pay for adequate electric lights, local telephone service, and adequate heat and air conditioning for the field office until authorized removal.

## SECTION 14 – LABOR

### 14-1 EMPLOYEES

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

### 14-2 SUBCONTRACTORS

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

### 14-3 VERIFICATION OF EMPLOYMENT ELIGIBILITY

By executing this contract, contractor verifies that it fully complies with all requirements and restrictions of state and federal law respecting the employment of undocumented aliens, including, but not limited to, the immigration reform and control act of 1986, as may be amended from time to time, and shall require all subconsultants and sub-subconsultants to comply with the same. Contractor shall avoid any violation of any such law during the term of this contract by registering for and participating in the federal e-verify program. Contractor shall execute and submit an acknowledgment of participation in the federal e-verify program in such form as may be provided by the district prior to commencing any work under this contract. Contractor further agrees, once participating in e-verify and for the duration of this contract, to submit the names of all new employees to verify eligibility for employment. In addition, for the duration of this contract, contractor agrees to use the social security number verification service (ssnvs) for all existing employees and all new employees hired by the contractor.

#### **14-4 HOURS OF WORK**

- A. Eight (8) hours of work shall constitute a legal day's work. The Contractor and each subcontractor shall forfeit, as penalty to the District, twenty-five dollars (\$25) for each worker employed in the execution of Work by the Contractor or any subcontractor for each day during which such worker is required or permitted to work more than eight (8) hours in any one day and forty (40) hours in any week in violation of the provisions of the Labor Code, and in particular, Section 1810 to Section 1815, except as provided in Labor Code Section 1815.
- B. Work shall be accomplished on a regularly scheduled eight (8) hour per day work shift basis, Monday through Friday, between the hours of 7:00 a.m. and 5:00 p.m.
- C. It shall be unlawful for any person to operate, permit, use, or cause to operate any of the following at the Project site, other than between the hours of 7:00 a.m. to 5:00 p.m., Monday through Friday, with no Work allowed on District-observed holidays, unless otherwise Approved by the Engineer:
  - 1. Powered Vehicles
  - 2. Construction Equipment
  - 3. Loading and Unloading Vehicles
  - 4. Power Tools

#### **14-5 PAYROLL RECORDS**

- A. Pursuant to Labor Code Section 1776, the Contractor and each subcontractor shall maintain weekly certified payroll records showing the name, address, social security number, work classification, straight time and overtime hours paid each day and week, and the actual per diem wages paid to each journeyman, apprentice, worker or other employee employed in connection with the work. Contractor shall certify under penalty of perjury that records maintained and submitted by Contractor are true and accurate. Contractor shall also require subcontractor(s) to certify weekly payroll records under penalty of perjury.
- B. The payroll records described herein shall be certified and submitted by the Contractor at a time designated by the District. The Contractor shall also provide the following:
  - 1. A certified copy of the employee's payroll records shall be made available for inspection or furnished to such employee or his or her authorized representative on request.
  - 2. A certified copy of all payroll records described herein shall be made available for inspection or furnished upon request of the Department of Industrial Relations ("DIR").
- C. The certified payroll records shall be on forms provided by the Division of Labor Standards Enforcement ("DLSE") of the DIR or shall contain the same information as the forms provided by the DLSE.



- D. Any copy of records made available for inspection and furnished upon request to the public shall be marked or obliterated in such a manner as to prevent disclosure of an individual's name, address, and social security number. The name and address of the Contractor or any subcontractor shall not be marked or obliterated.
- E. In the event of noncompliance with the requirements of this Section, the Contractor shall have ten (10) days in which to comply subsequent to receipt of written notice specifying any item or actions necessary to ensure compliance with this Section. Should noncompliance still be evident after such ten (10) day period, the Contractor shall, as a penalty to the District, forfeit Twenty-five Dollars (\$25.00) for each day, or portion thereof, for each worker until strict compliance is effectuated. Upon the request of the DIR, such penalties shall be withheld from contract payments.

#### **14-6 PREVAILING RATES OF WAGES**

- A. The Contractor is aware of the requirements of Labor Code Sections 1720 et seq. and 1770 et seq., as well as California Code of Regulations, Title 8, Section 16000 et seq. ("Prevailing Wage Laws"), which require the payment of prevailing wage rates and the performance of other requirements on certain "public works" and "maintenance" projects. Since this Project involves an applicable "public works" or "maintenance" project, as defined by the Prevailing Wage Laws, and since the total compensation is \$1,000 or more, Contractor agrees to fully comply with such Prevailing Wage Laws.
- B. The Contractor shall obtain a copy of the prevailing rates of per diem wages at the commencement of this Agreement from the website of the Division of Labor Statistics and Research of the Department of Industrial Relations located at [www.dir.ca.gov/dlsr/](http://www.dir.ca.gov/dlsr/). In the alternative, the Contractor may view a copy of the prevailing rates of per diem wages at the District. Contractor shall make copies of the prevailing rates of per diem wages for each craft, classification, or type of worker needed to perform work on the Project available to interested parties upon request, and shall post copies at the Contractor's principal place of business and at the Project site. Contractor shall defend, indemnify and hold the District, its elected officials, officers, employees, and agents free and harmless from any claims, liabilities, costs, penalties or interest arising out of any failure or alleged failure to comply with the Prevailing Wage Laws.
- C. The Contractor and each subcontractor shall forfeit as a penalty to the District not more than fifty dollars (\$50) for each calendar day, or portion thereof, for each worker paid less than the stipulated prevailing wage rate for any work done by him, or by any subcontract under him, in violation of the provisions of the Labor Code. The difference between such stipulated prevailing wage rate and the amount paid to each worker for each calendar day or portion thereof for which each worker was paid less than the stipulated prevailing wage rate shall be paid to each worker by the Contractor.
- D. Contractor shall post at appropriate conspicuous points on the Project site, a schedule showing all determined general prevailing wage rates and all authorized deductions, if any, from unpaid wages actually earned.

#### **14-7 EMPLOYMENT OF APPRENTICES**

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

#### **14-8 NONDISCRIMINATION/EQUAL EMPLOYMENT OPPORTUNITY**

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

#### **14-9 LABOR/EMPLOYMENT SAFETY**

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

#### **14-10 SANITARY FACILITIES**

- A. Contractor shall provide sanitary temporary toilet buildings for the use of all workers. All toilets shall comply with local codes and ordinances. Toilets shall be kept supplied with toilet paper and shall have workable door fasteners. Toilets shall be serviced no less than once weekly and shall be present in a quantity of not less than 1 per 20 workers as required by Cal-Osha regulation. The toilets shall be maintained in a sanitary condition at all times. Use of toilet facilities in the work under construction shall not be permitted.
- B. In addition to temporary toilet buildings, the contractor shall also provide temporary hand washing stations equipped with potable water, soap and paper towels for hand and face washing. A washing station will be provided for each temporary toilet. Washing stations will be serviced no less than weekly unless additional servicing is necessary to keep water, soap, and towels available for all workers. Any other sanitary facilities required by Cal-Osha shall be the responsibility of the contractor.

## SECTION 15 - RESOLUTION OF CONSTRUCTION CLAIMS

### 15-1 CLAIMS OF \$375,000 OR LESS

In accordance with Public Contract Code Sections 20104 *et seq.* and other applicable law, public works claims of \$375,000 or less which arise between the Contractor and the District shall be resolved under the following statutory procedure unless the District has elected to resolve the dispute pursuant to Public Contract Code Section 10240 *et seq.*

- A. **All Claims:** All claims shall be submitted in writing and accompanied by substantiating documentation. Claims must be filed on or before the date of final payment unless other notice requirements are provided in the contract. "Claim" means a separate demand by the Contractor for (1) a time extension, (2) payment of money or damages arising from work done by or on behalf of the Contractor and payment of which is not otherwise expressly provided for or the Contractor is not otherwise entitled, or (3) an amount the payment of which is disputed by the District.
- B. **Claims Under \$50,000:** The District shall respond in writing to the claim within 45 days of receipt of the claim, or, the District may request, in writing, within 30 days of receipt of the claim, any additional documentation supporting the claim or relating to defenses or claims the District may have. If additional information is needed thereafter, it shall be provided upon mutual agreement of the District and the Contractor. The District's written response shall be submitted 15 days after receiving the additional documentation, or within the same period of time taken by the Contractor to produce the additional information, whichever is greater.
- C. **Claims over \$50,000 but less than or equal to \$375,000:** The District shall respond in writing within 60 days of receipt, or, may request in writing within 30 days of receipt of the claim, any additional documents supporting the claim or relating to defenses or claims the District may have against the Contractor. If additional information is needed thereafter, it shall be provided pursuant to mutual agreement between the District and the Contractor. The District's response shall be submitted within 30 days after receipt of the further documents, or within the same period of time taken by the Contractor to produce the additional information or documents, whichever is greater. The Contractor shall make these records and documents available at all reasonable times, without any direct charge.
- D. The Contractor will submit the claim justification in the following format:
  1. Summary of claim merit and price, and Contract clause pursuant to which the claim is made.
  2. List of documents relating to claim
    - a. Specifications
    - b. Drawings
    - c. Clarifications (Requests for Information)
    - d. Schedules
    - e. Other

3. Chronology of events and correspondence
  4. Analysis of claim merit
  5. Analysis of claim cost
  6. Analysis of time impact analysis in CPM format
  7. Cover letter and certification of validity of the claim
- E. If the Contractor disputes the District's response, or if the District fails to respond within the statutory time period(s), the Contractor may so notify the District within 15 days of the receipt of the response or the failure to respond, and demand an informal conference to meet and confer for settlement. Upon such demand, the District shall schedule a meet and confer conference within 30 Days.
- F. The Contractor must comply with the claims filing procedures set forth in Government Code Sections 900 et seq. for any claim or any portion thereof that remains in dispute. For purposes of those provisions, the time within which a claim must be filed shall be tolled from the time the Contractor submits the written claim until the time the claim is denied, including any time utilized for the meet and confer conference.
- G. Submission of a claim, properly certified, with all required supporting documentation, and written rejection or denial of all or part of the claim by the District, is a condition precedent to any action, proceeding, litigation, suit, general conditions claim, or demand for arbitration by Contractor.

## **15-2 GOVERNMENT CODE CLAIM**

In addition to any and all contract requirements pertaining to notices of and requests for compensation or payment for extra work, disputed work, construction claims and/or changed conditions, the Contractor must comply with the claim procedures set forth in Government Code Section 900 et seq. prior to filing any lawsuit against the District. Such Government Code claims and any subsequent lawsuit based upon the Government Code claims shall be limited to those matters that remain unresolved after all procedures pertaining to extra work, disputed work, construction claims, and/or changed conditions have been followed by Contractor. If no such Government Code claim is submitted, or if the prerequisite contractual requirements are not otherwise satisfied as specified herein, Contractor shall be barred from bringing and maintaining a valid lawsuit against the District.

## SECTION 16 - TERMINATION

### 16-1 DISTRICT'S RIGHT TO TERMINATE CONTRACT

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

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

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

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

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

1. Stop Work as specified in the Notice.
2. Complete any Work specified in the Notice of Termination in a least cost/shortest time manner while still maintaining the quality called for under the Contract Documents.
3. Leave the property upon which the Contractor was working and upon which the facility (or facilities) forming the basis of the Contract Documents is situated in a safe and sanitary manner such that it does not pose any threat to the public health or safety.

4. Terminate all subcontracts to the extent that they relate to the portions of The Work terminated.
  5. Place no further subcontracts or orders, except as necessary to complete the remaining portion of The Work.
  6. Submit to the District, within ten (10) Days from the effective date of the Notice of Termination, all of the documentation called for by the Contract Documents to substantiate all costs incurred by the Contractor for labor, materials and equipment through the Effective Date of the Notice of Termination. Any documentation substantiating costs incurred by the Contractor solely as a result of the District's exercise of its right to terminate this Contract pursuant to this clause, which costs the Contractor is authorized under the Contract Documents to incur, shall: (i) be submitted to and received by the District no later than thirty (30) Days after the Effective Date of the Notice of Termination; (ii) describe the costs incurred with particularity; and (iii) be conspicuously identified as "Termination Costs Occasioned by the District's Termination for Convenience.
  7. These provisions are in addition to and not in limitation of any other rights or remedies available to the District.
- C. Notwithstanding any other provision of this Article, when immediate action is necessary to protect life and safety or to reduce significant exposure or liability, the District may immediately order Contractor to cease Work on the Project until such safety or liability issues are addressed to the satisfaction of the District or the Contract is terminated.

## SECTION 17 - WARRANTY AND GUARANTEE

### 17-1 WARRANTY AND GUARANTEE

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

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

## SECTION 18 - MISCELLANEOUS

### 18-1 DOCUMENT RETENTION & EXAMINATION

- A. In accordance with Government Code Section 8546.7, records of both the District and the Contractor shall be subject to examination and audit by the State Auditor General for a period of three (3) years after final payment.
- B. Contractor shall make available to the District any of the Contractor's other documents related to the Project immediately upon request of the District.
- C. In addition to the State Auditor rights above, the District shall have the right to examine and audit all books, estimates, records, contracts, documents, bid documents, subcontracts, and other data of the Contractor (including computations and projections) related to negotiating, pricing, or performing the modification in order to evaluate the accuracy and completeness of the cost or pricing data at no additional cost to the District, for a period of four (4) years after final payment.

### 18-2 NOTICE AND SERVICE THEREOF

All notices shall be in writing and either served by personal delivery or mailed to the other party as designated in the bid forms. Written notice to the contractor shall be addressed to contractor's principal place of business unless contractor designates another address in writing for service of notice. Notice to district shall be addressed to the district as designated in the notice inviting bids unless district designates another address in writing for service of notice. Notice shall be effective upon receipt or five (5) days after being sent by first class mail, whichever is earlier. Notice given by facsimile shall not be effective unless acknowledged in writing by the receiving party.

### 18-3 NOTICE OF THIRD PARTY CLAIMS

Pursuant to public contract code Section 9201, the district shall provide contractor with timely notification of the receipt of any third-party claim relating to the contract.

### 18-4 STATE LICENSE BOARD NOTICE

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

### 18-5 INTEGRATION

- A. **Oral Modifications Ineffective:** No oral order, objection, direction, claim or notice by any party or person shall affect or modify any of the terms or obligations contained in the Contract Documents.



- B. **Contract Documents Represent Entire Contract:** The Contract Documents represent the entire agreement of the District and Contractor.

#### **18-6 ASSIGNMENT**

Contractor shall not assign, transfer, convey, sublet, or otherwise dispose of this contract or any part thereof including any claims, without prior written consent of the District. Any assignment without the written consent of the district shall be void. Any assignment of money due or to become due under this contract shall be subject to a prior lien for services rendered or material supplied for performance of work called for under the contract documents in favor of all persons, firms, or corporations rendering such services or supplying such materials to the extent that claims are filed pursuant to the civil code, the code of civil procedure or the government code.

#### **18-7 CHANGE IN NAME AND NATURE OF CONTRACTOR'S LEGAL ENTITY**

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

#### **18-8 ASSIGNMENT OF ANTITRUST ACTIONS**

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

#### **18-9 PROHIBITED INTERESTS**

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

#### **18-10 LAWS AND REGULATIONS**

- A. Contractor shall give all notices and comply with all laws, ordinances, rules and regulations bearing on conduct of work as indicated and specified. If Contractor observes that drawings and specifications are at variance therewith, he shall promptly notify the Engineer in writing and any necessary changes shall be adjusted as provided for in this Contract for changes in work. If Contractor performs any work knowing it to be contrary to such laws, ordinances, rules and regulations, and without such notice to the Engineer, he shall bear all costs arising therefrom.

- B. Contractor shall be responsible for familiarity with the Americans with Disabilities Act (“ADA”) (42 U.S.C. § 12101 et seq.). The Work will be performed in compliance with ADA regulations.

#### **18-11 PATENT FEES OR ROYALTIES**

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

#### **18-12 OWNERSHIP OF DRAWINGS**

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

#### **18-13 NOTICE OF TAXABLE POSSESSORY INTEREST**

In accordance with revenue and Taxation Code Section 107.6, the contract documents may create a possessory interest subject to personal property taxation for which contractor will be responsible.

## **SECTION 19 – STORM WATER RUNOFF CONTROL PROGRAM**

### **19-1 DESCRIPTION**

- A. The federal government regulates the discharge of storm water through the National Pollutant Discharge Elimination System (NPDES). Under this system, the California State Water Resources Control Board (SWRCB) has obtained a state-wide General Permit For Storm Water Discharges Associated With Construction Activity (General Permit). This Section describes work necessary by the Contractor to allow the District to comply with the SWRCB's General Permit for discharges of storm water associated with construction activities, as the permit requirements are edited to fit. Specifically, this includes the development and implementation of a Storm Water Pollution Prevention Plan (SWPPP) and Monitoring and Reporting Program (M&RP). The work must reflect the Contractor's experience, resources, and capabilities in determining and meeting the requirements of the General Permit.
- B. The General Permit does not preempt or supersede the authority of local storm water management agencies to prohibit, restrict, or control storm water discharges to separate storm sewer systems or other watercourses within their jurisdiction.
- C. Disposal of construction water from operations such as groundwater dewatering and water used for testing, disinfecting, and flushing pipelines is not part of the work under this Section.

### **19-2 GENERAL CONSTRUCTION ACTIVITY STORM WATER PERMIT**

- A. The Contractor shall read and be familiar with all requirements contained in the General Permit necessary to develop an SWPPP and M&RP. Attention is directed to the publication entitled "Storm Water Quality Handbooks" which have been prepared by the State and should assist the Contractor in the development of the SWPPP. Copies of the handbooks may be purchased by writing the Department of Transportation, Material Operations Branch, Publication Unit, 1900 Royal Oaks Drive, Sacramento, CA 95815, telephone 916-445-3520.
- B. The contractor shall note that compliance with the requirements contained in the General Permit may require the use of erosion and sedimentation control procedures outside the limits of immediate construction activity.
- C. The Contractor shall read and be familiar with the Co-Permittee additional ordinances and rules on storm water management, if they exist, in the jurisdiction in which the project will take place, and adhere to these rules. The Contractor will ensure that the SWPPP that is developed accounts for any of the additional Co-Permittee ordinance rules. The Contractor shall develop inspection checklists to ensure compliance with these additional ordinance rules.

### **19-3 NOTICE OF INTENT**

The General Permit requires the District to file a NOI with the SWRCB and include a copy of the NOI in the SWPPP. The Contractor shall assist the District in preparing the NOI and shall include the NOI in the SWPPP. The Contractor will recognize that the numbers provided by the District in the NOI, Section IV, noting the size of the construction site area and the size of the disturbed area are only estimates. It is the responsibility of the Contractor to reassess these numbers once all plans for the project are finalized, include the updated numbers in the SWPPP, and ensure that the SWPPP is appropriate for the Contractor-calculated project area. The Contractor's calculations will also be included in the SWPPP.

### **19-4 SUBMITTALS**

Submit the SWPPP and M&RP following the procedure described for shop drawings in Section 1-4 and Section 19-7 of EVMWD Standard Drawings and Specifications.

### **19-5 MEASUREMENT AND PAYMENT**

- A. Contractor shall include all costs for preparing the SWPPP and M&RP in the bid item and in the Bid Form. Contractor shall include all costs for preparing the SWPPP and M&RP as part of the lump-sum bid amount stated in the Proposal.
- B. Contractor shall be responsible for all of his costs associated with the implementation of the SWPPP and coordination with the Owner for the Owner's implementation of the MP, including the installation, maintenance, and removal of erosion control practices specified in the SWPPP upon completion of the project or as requested by the Owner's Representative. These costs shall be included in the prices shown for the other relative bid items.

### **19-6 STORM WATER POLLUTION PREVENTION PLAN**

The Contractor shall develop a SWPPP in accordance with the requirements specified in the General Permit and in accordance with the local SWRCB.

### **19-7 MONITORING PROGRAM**

The Contractor shall develop an M&RP in accordance with the requirements specified in the General Permit and in accordance with the local Co-Permittee storm water management regulations.

### **19-8 OTHER MATERIALS**

Contractor shall determine what materials to use in development and implementation of the SWPPP and M&RP. Materials must be acceptable to District and shall be adequately described in the SWPPP and M&RP.

## **19-9 GENERAL**

- A. The SWPPP and M&RP shall be developed and submitted by the Contractor and accepted by the District prior to commencement of construction activities.
- B. The Contractor shall comply with all conditions identified in the general permit and the Co-Permittee regulations applicable to the work.
- C. The Contractor shall be responsible for the compliance of his personnel and subcontractors with the SWPPP and for cooperation with the District in the implementation of the M&RP.
- D. The SWPPP shall be kept on site during construction activity and made available upon request of a representative of the RWQCB and/or other regulatory agency, including Co-Permittee staff.
- E. The Contractor shall amend the SWPPP whenever there is a change in construction or operations which may affect the discharge of significant quantities of pollutants to surface waters, groundwaters, or a municipal storm sewer system.

## **19-10 DUTY TO COMPLY**

- A. The Contractor shall comply with all conditions identified in the General Permit, Co-Permittee regulations, and the SWPPP. Non-adherence with the conditions specified in the General Permit may constitute a violation of the Clean Water Act and the Porter-Cologne Water Quality Control Act and may be grounds for enforcement action by the RWQCB. Any fines incurred by the District or Co-Permittees due to the Contractor's lack of compliance with the SWPPP shall be chargeable to the Contractor and may be deleted from monies due to the Contractor by the District.
- B. The Contractor shall take all reasonable steps to minimize or prevent any violation of the General Permit.

## **19-11 COMPLIANCE CERTIFICATION**

- A. An officer or other authorized representative of the Contractor shall certify, in writing, to the District annually and at the completion of construction, if it occurs before the next annual report that its construction activity is and has been in compliance or has been modified to comply with the requirements of the General Permit, Co-Permittee regulations, and the SWPPP.
- B. If the Contractor determines that he cannot certify compliance with any of the General Permit, Co-Permittee ordinance, and/or the SWPPP requirements, he shall notify the District immediately. The notification shall identify the type of noncompliance, describe the actions necessary to achieve compliance, and include a time schedule when compliance will be



achieved. The Contractor shall submit a written verification, with details, of the notification within 15 days of each noncompliance event.

## **SECTION 20 – SITE CONDITIONS SURVEYS**

### **20-1 WORK INCLUDED**

Contractor shall conduct thorough pre-construction and post-construction site condition surveys of the entire project area. Site Conditions surveys shall include written documentation of the conditions found, as well as photographs and video recordings of the area within at least 80 feet of any construction area and staging area. The written notes, photographs, and video shall be suitable for forensic purposes to resolve any damage claims that may arise as a result of construction.

### **20-2 SUBMITTALS**

- A. Written documentation of site condition survey at pre-construction and post-construction.
- B. Photographs as described herein of pre-construction and post-construction conditions.
- C. Video recordings as described herein of pre-construction and post-construction conditions.
- D. Submittals shall be made within three days of the surveys. All post-construction data shall be submitted prior to the final project inspection.

### **20-3 SITE CONDITION WRITTEN DOCUMENTATION**

Written documentation shall include the time, date, and conditions under which the site survey was made. The documentation shall note the condition of structures, pavement, sidewalks, utilities, fences, and etc. within the work areas.

### **20-4 PHOTOGRAPHS**

- A. General – Contractor shall take enough photographs during each site survey to provide a record of conditions existing prior to construction and conditions after construction. Pre-construction photographs shall be taken prior to any construction or mobilization of equipment, but not more than one week prior to actual start of work. The pre-construction photographs may be staged at different times to match the progression of the work.
- B. The photographs shall document existing damage to public and private facilities, both prior to and after construction. Conditions to be documented include, but are not limited to: sidewalk cracks, broken curbs, separated property walls, improvements within public right-of-ways, access roads used, utility covers and markings, signs, pavement striping, pavement, unique or unusual conditions, adjacent driveways, landscaping, survey markers, and any feature directed by the Engineer. Private property that is adjacent to the public right-of-way shall be documented to the extent visible from the public right-of-way.

- C. Photographs shall include items to indicate scale, as needed. In particular, scales or other items shall be laid next to close ups of structural cracks and other damaged areas being recorded. Scaling shall also be used to document elevation differences, as needed.
- D. One set of color prints shall be submitted. Additional sets shall be available for reviewing in settling any construction disputes. A set of photos shall also be furnished in electronic format. The resolution shall be at least equal to 7 mega-pixels. All photos shall be documented as to time and date taken, photographer, project number, location, and orientation. Documentation shall include a brief description of objects photographed.

## **20-5 VIDEO RECORDING**

- A. Video recordings shall document the conditions of the entire area affected by construction, as well as near by structures and facilities. The general documentation requirements for videos are the same as for photographs. Video recorders shall accurately and continuously record the time and date.
- B. Video recordings shall include an audio portion made simultaneously during the videoing. The audio recording shall describe the location, time, orientation, and objects being recorded. Special commentary shall be provided for unusual conditions or damage noted.
- C. Video equipment shall be capable of producing high resolution images and shall have zoom capabilities.
- D. Video recordings shall provide an overall picture of the sites and shall provide detailed images of damaged areas. Video shall extend to the maximum height of structures.
- E. The Engineer shall have the right to reject any audio video recordings submitted with unintelligible audio, uncontrolled pan or zoom, or of poor quality. Video recordings shall be repeated when rejected.
- F. Video recordings shall be submitted with labels indicating the project, date, recorder, and other pertinent information. Recordings shall be submitted on standard DVDs in a standard format.

## **20-6 TIMING**

Contractor shall provide written notice of the time scheduled for the site conditions survey and the place it is to begin. Contractor shall obtain the Engineer's concurrence prior to beginning the condition survey. The Engineer reserves the right to cancel the survey due to weather conditions or other problems. Videoing shall be done during times of good visibility and no videoing or photography shall be done during periods of visible precipitation or when standing water obscures pavement. Contractor shall provide the Engineer with an opportunity to have a representative present when taking the photos and provide guidance during photographing.



## **20-7 SITE SURVEYOR**

The site condition surveyor(s) shall be experienced in construction and potential damage concerns. The site condition surveyor(s) shall be familiar with the photography and video equipment being used.

## **20-8 FIELD QUALITY CONTROL**

Prior to submitting videos and photographs, the Contractor shall spot check the photos and videos in the field to insure they accurately reflect the actual conditions and to insure they are correctly labeled.

## **SECTION 21 – CONTRACTOR’S AS-BUILT DRAWINGS**

### **21-1 GENERAL REQUIREMENTS**

Contractor shall keep one accurate, legible set of As-Built Drawings at the site and available for review by the District in Contractor’s field office throughout the project.

### **21-2 DETAILED REQUIREMENTS**

- A. As-built drawings shall be on a single set of full size project prints of the Contract Drawings and other drawings forming a part of the contract, showing installed locations of improvements and all changes made during construction.
- B. As-built drawings shall show locations by key dimensions, depths, elevations of all of underground piping, conduit, sensor lines, valves, capped ends, branch fittings, pull boxes, and Work.
- C. Show all As-Built Drawing changes in a contrasting color to the original.
- D. In showing changes in the Work or added Work, use the same legends used on the Contract Drawings. Show locations and elevations to the same level of accuracy as the original Contract Documents. Tie dimensions to a permanent point.
- E. Report changes and deviations promptly to District. Maintain As-Built Drawings on an up-to-date basis with all entries reviewed by District.
- F. As-built drawings shall incorporate addenda, supplementary drawings, working drawings, change orders, and clarifications.
- G. As-built drawings shall incorporate survey notes, field notes, and system demonstration logs.
- H. Protect the As-Built Drawings from damage or loss.
- I. As-Built Drawings shall clearly show all discrepancies between the Contract Documents and the installed Work for all concealed construction, and for all work.
- J. Concealed shall mean construction installed underground or in an area which cannot be readily inspected by use of access panels, inspection plates, or other removable features.

### **21-3 PAYMENT FOR AS-BUILT DRAWINGS**

- A. Payment for as-built drawings required in Contract Documents will be included in the price bid for items of work for which as-built drawings are required.

- B. Partial payment requests may be withheld if daily logs, schedule updates, or as-built drawings are damaged, lost, or not kept current to satisfaction of District.
- C. Deliver the marked set of As-Built Drawings to the District prior to final acceptance of the Work. District will use these As-Built Drawings to modify the original mylars to create reproducible As-Built Drawings.

# PART III

# STANDARD DRAWINGS

1. All work shall conform to the Elsinore Valley Municipal Water District (EVMWD) design and construction standards for water, recycled water and sanitary sewer facilities.
2. Construction materials testing and inspection shall comply with standards and specifications and shall meet or exceed the requirements of the governing agency, the Standard Specifications for Public Works Construction ("Green Book") and the American Society for Testing and Materials (ASTM) standards. Failure to meet any of the above requirements shall be cause for rejection.
3. The contractor shall notify EVMWD (5) five working days prior to beginning work (951) 674-3146.
4. Depth and location of existing underground facilities shall be determined by the contractor by potholing and a field survey of elevations and shall be given to the inspector prior to trenching. The contractor shall also contact Underground Service Alert (811) prior to any excavation work.
5. All construction and operations by the contractor shall be in accordance with Cal-OSHA requirements.
6. The contractor shall keep a complete record of all construction changes and shall make information available to the inspector for preparation of "As Built" drawings. The "As Built" drawings shall be submitted to EVMWD for review prior to final review and acceptance of the project.
7. Where the water main and sewer cross storm drains, other pipelines, telephone and electric ducts, or similar installations, a minimum of 12 inches of vertical clearance shall be provided between the main or sewer and other installations unless otherwise directed by EVMWD personnel.
8. Separation of sewer and water lines must comply with EVMWD standard plans S-3 or W-2 and shall meet or exceed the requirements of the State of California, Department of Public Health Title 22, Chapter 16, Article 4, Section 64572.
9. Connections to existing EVMWD sewer or water lines shall be in accordance with standard EVMWD procedures and shall not be made unless EVMWD inspector is present.
10. Unless waived by EVMWD an insulated copper solid core 10 gage tracer wire shall be placed with each sewer main to assist with future location. Warning tape shall be placed at least 6" above sewer main & sewer laterals, but not deeper than 24" below the existing finished grade. Water mains shall also have tracer wire and warning tape installed in the trench.

REVISION	BY	APPR	DATE




*Paul S. Carver* 11/7/12  
 Paul S. Carver R.C.E. 31516 DATE

GENERAL NOTES

STD. DWG. NO.
GN-1

11. The length of open trench at any one time shall be limited to 600 feet along road right-of-way unless otherwise agreed to in writing by EVMWD. Trench shall be backfilled and compacted at the conclusion of each day. Open trench limits are subject to city requirements.
12. Surface improvements damaged or removed as a result of the contractor's operations shall be reconstructed by the contractor to the local governing agency's requirements at the contractor's expense.
13. All revisions to these drawings must be approved by EVMWD Director of Engineering.
14. It is the project engineer's responsibility to tie out any existing street monumentation either visible or buried, prior to construction.
15. It is the contractor's responsibility to protect any street monumentation in place. If any monument is disturbed or destroyed, the contractor will be required to contract with a registered land surveyor for the re-establishment and mapping of the destroyed monument at the contractor's expense.
16. The existence and location of any underground utility pipes or structures shown on these plans were obtained by a search of the available records. To the best of EVMWD knowledge there are no existing utilities except as shown on these plans. The contractor is required to take due precautionary measures to protect the utility lines shown and any other lines not on record or not shown on these plans or marked on the ground by Underground Service Alert.
17. It shall be the responsibility of the developer or contractor to apply for any necessary encroachment permit from all governing agencies.
18. It shall be the responsibility of the contractor/developer to stamp a 2" high "S" "W" or "IW" on the curb face for all sewer, water, and irrigation laterals at the location where the lateral passes beneath the curb. A "V" shall be stamped on the curb face at all valves.
19. A steel rod or stake 6" above the ground or 10 gage copper wire with 2" copper tag, shall be installed at the end of each sewer lateral to assist in locating at a later date. In new tract development a 3"x8' PVC pipe or 2"x4"x8' board shall be used to mark the ends of laterals.
20. All sewers shall be balled, air tested, mandrel tested and CCTV inspected prior to acceptance by the district. Air test shall be per UNI-B-6; mandrel test shall be in accordance with section 306-1.2.12 of the standard specification for Public Works construction and closed circuit television inspection per District Standards.

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**EVMWD**  
 Elginore Valley Municipal Water District


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**GENERAL NOTES**

STD. DWG. NO.  
**GN-2**

21. A property line cleanout will be installed, 5½' deep minimum, outside of right-of-way line. The 1/8 bend and 45° wye connection shall be Polyvinyl Chloride (PVC) or Acrylonitrile Butadiene Styrene (ABS).
22. Protect pipe, joints, lining and coating, and bed pipe carefully to provide continuous bearing and prevent uneven settlement. Pipe shall be protected against flotation at all times. Open ends of the installed sewer pipe shall be sealed at all times when construction is not in process.
23. Pipe joints shall not be deflected greater than 80% of the maximum angle recommended by the pipe manufacturer.
24. Sewer and water pipe trench backfill shall be in accordance with EVMWD standard drawings S-1 & W-3 and the governing agency. A full time soils technician must be onsite during backfilling and compaction.
25. All service laterals shall be located at right angles to the main unless otherwise indicated on the plans and accepted by EVMWD. Materials for laterals shall meet EVMWD specifications. Sewer elevations shown are flowline (conduit invert).
26. Minimum cover for all water mains less than 12 inches in diameter shall be 3.5 feet. water mains 12 inches and greater shall have a minimum cover of 4 feet. maximum cover for water mains shall be 8 feet, unless accepted by the EVMWD Director of Engineering.
27. Wherever valves are to be installed, the invert slope of the main shall not exceed six percent. Valves shall be located so that there will be a minimum clearance of 6 inches between the top of the valve and the bottom of the valve box cover at street sections.
28. The minimum clearance between fire hydrants and utility poles, light standards and sign posts shall be 3 feet.
29. No water meter boxes shall be installed in driveways or sidewalks. Meter boxes shall be set at high grade to eliminate water runoff. install reduced pressure principle or back flow device after irrigation meter. Install a pressure regulator on homes or business if the pressure is over 80 PSI. A pressure regulator shall be installed prior to entering the house/building plumbing.
30. Any change in flow direction (bends, tees, fire hydrants, etc.) shall utilize restrained ductile iron pipe and fittings, in lieu of thrust blocks.
31. Air valves shall be installed at high points and blowoffs at all low points on the line as per EVMWD standard drawings W-16, W-17, and W-19.

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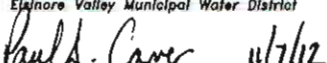
Elsinore Valley Municipal Water District  
*Paul S. Carver* 11/7/12  
 Paul S. Carver R.C.E. 31518 DATE

**GENERAL NOTES**

STD. DWG. NO.  
**GN-3**

32. If required, a reservoir and booster pump station will have to be constructed and in service before any service can be provided to the units constructed within this subdivision.
33. Prior to paving the street section, all underground facilities with laterals, including but not limited to sewer, water, telephone, electric power, gas, cable television and drainage facilities shall be in place, tested and accepted by the responsible utility/agency.
34. House slab elevations that are lower than the upstream manhole rim elevation shall be equipped with backwater valves. The project engineer shall indicate on the sewer lateral table which lots are involved.
35. Prior to the construction of any backflow protection device, the contractor shall notify the district backflow assembly inspector 24 hours prior to the construction of assembly. The district backflow inspector shall provide final inspection, testing and acceptance prior to turning on the water supply.
36. Survey staking for water pipelines is at 50-foot intervals plus all appurtenances, horizontal alignment changes and vertical alignment changes. Survey staking for sewer pipelines is at 25-foot intervals plus all laterals, manholes in and out, appurtenances, cleanouts, horizontal & vertical alignment changes, beginning of curves, and end of curves.
37. All water valves in unpaved areas shall be surrounded by an asphalt pad installed in accordance with EVMWD standard drawing W-27. A valve marker shall be installed in unpaved areas in accordance with EVMWD standard drawing W-28.
38. All manholes installed in unpaved areas shall be surrounded by an asphalt pad installed in accordance with EVMWD standard drawing S-10.
39. All facilities located downstream of the water meter and fire detector check meter are private and are to be maintained by the owner.

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 Elginore Valley Municipal Water District  
  
 Paul S. Carver R.C.E. 31516 DATE 11/7/12

GENERAL NOTES


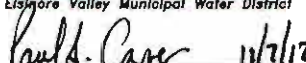
STD. DWG. NO.  
 GN-4



## RECYCLED WATER GENERAL NOTES

1. Five (5) days prior to commencement of any excavation of on-site improvements, the contractor shall notify the Elsinore Valley Municipal Water District Engineering and Inspection Section at (951) 674-3146.
2. All work shall be done in accordance with the Elsinore Valley Municipal Water District (EVMWD) "Rules and Regulations for Recycled Water Use and Distribution within the Elsinore Valley Municipal Water District", and the State of California Department of Public Health (CDPH) requirements.
3. Cross connection between recycled water lines and potable water lines is strictly prohibited.
4. No substitution of pipe materials will be allowed without prior approval by the EVMWD and CDPH.
5. All below grade recycled water pipe shall be color code purple pantone #522 or distinctively wrapped with purple tape and stenciled with "Caution recycled water - DO NOT DRINK". Orient the stenciling to the top of the trench for laterals. Install purple metallic tape over the recycled water mains per the recycled water system standard design requirements in the EVMWD standard specifications and drawings.
6. All above ground recycled water facilities shall be purple colored pantone #512 and marked to differentiate recycled water facilities from potable water or wastewater facilities per American Water Works Association (AWWA) guidelines and section 116815 of the California Health and Safety Code.
7. Provide a minimum cover of all pipes in accordance with EVMWD standard specifications and drawings per the standard design requirements for recycled water pipelines.
8. Maintain separation between potable water, recycled water, and/or sewer pipelines according to the EVMWD standard drawings and CDPH guidance memo no. 2003-02 latest revision.
9. All public and private potable water mains including fire mains and any water wells and water courses within the recycled water project shall be shown on the plans.
10. Tag all valves and other below grade facilities within boxes with permanent recycled water labels that identify the facility as "Recycled Water - DO NOT DRINK NO BEBER". Attach the label with either stainless steel wire or self-locking plastic ties.
11. Blowoff assemblies for recycled water shall be in accordance with EVMWD standard drawing RW-1.
12. All public facilities such as comfort stations, drinking fountains, outdoor eating areas, etc. shall be protected from spray and or misting by recycled water.
13. No ponding, run-off, misting, or over spray is permitted. Relocate or adjust all irrigation heads to prevent over spraying onto sidewalks, streets, private lots, and areas not approved for recycled water use.

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### RECYCLED WATER GENERAL NOTES


STD. DWG. NO.

GN-5

RECYCLED WATER GENERAL NOTES (CONT.)

14. Areas not approved for recycled water use shall be protected from contact with recycled water, whether by windblown spray or by direct application through irrigation or other use. Lack of protection, whether by design, construction practice, or system operation is strictly prohibited.
15. Hose bibs on recycled water systems are prohibited.
16. Recycled water quick coupling valves shall be designed for use on recycled water in accordance with the rules, and regulations.
17. Quick coupling valves use in recycled water systems shall conform the following:
  - 17.1. Quick coupling valves can be 1 inch or 3/4 inch nominal size, with brass construction and a normal working pressure of 150 psi or equal.
  - 17.2. A purple rubber or vinyl locking cover shall be permanently attached to the quick coupling valves.
18. When potable water and recycled water lines cross, the recycled water line shall be installed within a protective pipe similar to standard drawing W-6 except AWWA C-905 PVC pipe can be used in place of steel pipe. The protective pipe shall extend 10 feet from each side of the outside edge of the potable water line.
19. Provide a minimum of 12 inches of vertical separation between potable water, recycled water, and sewer line according to these rules and CDPH. Maintain at least 12 inches crossing separation between other utilities unless otherwise directed by EVMWD personnel.
20. Install purple colored pantone #512 material for all above grade irrigation facilities per AWWA guidelines and section 116815 of the California Health and Safety Code.
  - 20.1. Valve and other on - grade boxes - purple color.
  - 20.2. Sprinkler heads - purple color.
21. All recycled water sprinkler control valves and others below grade facilities within boxes shall be tagged with identification tags. Tags shall be weather proof plastic 3 inches x 4 inches, purple in color, with words "Recycled Water - DO NOT DRINK" and "Aviso Aqua Impura - NO TOMAR" imprinted on one side, and the recognized symbol for not drinking on the other side. Imprinting shall be permanent and black in color. One tag shall be attached either to the valve stem directly with plastic tie wrap, or to the solenoid wire directly with plastic tie wrap per EVMWD standard drawing RW-3.
22. The contractor shall conduct a cross-connection control shutdown test and coverage test (as defined in section 4.8 of the district's rules) when requested by the district or CDPH prior to any use of recycled water. The method of this test must be accepted by the district.
23. The required cross-connection shutdown test may be performed by a certified cross-connection control specialist as defined in the district's rules and witnessed by the district's cross-connection specialist. Copies of inspection reports shall be forwarded to the district.

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**EVMWD**  
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**RECYCLED WATER  
 GENERAL NOTES**

STD. DWG. NO.

**GN-6**

AIR RELEASE AND VACUUM ASSEMBLY

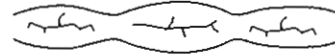
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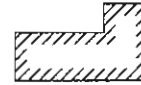
BLOW OFF VALVE



BRUSH (LANDSCAPING)



BUILDING



BRICK



CATCH BASIN



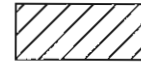
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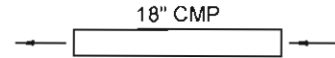
CLEAN-OUT



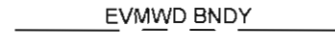
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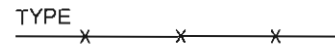
CULVERT



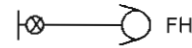
DISTRICT BOUNDARY LINE



FENCE



FIRE HYDRANT



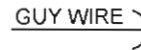
FLOWLINE



GAS METER



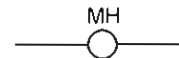
GUY WIRE



HEDGE (LANDSCAPING)



MANHOLE



REVISION	BY	APPR	DATE

**EVMWD**  
 Elsinore Valley Municipal Water District  
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DRAFTING SYMBOLS

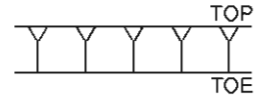
STD. DWG. NO.

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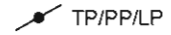
SHRUB (LANDSCAPING)



SLOPE



TELEPHONE, POWER OR LIGHT POLE



TREE (LANDSCAPING)



TILE



TRAFFIC SIGNAL



UTILITIES

GAS



ELECTRIC



CABLE TV



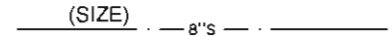
FIBER OPTIC



TELEPHONE



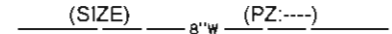
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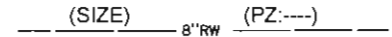
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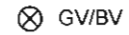
WATER



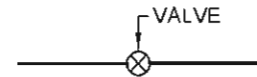
RECYCLED WATER



VALVE



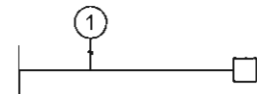
WATER MAIN TO BE CONSTRUCTED



WATER METER



WATER SERVICE

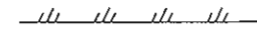


WEIGHT OF LINES

A. EASEMENT



B. PAVEMENT EDGE, EDGE OF ROAD



C. EXISTING UTILITIES



D. NEW WATER MAIN OR OTHER PIPE LINES



E. R.O.W.



REVISION	BY	APPR	DATE

**EVMWD**  
 Elsinore Valley Municipal Water District  
*Paul S. Carver* 11/7/12  
 Paul S. Carver R.C.E. 31516 DATE


DRAFTING SYMBOLS  
 (CONTINUED)

STD. DWG. NO.

G-2

AC	ASPHALTIC CONCRETE
AV	AIR RELEASE & VACUUM RELIEF VALVE ASSEMBLY
BC	BEGIN CURVE
BP	BACKFLOW PREVENTER
BV	BUTTERFLY VALVE
BO	BLOW OFF
CML&C OR CMLC	CEMENT MORTAR LINED & COATED
DI	DUCTILE IRON
E, OR T	ELECTRICAL & TELEPHONE CONDUIT
(E)	EAST
EC	END CURVE
ELEV.	ELEVATION
EVMWD	ELSINORE VALLEY MUNICIPAL WATER DISTRICT
FF	FINISHED FLOOR
FH	FIRE HYDRANT
FL	FLOWLINE
FLG	FLANGE
G	GAS LINE
GB	GRADE BREAK
GV	GATE VALVE
INV.	INVERT
MH	MANHOLE
MJ	MECHANICAL JOINT
NIC	NOT IN CONTRACT
(N)	NORTH
PAD ELEV.	PAD ELEVATION
PO	PUSH ON
PVC	POLYVINYL CHLORIDE
ROW OR R/W	RIGHT OF WAY
RW	RECYCLED WATER
RPP	REDUCED PRESSURE PRINCIPLE BACKFLOW DEVICE
S	SEWER LINE
(S)	SOUTH
W	WATER LINE
(W)	WEST

REVISION	BY	APPR	DATE

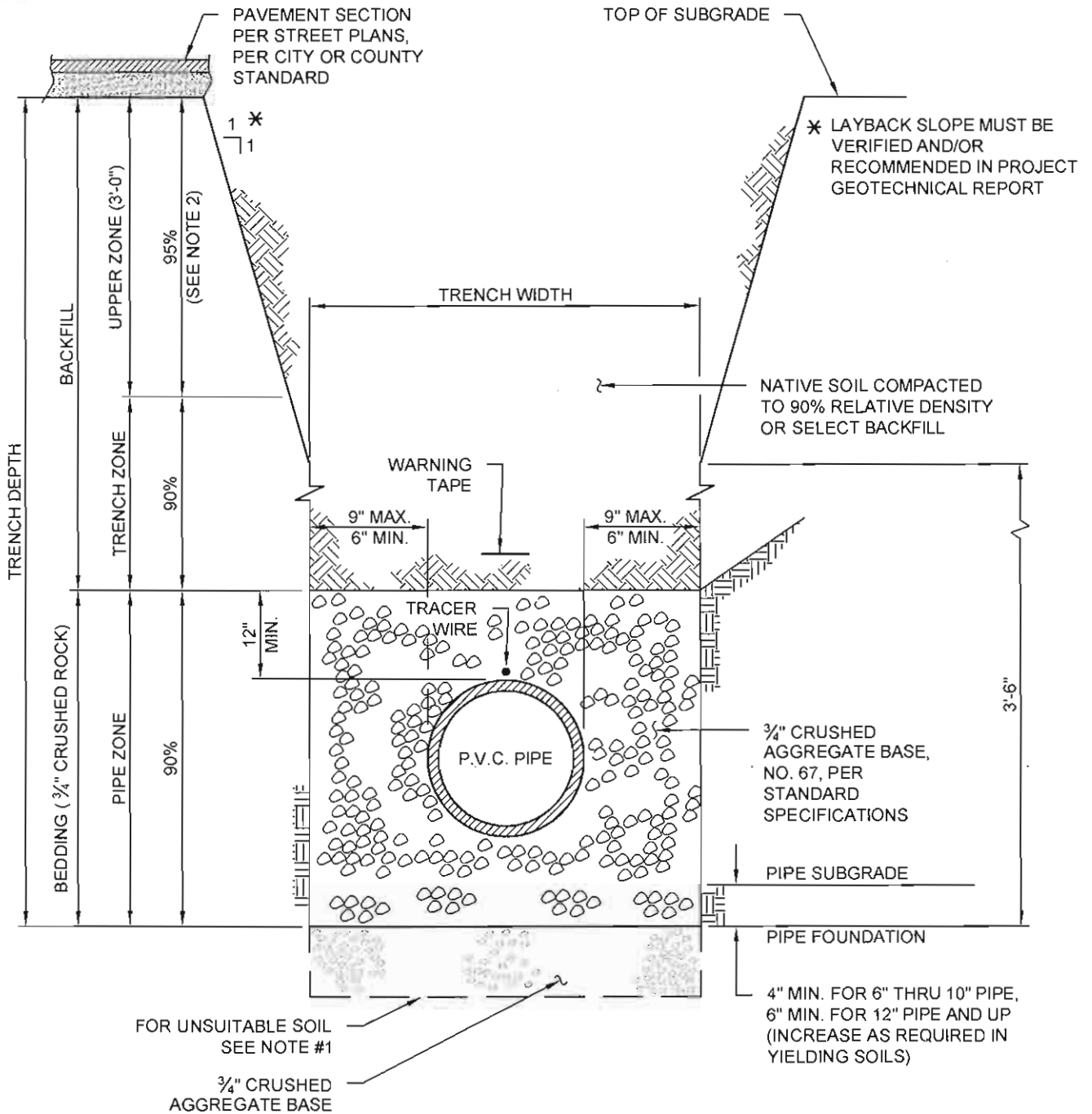


**EVMWD**  
 Elsinore Valley Municipal Water District

*Paul S. Carver* 11/7/12  
 Paul S. Carver R.C.E. 31516 DATE

# ABBREVIATIONS

STD. DWG. NO.  
**G-3**



**NOTES:**

1. IF UNSUITABLE SOIL IS ENCOUNTERED, DEPTH OF REMOVAL AND SIZE OF FOUNDATION ROCK WILL BE PER THE SOILS REPORT OR 3/4" AGGREGATE IF NOT STATED.
2. EXCAVATION, BACKFILL AND COMPACTION TO BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

REVISION	BY	APPR	DATE

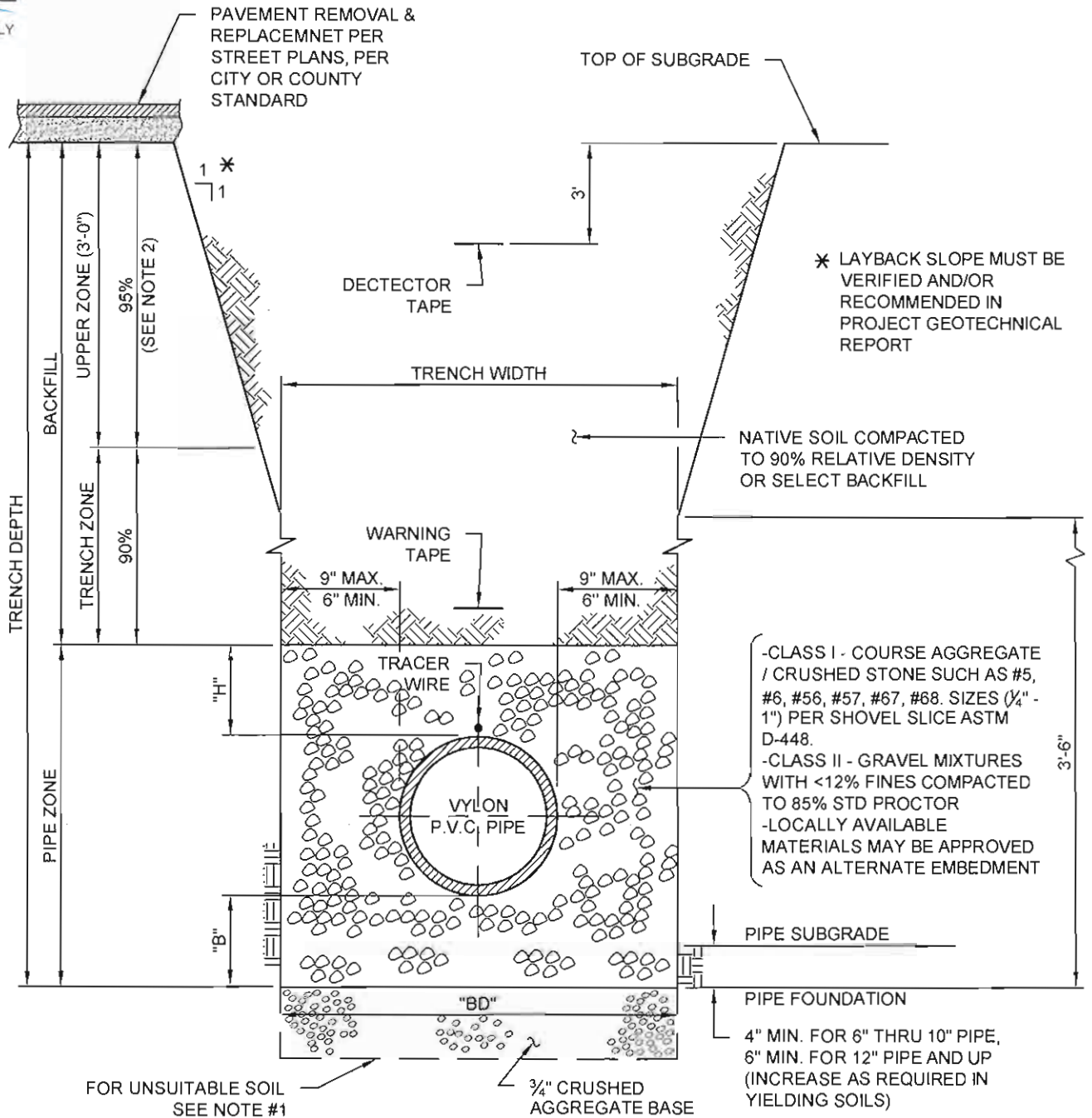


*Paul S. Carver* 11/7/12  
 Paul S. Carver R.C.E. 31516 DATE

**STANDARD SEWER  
 PIPE BEDDING FOR PVC  
 UP TO 18-INCHES IN DIAMETER**

STD. DWG. NO.

**S-1a**



**NOTES:**

1. IF UNSUITABLE SOIL IS ENCOUNTERED, DEPTH OF REMOVAL AND SIZE OF FOUNDATION ROCK WILL BE PER THE SOILS REPORT OR 3/4" AGGREGATE IF NOT STATED.
2. EXCAVATION, BACKFILL AND COMPACTION TO BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

**TYPES OF INSTALLATION:**

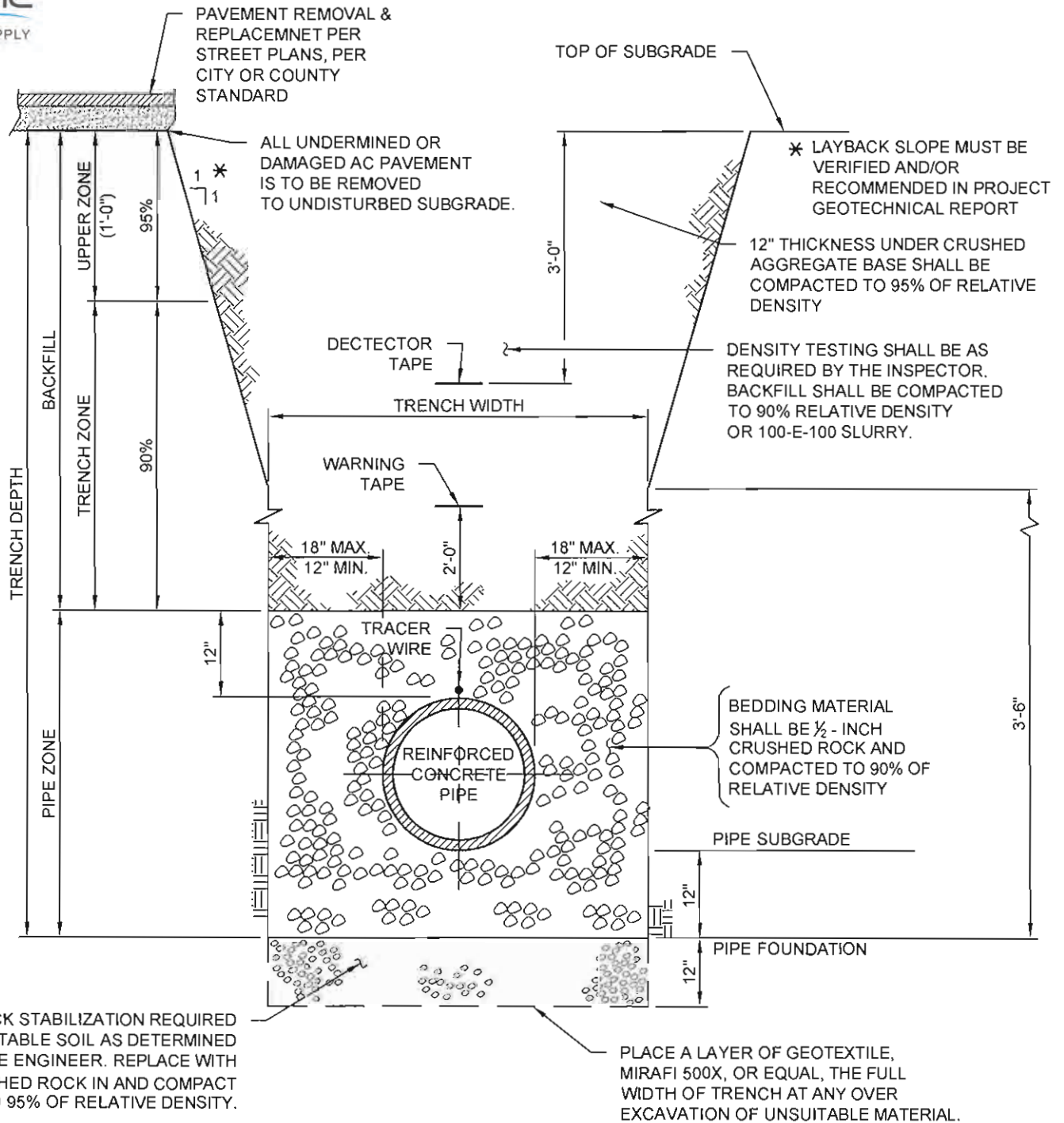
- A. SHALLOW (LESS THAN 25FT OF COVER)
  1. SHOVEL SLICE OR COMPACT EMBEDMENT IN HAUNCHES TO SPRINGLINE.
  2. "H" (HEIGHT OF COVER) IS 6" FOR 21" - 54" VYLON PIPE.
  3. "BD" (MIN. TRENCH WIDTH) IS THE PIPE OD + 18" FOR 21" - 54" VYLON PIPE.
  4. "B" (PIPE BEDDING) IS 4" FOR 21" - 54" VYLON PIPE.
- B. DEEP (25FT TO 50FT COVER)
  1. SHOVEL SLICE STONE OR COMPACT GRAVEL-SAND MIXTURE IN HAUNCHES THROUGH SPRINGLINE IN LIFTS UNTIL PIPE IS COVERED.
  2. "H" (HEIGHT OF COVER) IS 6" FOR 21" - 54" VYLON PIPE.
  3. "BD" (MIN. TRENCH WIDTH) IS THE PIPE OD + 18" FOR 21" - 54" VYLON PIPE.
  4. "B" (PIPE BEDDING) IS 4" FOR 21" - 54" VYLON PIPE.
  5. TO OBTAIN LATERAL SUPPORT FOR VYLON PIPE WHERE AN UNSTABLE SOIL CONDITION IS ENCOUNTERED. USE A MINIMUM TRENCH WIDTH OF TWO PIPE DIAMETERS.

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**EVMSD**  
 Elginore Valley Municipal Water District  
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**STANDARD PIPE BEDDING FOR  
 VYLON PVC GRAVITY SEWER  
 21 - 54 INCHES IN DIAMETER**

STD. DWG. NO.  
**S-1b**  
 2 OF 3




ROCK STABILIZATION REQUIRED IN UNSUITABLE SOIL AS DETERMINED BY THE ENGINEER. REPLACE WITH 1/2" CRUSHED ROCK IN AND COMPACT TO 95% OF RELATIVE DENSITY.

PLACE A LAYER OF GEOTEXTILE, MIRAFI 500X, OR EQUAL, THE FULL WIDTH OF TRENCH AT ANY OVER EXCAVATION OF UNSUITABLE MATERIAL.

**NOTES:**

1. JETTING NOT PERMITTING
2. SHORING REQUIRED PER CAL-OSHA
3. BACKFILL SHALL BE IN ACCORDANCE WITH THIS DETAIL
4. ALL PAVEMENT CUTS SHALL BE SAWCUTS.

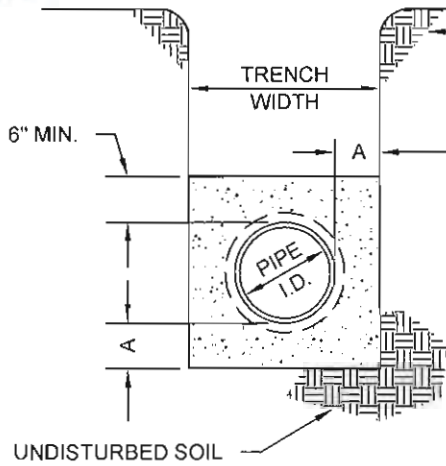
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 Elsinore Valley Municipal Water District  
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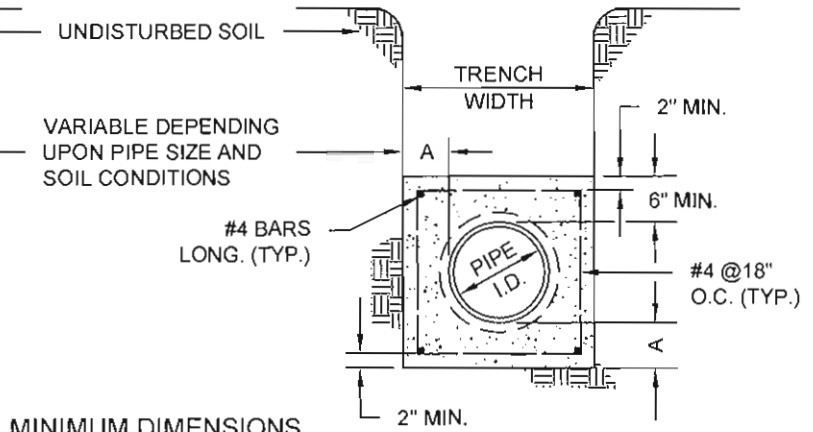
**STANDARD PIPE BEDDING FOR  
 REINFORCED CONCRETE PIPE  
 GRAVITY SEWER**

STD. DWG. NO.  
**S-1c**  
 3 OF 3





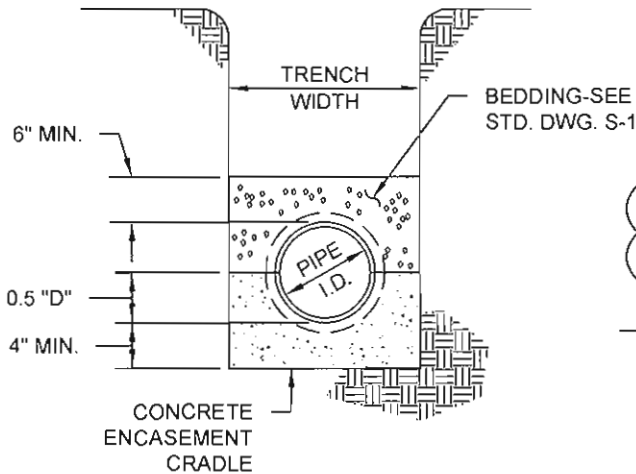
**TYPE "A"**



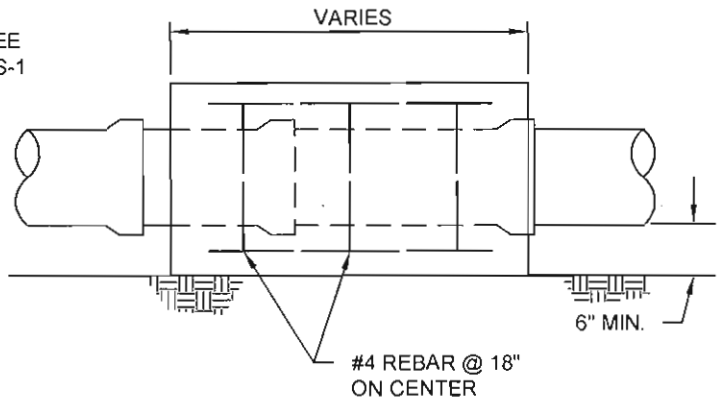
**TYPE "B"**

**MINIMUM DIMENSIONS**  
 PIPE SIZE "A"

PIPE SIZE	"A"
≤24"	6"
27"	7"
30"-33"	8"
36"-39"	9"
>39"	PER DISTRICT AUTHORIZATION



**TYPE "C"**



**SECTION**

**NOTES:**

1. CONCRETE ENCASUREMENT SHALL BE USED WHEN COVER IS UNDER 4' OR OVER 20', OR WHERE REQUIRED BY DISTRICT.
2. ENCASUREMENT TO BE PLACED AGAINST UNDISTURBED NATURAL GROUND OR FILL COMPACTED TO 95% RELATIVE DENSITY.
3. NO. 4 STEEL REINFORCING BARS SHALL BE USED AS SPECIFIED.
4. TYPE OF CONCRETE ENCASUREMENT SHALL BE 480-B-2500 CONCRETE, PER SSPWC, UNLESS A DIFFERING RECOMMENDATION IS GIVEN BY GEOTECHNICAL INSPECTOR AND ACCEPTED BY ENGINEER TO MEET UNFORSEEN SITE CONDITIONS.
5. WHERE SLOPED TRENCHES ARE USED, WALLS WILL NOT BEGIN TO SLOPE CLOSER THAN 12" FROM THE TOP OF THE PIPE.

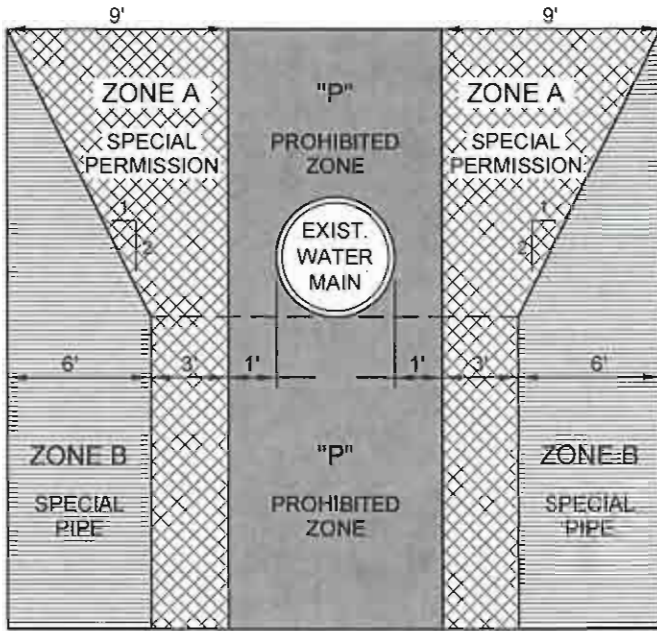
REVISION	BY	APPR	DATE

**CONCRETE CRADLE AND ENCASUREMENT**

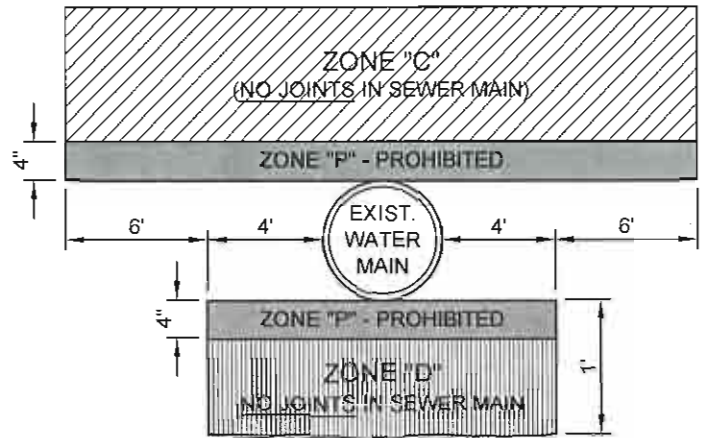
STD. DWG. NO.

**S-2**

### PARALLEL CONSTRUCTION



### PERPENDICULAR CONSTRUCTION



**NOTES:**

1. SEPARATION OF SEWER MAIN FROM WATER AND RECYCLED WATER MAINS SHALL BE IN ACCORDANCE WITH STATE OF CALIFORNIA DEPARTMENT OF HEALTH SERVICES GUIDANCE MEMO NO. 2003-02 OR UPDATES TO MEMOS.
2. DIMENSIONS ARE FROM OUTSIDE OF SEWER MAIN TO OUTSIDE OF WATER OR RECYCLED WATER MAINS.
3. SANITARY SEWERS ARE NOT PERMITTED WITHIN ANY OF THE ABOVE INDICATED ZONES UNLESS CONSTRUCTED IN CONFORMANCE WITH THE SPECIAL REQUIREMENTS AS SHOWN BELOW.
4. WATER AND SEWER MAINS SHALL BE INSTALLED IN SEPARATE TRENCHES. SEWER MAINS SHALL BE INSTALLED AT LEAST 10-FOOT HORIZONTALLY FROM, AND A MINIMUM OF 1-FOOT BELOW SANITARY SEWERS WHEN PARALLEL TO THE SEWER MAIN AND A MINIMUM OF 1-FOOT LOWER THAN SANITARY SEWERS WHEN CROSSING THE SEWER MAIN.

### ZONE SPECIAL WATER CONSTRUCTION REQUIREMENTS



NO SANITARY SEWER MAINS PARALLEL TO WATER OR RECYCLED WATER MAIN SHALL BE CONSTRUCTED WITHOUT PRIOR WRITTEN APPROVAL FROM THE CALIFORNIA DEPARTMENT OF PUBLIC HEALTH.



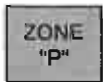
SPECIAL SEWER PIPE - RUBBER GASKETED PVC SEWER PIPE (ASTM 3034) OR EQUIVALENT; OR HDPE PIPE WITH FUSION WELDED JOINTS.



NO JOINTS IN SEWER MAIN - SPECIAL SEWER PIPE MAY BE REQUIRED.



NO JOINTS IN SEWER MAIN - USE PIPE MATERIALS DESCRIBED IN ZONE B.



CONSTRUCTION PROHIBITED IN THIS AREA.

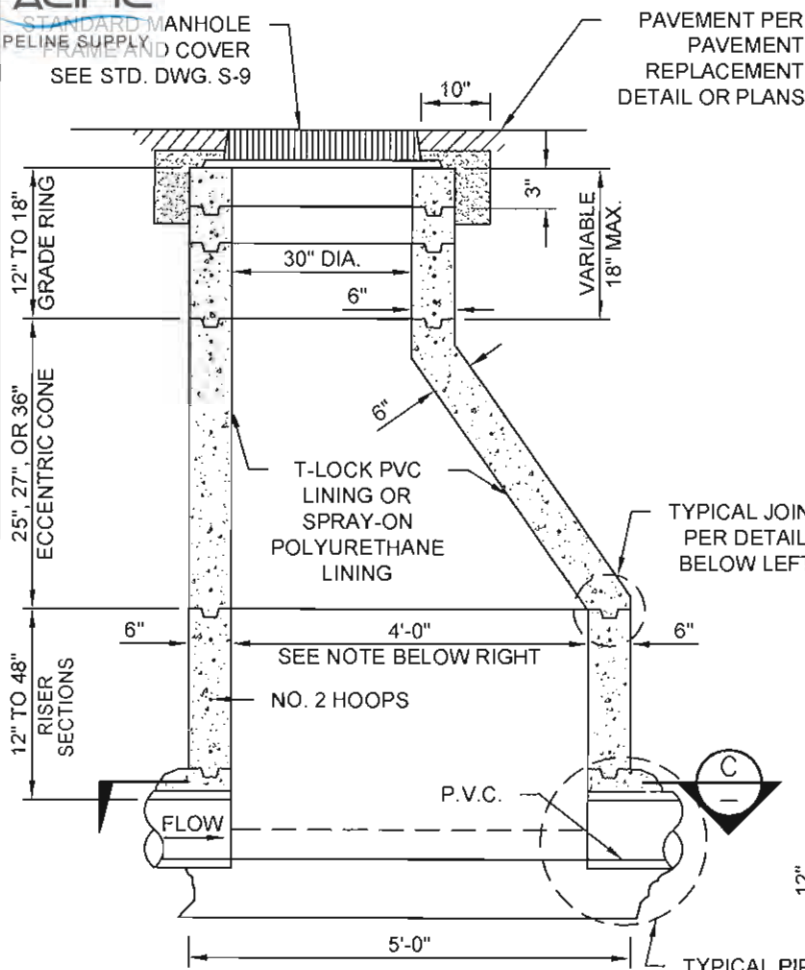
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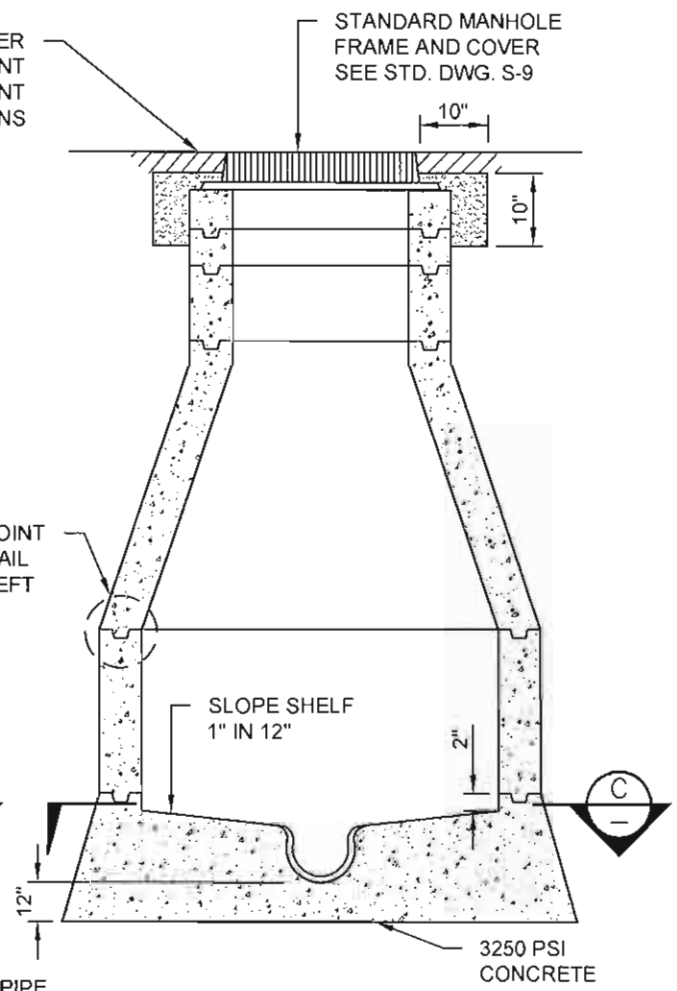
## PIPELINE SEPARATION REQUIREMENTS

STD. DWG. NO.

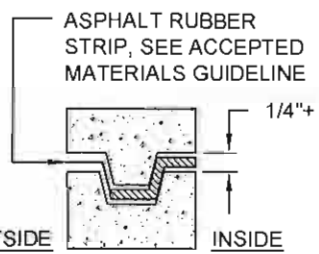
S-3



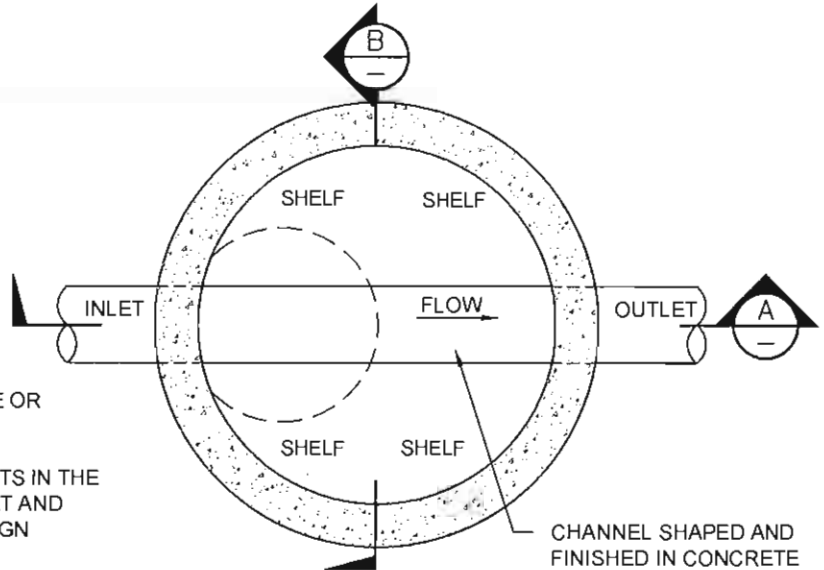
**SECTION A-A**  
(SIDE INLETS NOT SHOWN)



**SECTION B-B**  
(SIDE INLETS NOT SHOWN)



**JOINT DETAIL**




**SECTION C-C**  
(PLAN MANHOLE BASE)

**NOTES:**

1. FOR SEWER GREATER THAN 12' DEEP OR 18" DIA. PIPE OR GREATER, USE 5' DIA. MANHOLE PER STD. DWG. S-5.
2. MANHOLES AT INTERSECTIONS SHALL HAVE STUB OUTS IN THE OTHER TWO DIRECTIONS WITH RESPECT TO THE INLET AND OUTLET. SEE SECTION 2.04B OF THE STANDARD DESIGN REQUIREMENTS.
3. SEE SECTION 2.04B OF THE STANDARD DESIGN REQUIREMENTS FOR INLET AND OUTLET PIPE OF DIFFERENT SIZES.
4. DROP ACROSS MANHOLE SHALL BE 0.1' MIN. SEE STANDARD DESIGN REQUIREMENTS SECTION 2.04B-5b FOR SPECIFIC DIRECTIONS.

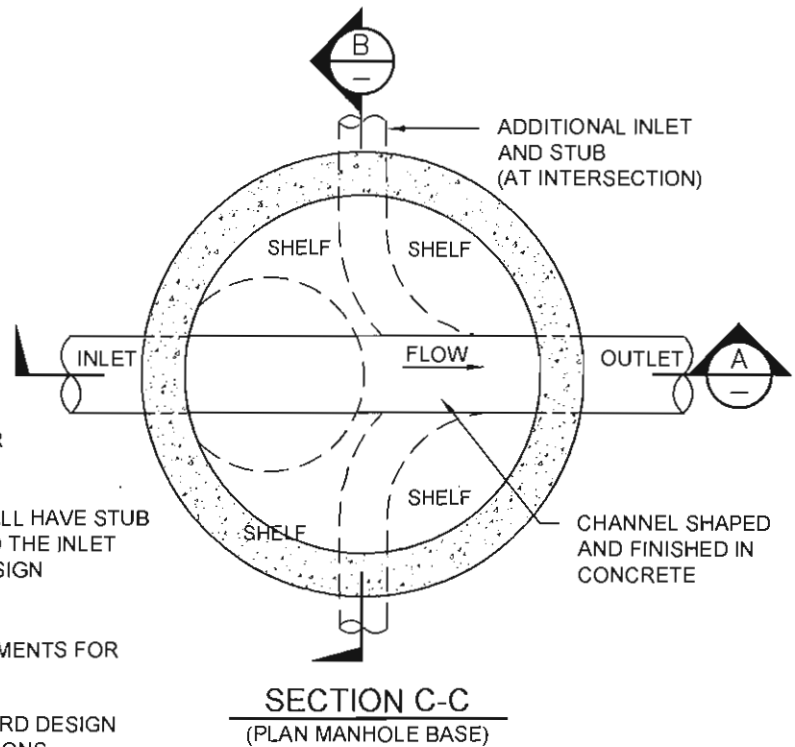
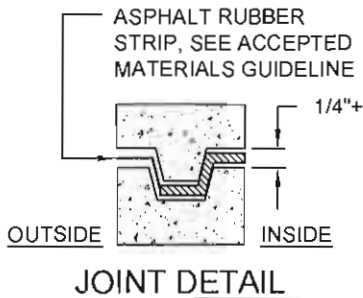
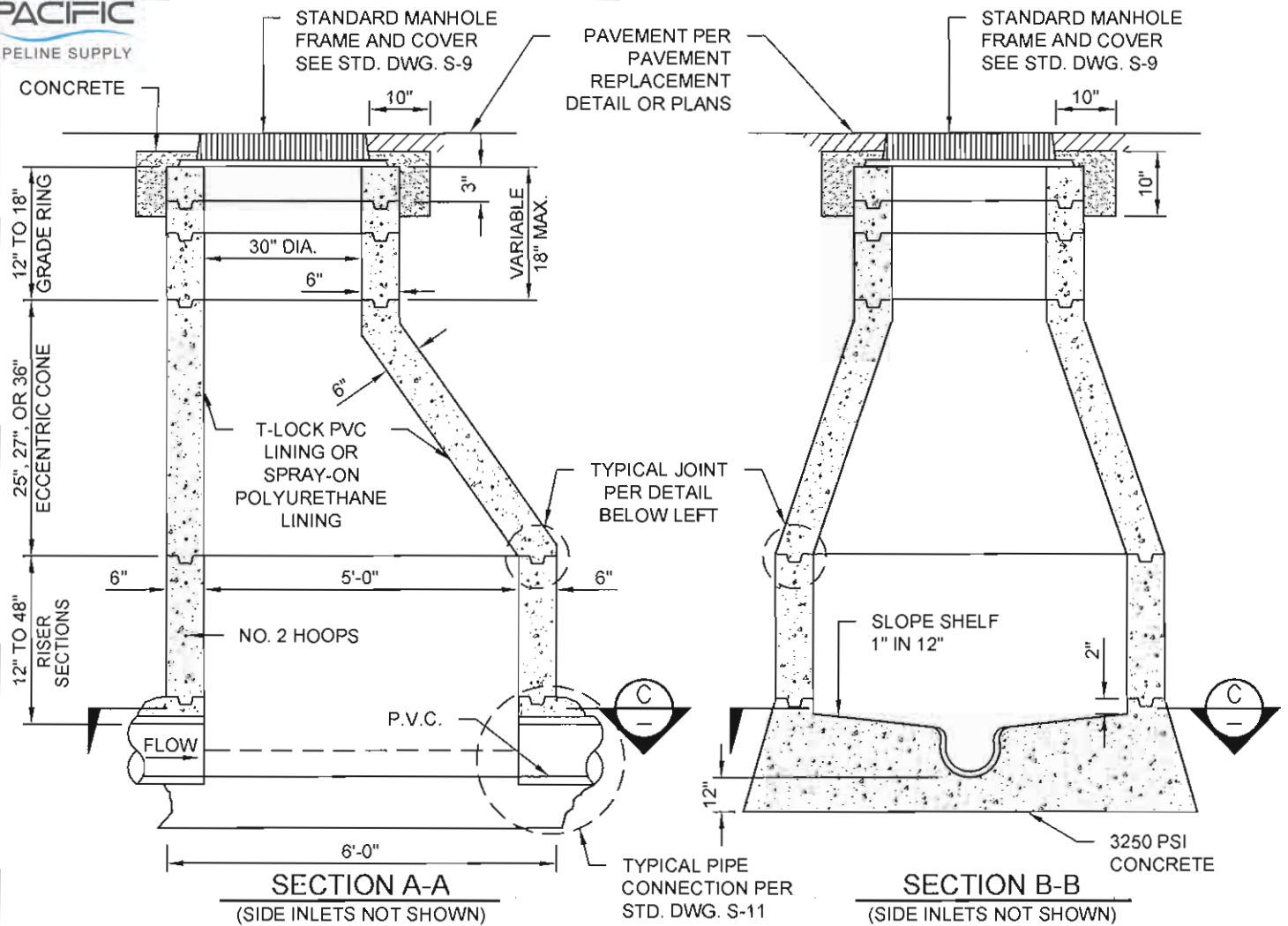
REVISION	BY	APPR	DATE


  
 Elsinore Valley Municipal Water District  
*Paul S. Carver* 11/7/12  
 Paul S. Carver R.C.E. 31518 DATE

**4' DIA. MANHOLE WITH CAST IN PLACE BASE**

STD. DWG. NO.

**S-4**



**NOTES:**

1. FOR SEWER GREATER THAN 12' DEEP OR 18" DIA. PIPE OR GREATER, USE 5' DIA. MANHOLE PER STD. DWG. S-5.
2. MANHOLES AT INTERSECTIONS SHALL BE 5' DIA. AND SHALL HAVE STUB OUTS IN THE OTHER TWO DIRECTIONS WITH RESPECT TO THE INLET AND OUTLET. SEE SECTION 2.04B OF THE STANDARD DESIGN REQUIREMENTS.
3. SEE SECTION 2.04B OF THE STANDARD DESIGN REQUIREMENTS FOR INLET AND OUTLET PIPE OF DIFFERENT SIZES.
4. DROP ACROSS MANHOLE SHALL BE 0.1' MIN. SEE STANDARD DESIGN REQUIREMENTS SECTION 2.04B-5b FOR SPECIFIC DIRECTIONS.

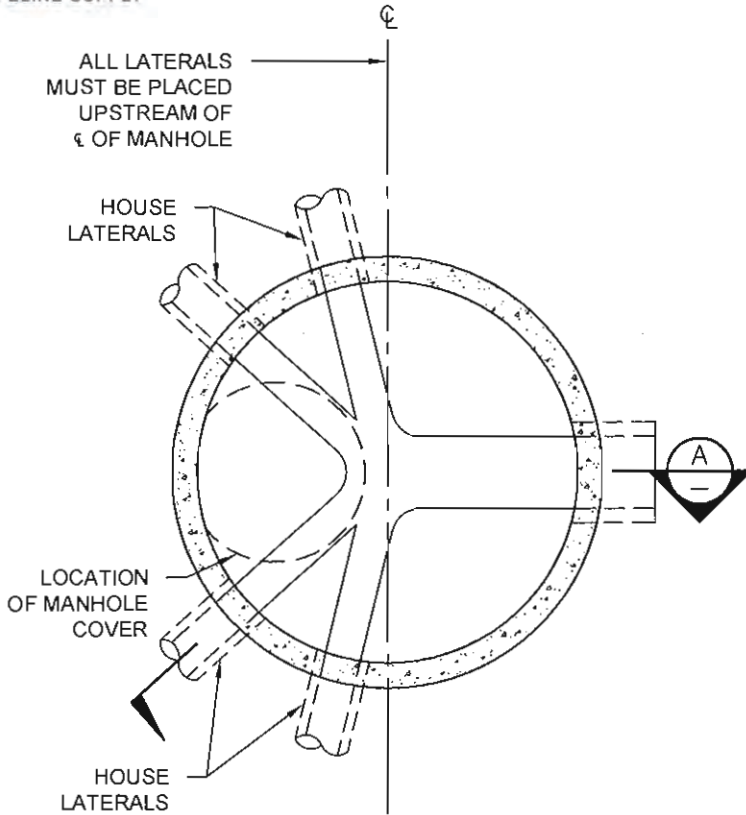
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 Elginore Valley Municipal Water District  
*Paul S. Carver* 11/7/12  
 Paul S. Carver R.C.E. 31516 DATE

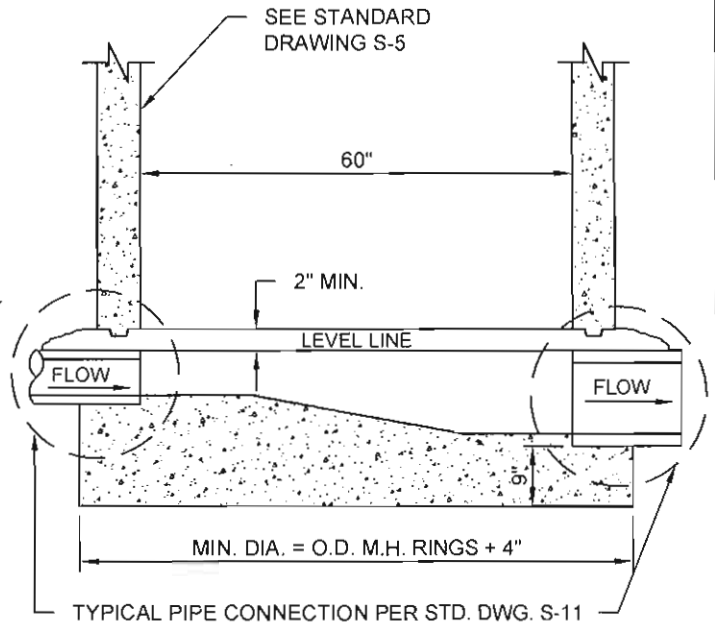
**5' DIA. MANHOLE  
 WITH CAST IN PLACE BASE**

STD. DWG. NO.

**S-5**



**PLAN**  
 TERMINUS MANHOLE  
 WITH HOUSE LATERALS



**SECTION A-A**

**NOTES:**

1. REFER TO STANDARD DRAWINGS OF MANHOLES FOR DETAILS PERTAINING TO MANHOLES ONLY.
2. THE MAXIMUM NUMBER OF LATERALS INTO A TERMINUS MANHOLE SHALL BE LIMITED TO FOUR.
3. THE MAXIMUM NUMBER OF LATERALS INTO A KNUCKLE MANHOLE SHALL BE LIMITED TO TWO.
4. ALL LATERAL CONNECTIONS SHALL BE ORIENTED SUCH THAT THEY WILL NOT BE IN LINE WITH ANY OF THE CONNECTING SEWER MAINS.
5. ALL LATERAL CONNECTIONS IN A KNUCKLE MANHOLE SHALL NOT CONNECT OPPOSING THE DIRECTION OF FLOW IN THE MANHOLE.
6. ALL KNUCKLE MANHOLES WITH 1 OR MORE CONNECTION LATERALS SHALL BE 5' DIA.
7. REFER TO STD DWG S-5 & S-4 FOR MANHOLE DETAILS.

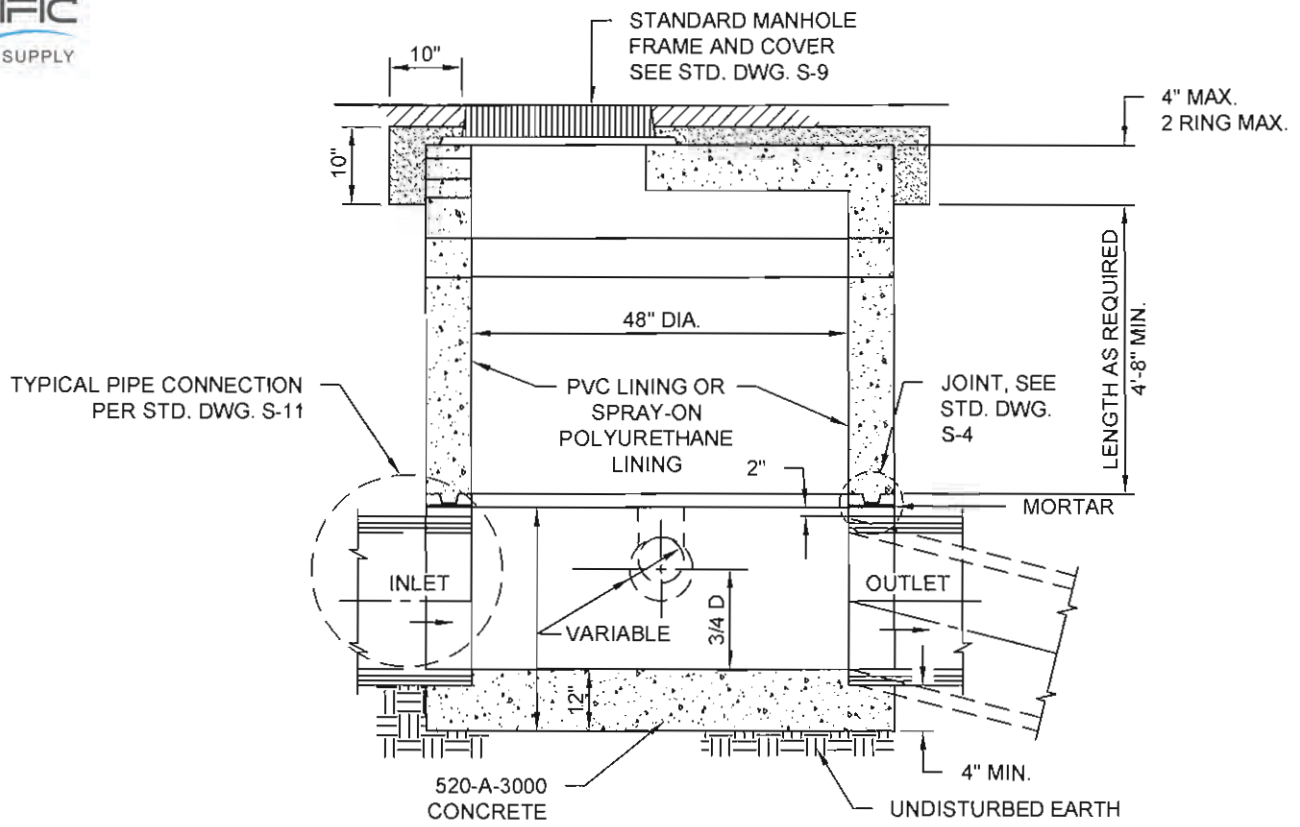
REVISION	BY	APPR	DATE

**EVMWD**  
 Elsinore Valley Municipal Water District  
*Paul S. Carver* 11/7/12  
 Paul S. Carver R.C.E. 31518 DATE

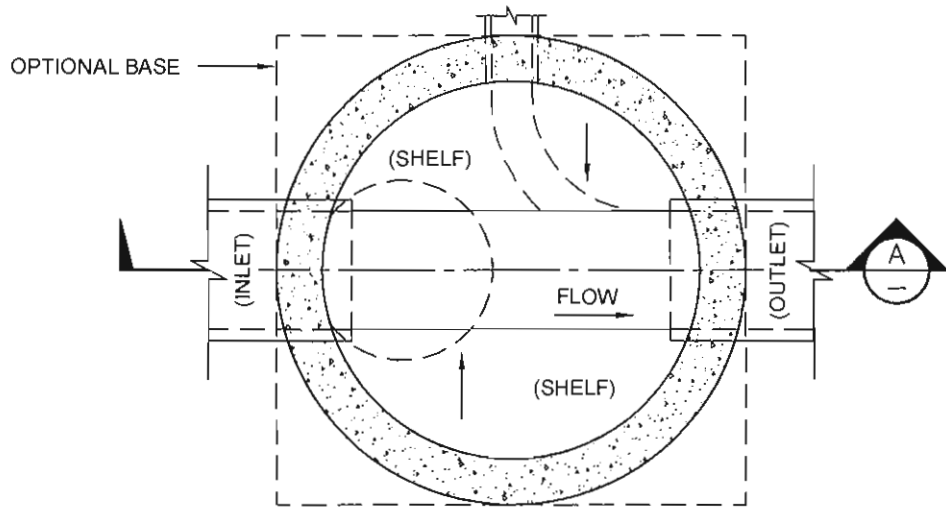
**MANHOLES AT  
 STREET KNUCKLE OR  
 END OF CUL-DE-SAC**

STD. DWG. NO.

**S-6**



**SECTION A-A**



**PLAN**

**NOTES:**

1. EXCEPT AS INDICATED HEREON OR ON THE PROJECT PLANS, MANHOLES SHALL CONFORM TO STD. DWG. S-4 PRECAST CONCRETE MANHOLE.
2. IN UNPAVED TRAFFIC AREAS FORM A CONCRETE COLLAR 10" WIDE AND 10" DEEP AROUND MANHOLE FRAME.
3. MAXIMUM DEPTH SHALL BE 6 FEET.
4. DROP ACROSS MANHOLE SHALL BE 0.1' MIN. SEE STANDARD SPECIFICATIONS FOR SPECIFIC DIRECTIONS.
5. SEE STANDARD SPECIFICATIONS FOR INLET AND OUTLET PIPE OF DIFFERENT SPECIFICATIONS.

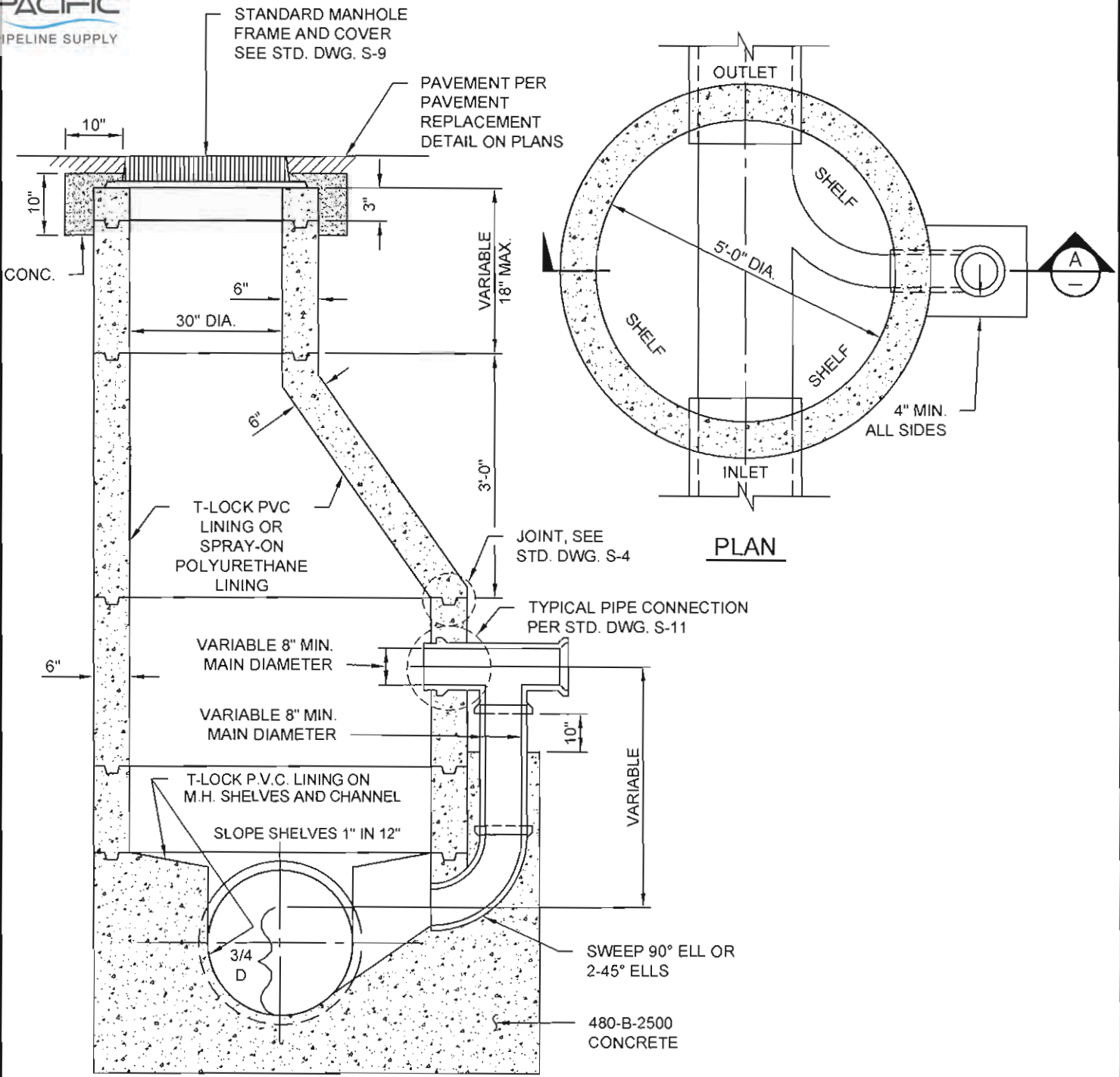
REVISION	BY	APPR	DATE

**EVMSD**  
 Elsinore Valley Municipal Water District  
*Paul S. Carver* 11/7/12  
 Paul S. Carver R.C.E. 31518 DATE

**SHALLOW MANHOLE**

STD. DWG. NO.

**S-7**



**SECTION A-A**

**NOTE:**

1. THIS STD. DWG. TO BE USED ONLY WITH WRITTEN APPROVAL FROM EVMWD ENGINEERING DEPARTMENT.
2. MANHOLES AT INTERSECTIONS SHALL HAVE STUB OUTS IN THE OTHER TWO DIRECTIONS WITH RESPECT TO THE INLET AND OUTLET. SEE SECTION 2.04B OF THE STANDARD DESIGN REQUIREMENTS.
3. SEE SECTION 2.04B OF THE STANDARD DESIGN REQUIREMENTS FOR INLET AND OUTLET PIPE OF DIFFERENT SIZES.
4. DROP ACROSS MANHOLE SHALL BE 0.1' MIN. SEE STANDARD DESIGN REQUIREMENTS SECTION 2.04B-5B FOR SPECIFIC DIRECTIONS.

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 El Dorado Valley Municipal Water District  
*Paul S. Carver* 11/7/12  
 Paul S. Carver R.C.E. 31516 DATE

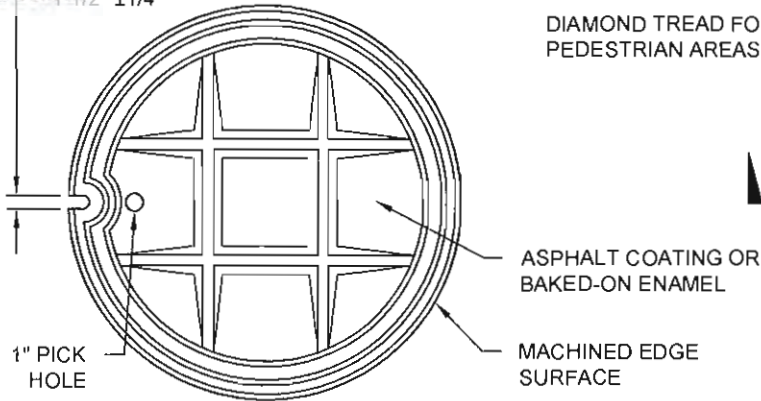
**PRECAST CONCRETE  
 DROP MANHOLE**

STD. DWG. NO.  
**S-8**

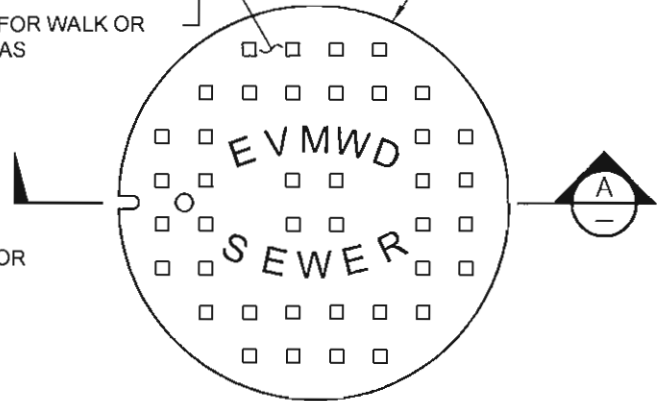
RAISED SQUARE BLOCK TREAD FOR ASPHALT TRAFFIC AREAS

DIAMOND TREAD FOR WALK OR PEDESTRIAN AREAS

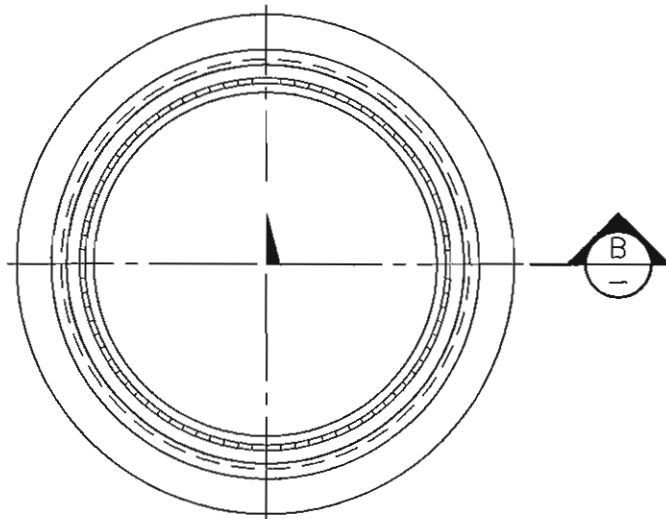
MACHINED EDGE SURFACE



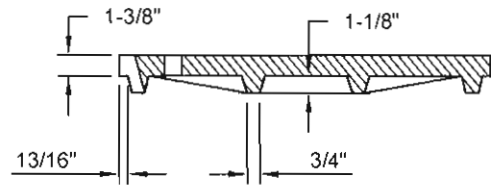
**COVER-BOTTOM VIEW**



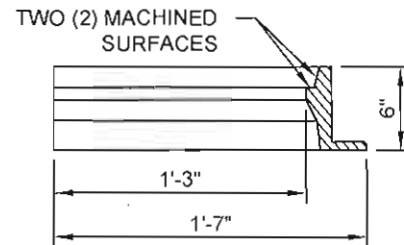
**COVER-TOP VIEW**



**RING PLAN**



**SECTION A-A**



**SECTION B-B**

**TYPICAL INSTALLATION NOTES:**

1. FRAME AND COVER SHALL BE MACHINED TO PROVIDE A NON-ROCKING SURFACE. MACHINED TOLERANCE BETWEEN FRAME AND COVER SHALL BE ±1/8" TOTAL. FRAME AND COVER TO BE SELECTED FROM ACCEPTED MATERIALS GUIDELINE.
2. GRAY CAST IRON SHALL CONFORM TO A.S.T.M. A48, CLASS 30B.
3. MANHOLE COVERS 36" DIAMETER AND GREATER SHALL BE OF 2-PIECE CONSTRUCTION WITH INSERT NOT SMALLER THAN 24" IN DIAMETER.
4. THE 30" MANHOLE FRAME AND COVER WEIGHT SHALL CONFORM TO A.S.T.M. A48, CLASS 30B.
5. THE MARKING LETTERS SHALL BE CAST IN THE COVER AND SHALL BE A MINIMUM 2 1/2" HIGH.
6. CASTINGS TO BE ASPHALT DIPPED PRIOR TO INSTALLATION.

**BOLT-DOWN COVER INSTALLATION NOTES:**

1. WATER PROOF, BOLT DOWN LIDS WITH S.S. BOLTS REQUIRED FOR COVERS NOT IN PUBLIC STREETS/ALLEYS.
  - A. SIDE PLY AND PICK HOLE SHALL BE REPLACED WITH A CLOSED PICK HOLE.
  - B. GASKET MATERIAL SHALL BE 1/2" x 1/2" NEOPRENE GASKET.
  - C. BOLTS SHALL BE 1 1/2" x 1/2" S.S. TYPE 307, SIX EQUALLY SPACED.
  - D. BOLT DOWN LIDS SHALL BE SELECTED FROM APPROVED MATERIALS LIST.

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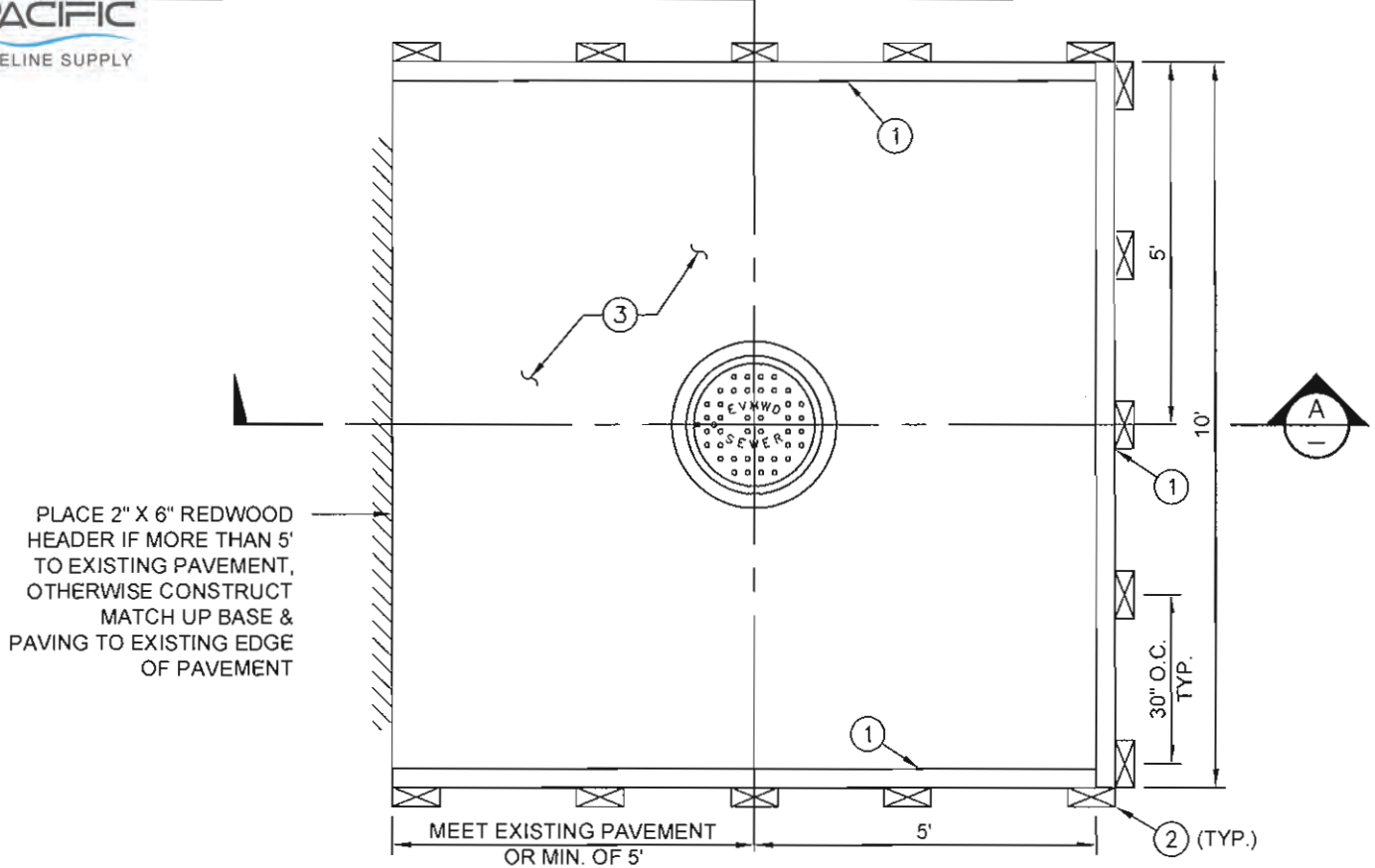
*Paul S. Carver* 11/7/12  
 Paul S. Carver R.C.E. 31516 DATE

**MANHOLE FRAME AND COVER**

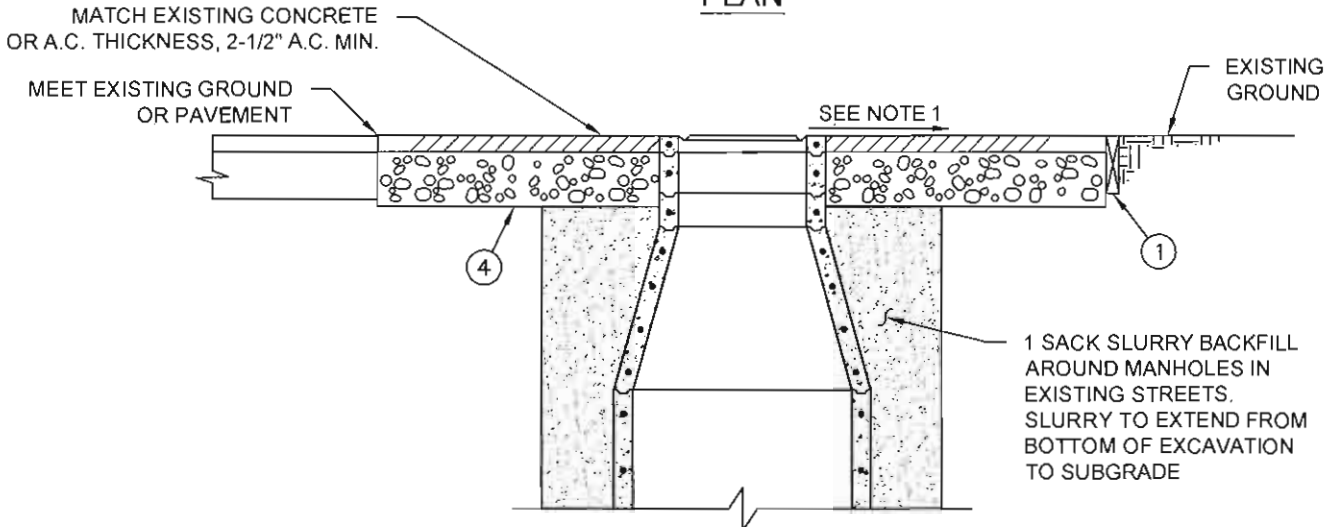
STD. DWG. NO.

**S-9**





**PLAN**



**SECTION A-A**

**NOTES:**

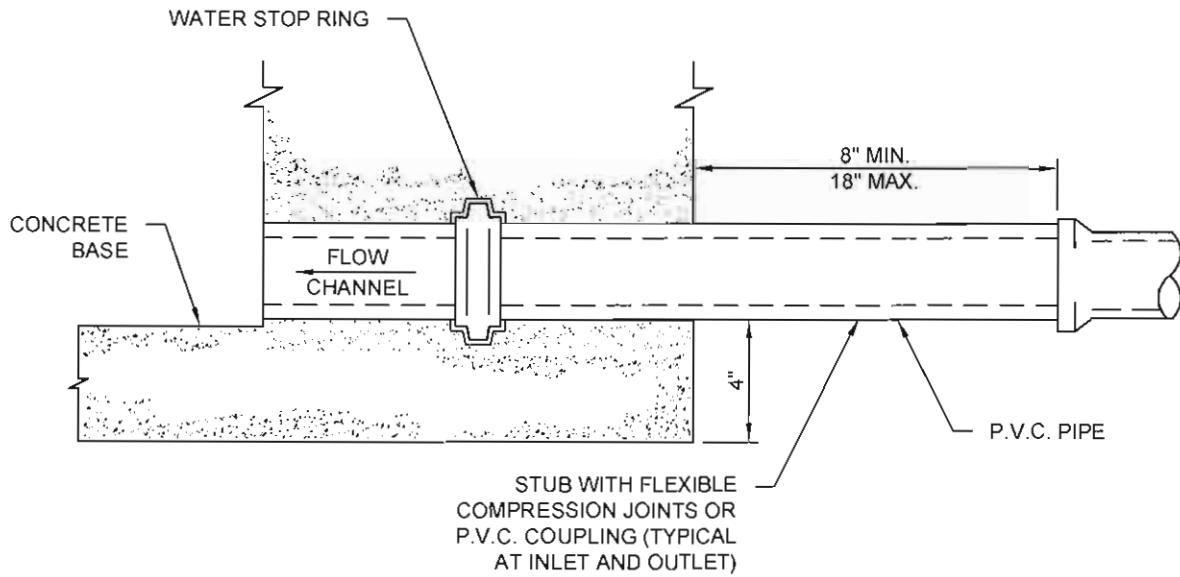
1. SLOPE WILL CONFORM TO RIVERSIDE COUNTY ROAD IMPROVEMENTS STANDARDS AND SPECIFICATIONS, OR MEET EXISTING CONDITIONS AS DIRECTED BY ENGINEER.
2. VALVES LOCATED IN LANDSCAPED AREAS SHALL HAVE A 2'x2' CONCRETE PAD INSTALLED.
3. MATERIALS SHALL BE SELECTED FROM THE ACCEPTED MATERIALS GUIDELINE.

ITEM	DESCRIPTION
(1)	2"x6" REDWOOD HEADERS IF REQUIRED BY ENGINEER OR AS DIRECTED
(2)	2"x4"x18" STAKES (3 PER SIDE) AT 30" O.C.
(3)	AREA TO BE PAVED
(4)	6" OF 3/4" CLASS 2 CRUSHED AGGREGATE BASE

REVISION	BY	APPR	DATE

**PAVING DETAIL  
 AROUND MANHOLES**

STD. DWG. NO.  
**S-10**



STUB WITH FLEXIBLE  
 COMPRESSION JOINTS OR  
 P.V.C. COUPLING (TYPICAL  
 AT INLET AND OUTLET)

NOTE:

1. SEE STD. NO. S-4 OR S-5 FOR MANHOLE.
2. SEE ACCEPTED MATERIALS GUIDELINE FOR WATER STOP.
3. SIKAFLEX ADHESIVE MAY BE USED WITH WRITTEN APPROVAL.

DETAIL OF WATER STOP RING WITH P.V.C. PIPE

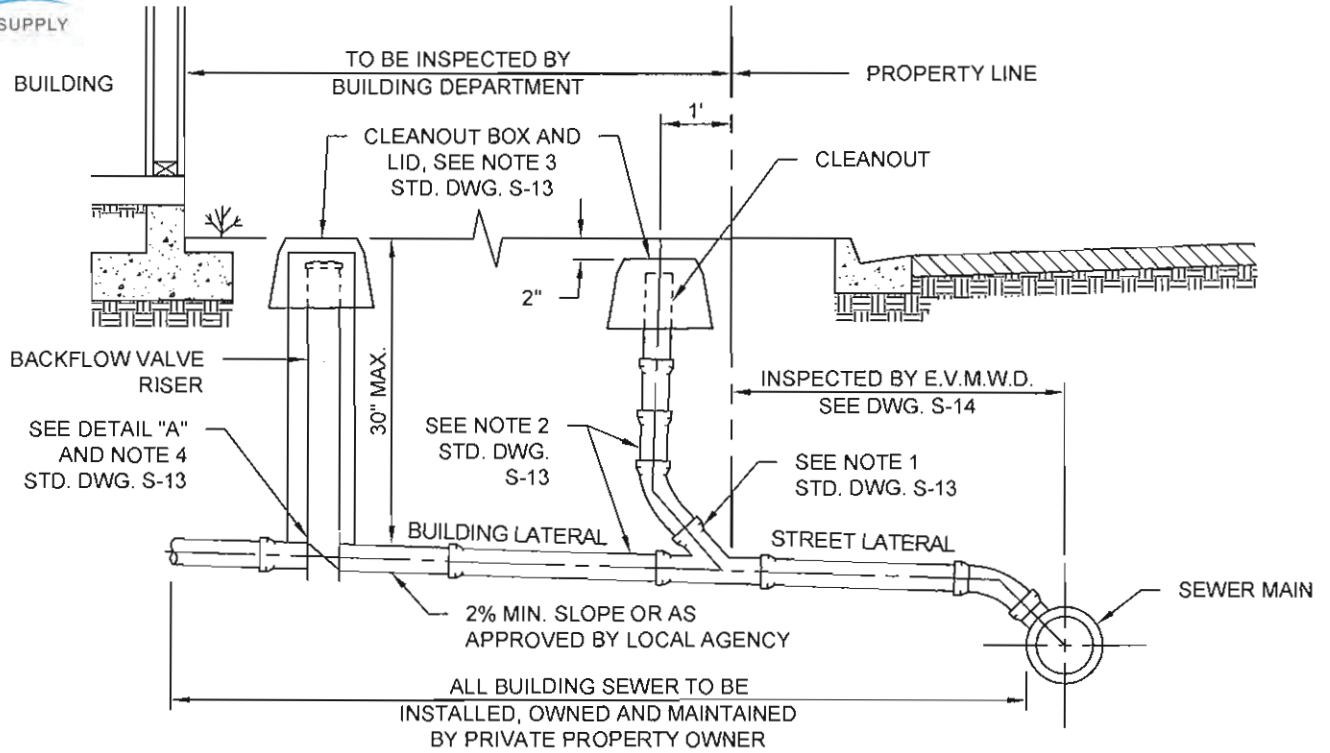
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Elmore Valley Municipal Water District  
*Paul S. Carver* 11/7/12  
 Paul S. Carver R.C.E. 31516 DATE

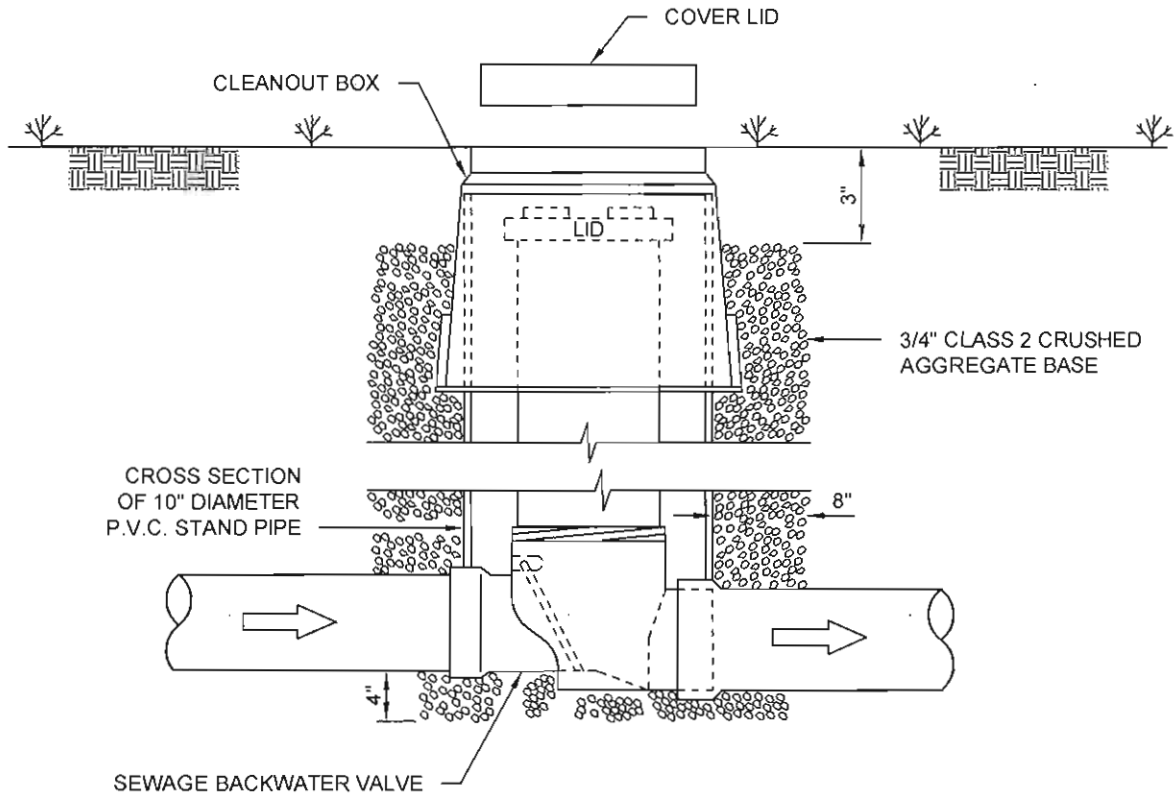
PIPE CONNECTION DETAILS  
 FOR CAST-IN-PLACE  
 CONCRETE BASE

STD. DWG. NO.

S-11



**TYPICAL LATERAL ASSEMBLY**



**DETAIL "A" - SEWAGE BACKFLOW VALVE ASSEMBLY**

REVISION	BY	APPR	DATE

**E.V.M.W.D.**  
 Elsinore Valley Municipal Water District  
*Paul S. Carver* 11/7/12  
 Paul S. Carver R.C.E. 31516 DATE

TYPICAL LATERAL ASSEMBLY

STD. DWG. NO.

S-12

**NOTES:**

1. A 45 DEGREE BEND AND STANDARD WYE BRANCH CONNECTION SHALL BE USED. THE 45 DEGREE BEND AND WYE BRANCH CONNECTION SHALL BE THE SAME DIAMETER AS THE SEWER LATERAL ENTERING FROM THE STREET AND SHALL BE SUPPORTED BY THE RECOMPACTION OF THE EXISTING SOIL IN THE TRENCH. DUCTILE IRON FITTINGS MAY BE USED IF AUTHORIZED BY THE DISTRICT.
2. THE BUILDING LATERAL SHALL BE CONSTRUCTED USING IAPMO LISTED MATERIALS (I.E. A.B.S. OR PVC PIPE). THE MINIMUM DIAMETER SHALL BE PER PLUMBING CODE STANDARDS, THE CLEANOUT STAND PIPE (4" DIA. MIN.) SHALL BE THE SAME DIAMETER AS THE LATERAL ENTERING FROM THE STREET. THE STAND PIPE SHALL BE CONSTRUCTED USING IAPMO LISTED MATERIALS (I.E. A.B.S. OR PVC PIPE). THE MINIMUM SLOPE OF THE LATERAL SHALL BE 2% OR AS PERMITTED BY LOCAL AGENCY.
3. A PLASTIC CLEANOUT BOX AND LID IS REQUIRED OVER THE CLEANOUT STACK (AND BACKWATER VALVE, IF USED) WHEN LOCATED IN NON-VEHICULAR TRAFFIC AREAS. IN VEHICULAR TRAFFIC AREAS (I.E. DRIVEWAYS) A CONCRETE CLEANOUT BOX WITH CAST IRON LID IS REQUIRED.
4. IF HOUSE SLAB DRAINAGE ELEVATION IS BELOW THE NEAREST UPSTREAM MANHOLE LID, A SEWAGE BACKFLOW VALVE ASSEMBLY WILL BE REQUIRED, IN ACCORDANCE WITH THE LATEST EDITION OF THE U.P.C., CHAPTER 7, SECTION 710.0 PARAGRAPH 710.1. READS:

SECTION 710.0: DRAINAGE OF FIXTURES LOCATED BELOW THE NEXT UPSTREAM MANHOLE OR BELOW THE MAIN SEWER LEVEL. FOR ASSISTANCE CALL E.V.M.W.D.

(710.1): "DRAINAGE PIPING SERVING FIXTURES WHICH HAVE FLOOD LEVEL RIMS LOCATED BELOW THE ELEVATION OF THE NEXT UPSTREAM MANHOLE COVER OF THE PUBLIC SEWER SERVING SUCH DRAINAGE PIPING SHALL BE PROTECTED FROM BACKFLOW OF SEWAGE BY INSTALLING AN ACCEPTABLE TYPE BACKWATER VALVE. FIXTURES ABOVE SUCH ELEVATION SHALL NOT DISCHARGE THROUGH THE BACKWATER VALVE."

5. THE BACKWATER VALVES SHALL BE LOCATED SO ACCESS FOR MAINTENANCE IS NOT IMPAIRED.
6. MATERIAL SHALL BE SELECTED FROM ACCEPTED MATERIALS GUIDELINE.

REVISION	BY	APPR	DATE

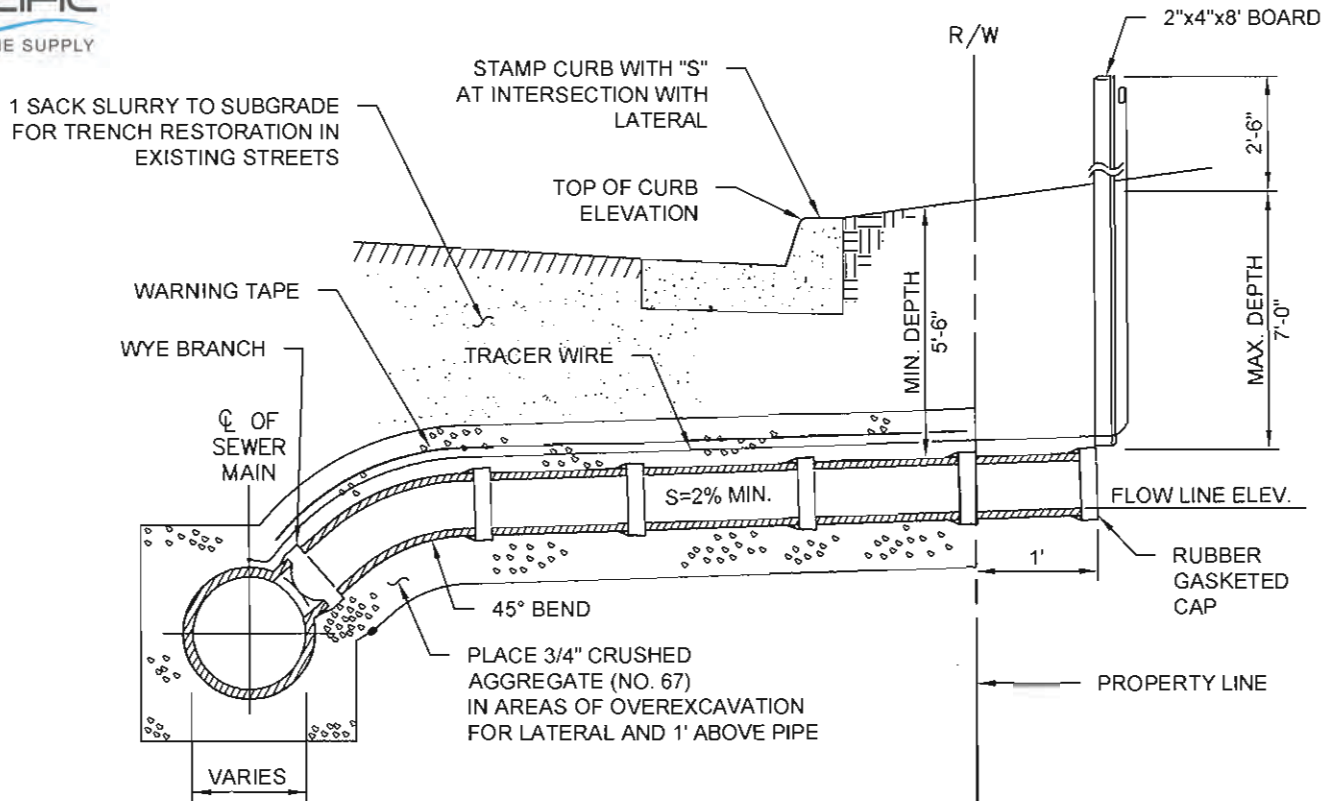


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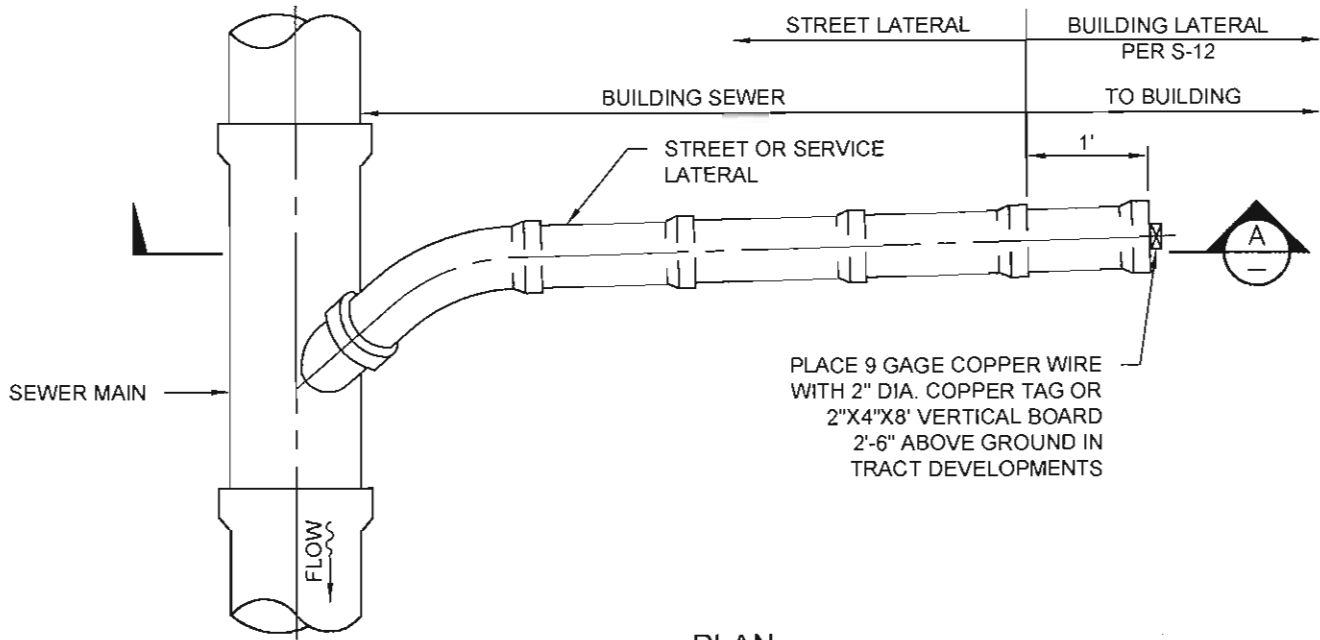
**TYPICAL LATERAL  
ASSEMBLY NOTES**

STD. DWG. NO.

**S-13**



**SECTION A-A**



**PLAN**

**NOTES:**

1. MINIMUM SEWER LATERAL SIZE (UNLESS OTHERWISE SHOWN ON PLANS) SHALL BE:  
 6" FOR MULTI-UNIT RESIDENTIAL, COMMERCIAL, SCHOOLS AND INDUSTRIAL ZONED AREAS  
 4" FOR SINGLE FAMILY DWELLING UNITS
2. SEE STANDARD SPECIFICATIONS FOR 3/4" CRUSHED AGGREGATE NO. 67.

REVISION	BY	APPR	DATE

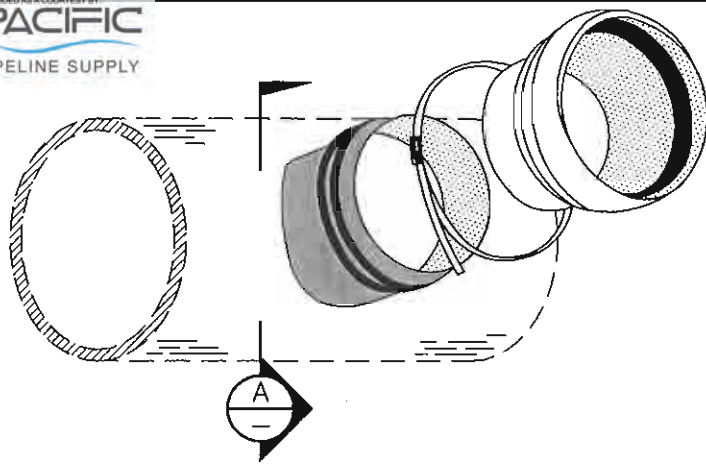


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 Paul S. Carver R.C.E. 31516 DATE

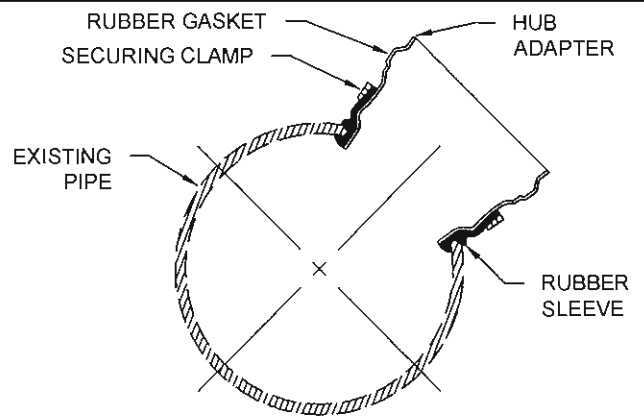
**STREET SEWER LATERAL**

STD. DWG. NO.

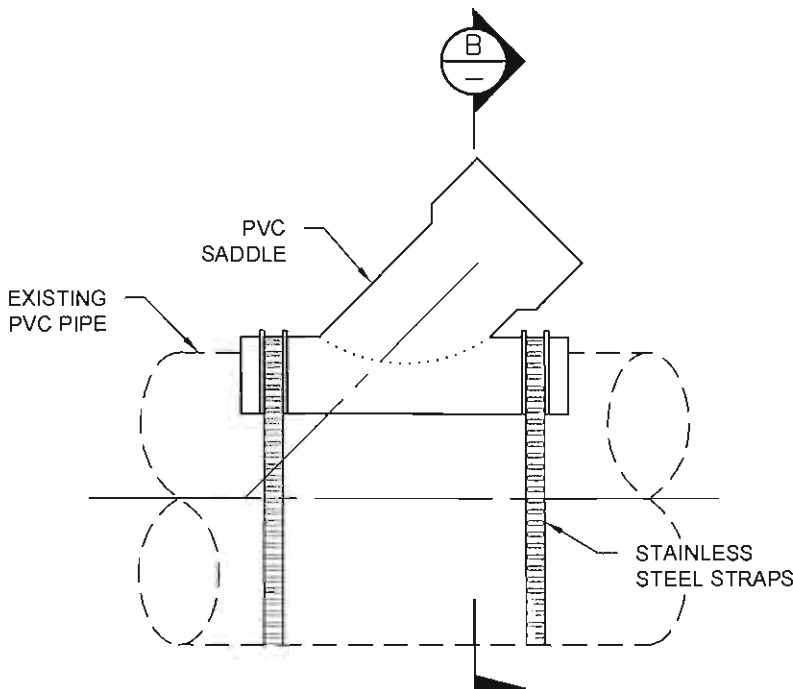
**S-14**



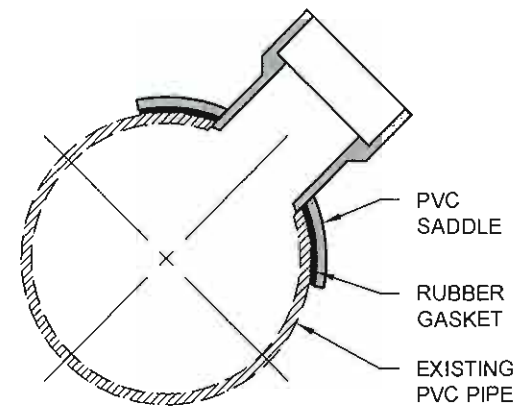
INSERT STYLE DETAIL



SECTION A-A



WYE STYLE DETAIL



SECTION B-B

NOTES:

1. GASKETED BELL SHALL BE IN ACCORDANCE WITH ACCEPTED MATERIALS GUIDELINE.
2. THE INSTALLATION OF GASKETED BELLS SHALL COMPLY WITH THE MANUFACTURER'S INSTALLATION GUIDELINES.
3. THE HOLE FOR THE GASKETED BELL FITTING SHALL BE MADE WITH A TAPPING MACHINE OR PROPERLY SIZED CORE DRILL. THE HOLE SHALL BE CLEANLY MACHINED AND IF NECESSARY WORKED BY HAND WITH A RASP OR SANDED TO ACCOMPLISH A TRUE AND NEAT OPENING FOR THE COLLAR WYE.
4. THE CONTRACTOR SHALL KEEP ALL CHIPS, DIRT, AND OTHER FOREIGN MATTER OUT OF THE SEWER LATERAL CONNECTION AND SHALL PERFORM A CLEANING AND BALLING OF THE REACH LATERAL CONNECTION IF DIRECTED TO DO SO BY THE INSPECTOR.
5. THE CONTRACTOR SHALL REPAIR OR REPLACE ANY DAMAGED PIPE AS DIRECTED BY THE INSPECTOR AT CONTRACTOR'S COST.
6. THE CONTRACTOR SHALL CONTACT THE GASKETED BELL MANUFACTURER AND SPECIFY THE SEWER MAIN SIZE AND MATERIAL FOR THE CORRECT SEWER PIPE CONNECTION MODEL..
7. WHEN INSTALLING LATERALS ON 10" AND SMALLER SEWER PIPE USE MANUFACTURED PVC SADDLE WITH INTEGRAL GASKETS & STAINLESS STEEL STRAPS.

REVISION	BY	APPR	DATE

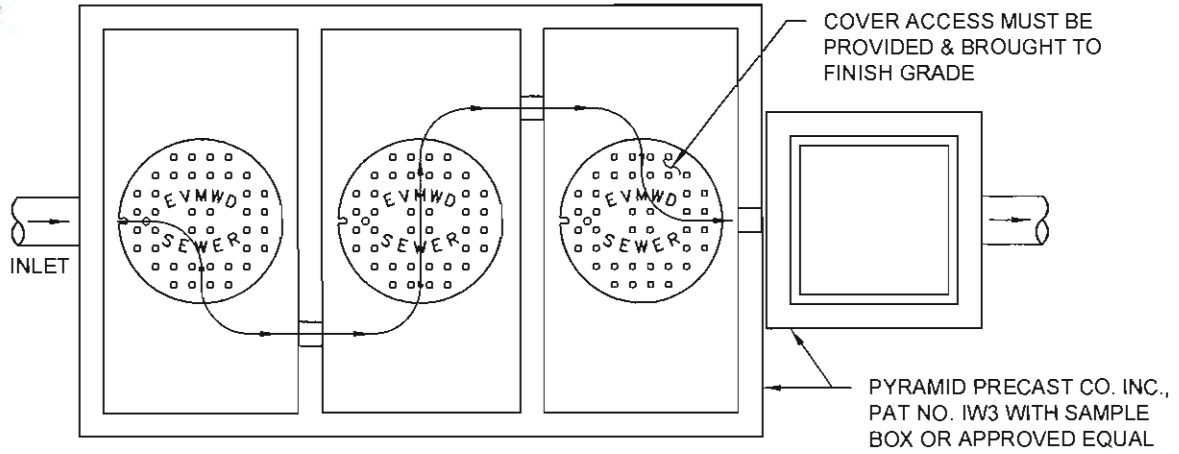


*Paul S. Carver* 11/26/12  
 Paul S. Carver R.C.E. 31518 DATE

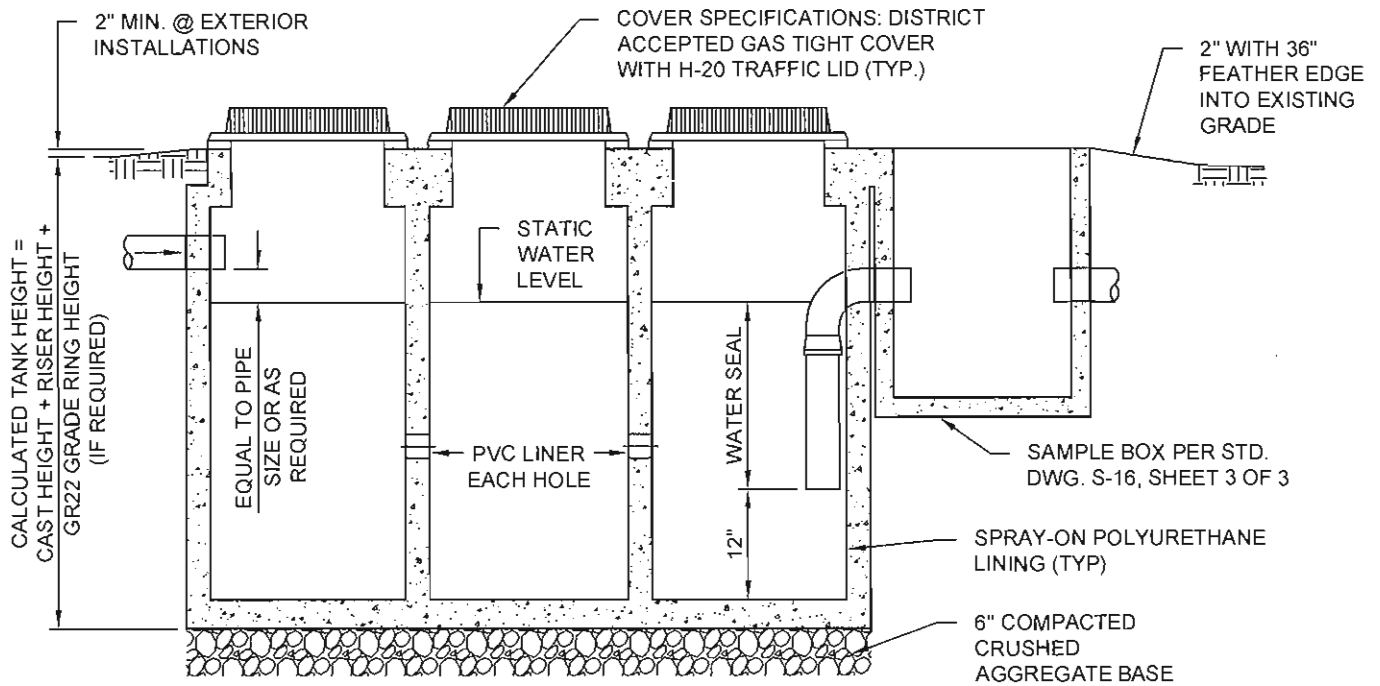
TYPICAL SEWER LATERAL  
 CONNECTION TO  
 EXISTING SEWER MAIN

STD. DWG. NO.

S-15



**PLAN - 3 CHAMBERED INTERCEPTOR**




**SECTION**

**NOTES:**

1. ALL INTERCEPTORS SHALL HAVE A MINIMUM LIQUID CAPACITY OF 750 GALLONS.
2. ALL INTERCEPTORS SHALL BE UPC/IAPMO ACCEPTED.
3. ALL WASTEWATER, EXCLUDING RESTROOMS, MUST PASS THROUGH THE INTERCEPTOR.
4. ALL SURFACE WATER SHALL DRAIN AWAY FROM THE INTERCEPTOR.
5. EXTERNAL PLUMBING PER LOCAL PLUMBING CODE.

REVISION	BY	APPR	DATE

  
 Elsinore Valley Municipal Water District  
*Paul S. Carver* 11/7/12  
 Paul S. Carver R.C.E. 31516 DATE

**SAND/OIL SEPARATOR**

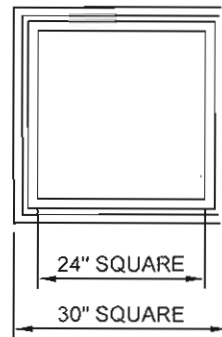
STD. DWG. NO.
<b>S-16</b>
1 OF 3

**CONSTRUCTION NOTES**

1. GREASE TRAP SHALL BE DESIGNED TO RETAIN MAXIMUM AMOUNTS OF GREASE, SAND, CHEMICALS, AND OTHER INDUSTRIAL WASTES FROM ENTRANCE INTO THE SEWER SYSTEM.
2. INTERCEPTORS AND GRADE RING MANHOLES SHALL BE PRECAST CONCRETE OF 3000 P.S.I. COMPRESSIVE STRENGTH AT 28 DAYS, VIBRATED FOR DENSITY, REINFORCED DEFORMED STEEL BARS CONFORMING TO ASTM SPEC. A615 GRADE 60. ALL CONTINUOUS MONOLITHIC CONST.
3. INTERIOR OF INTERCEPTOR TO BE CONCRETE WITH SPRAY-ON POLYURETHANE.
4. COMPONENTS SHALL BE IN ACCORDANCE WITH ACCEPTED MATERIALS GUIDELINE.

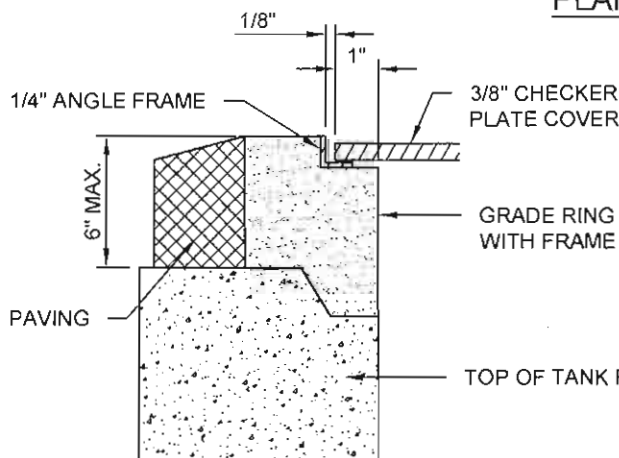
**INSTALLATION NOTES**

1. PRIOR TO INSTALLATION, CONTACT E.V.M.W.D. AND DEPARTMENT OF BUILDING AND SAFETY FOR REQUIRED TANK SIZE AND/OR SPECIAL INSTALLATION REQUIREMENTS.
2. ALL SURFACE WATER SHALL DRAIN AWAY FROM INTERCEPTOR EXCLUDING RAIN WATER FROM THE SEWER SYSTEM. WASTES ENTER THROUGH INLET PIPE ONLY.
3. TRAFFIC LOCATION INSTALLATIONS WILL REQUIRE THE TOP OF THE INTERCEPTOR TO BE PLACED BELOW THE PAVING. INSPECTION MANHOLES MUST BE BROUGHT TO THE SURFACE WITH A GRADE RING OF 8" MAXIMUM HEIGHT.
4. INTERCEPTOR SHALL REST ON FIRM LEVEL GROUND (6" CRUSHED AGGREGATE BASE) TO AVOID SETTLING.
5. SEPARATOR AND SAMPLE BOX COVER PLATES NOT SUBJECT TO VEHICULAR TRAFFIC MAY BE 3/8" STEEL CHECKER PLATES BY 24" SQUARE. AT TRAFFIC LOCATIONS USE STEEL H-20 RATED STEEL FRAMES AND ASPHALT COATED COVERS.

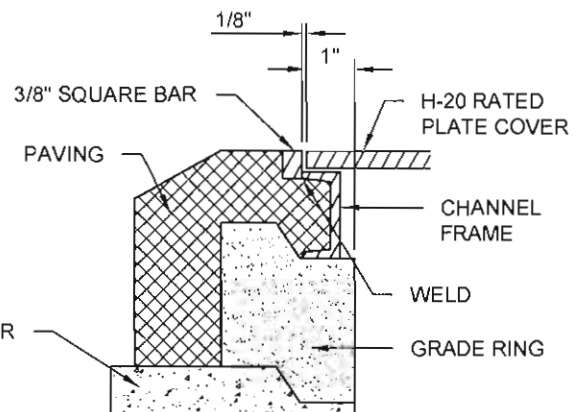


**GR-22 GRADE RING**  
 WITH OR WITHOUT STEEL FRAME.  
 SIZES 3", 4", 5", 6" (HIGH) SPECIAL  
 AND FOUNDRY COVERS AVAILABLE  
 ON REQUEST.

**PLAN**



**NOT SUBJECT TO VEHICULAR TRAFFIC AREAS**



**TRAFFIC AREA**

**TYPICAL MANHOLE DETAILS**

REVISION	BY	APPR	DATE

**EVMWD**  
 Elsinore Valley Municipal Water District  
*Paul S. Carver* 11/7/12  
 Paul S. Carver R.C.E. 31516 DATE

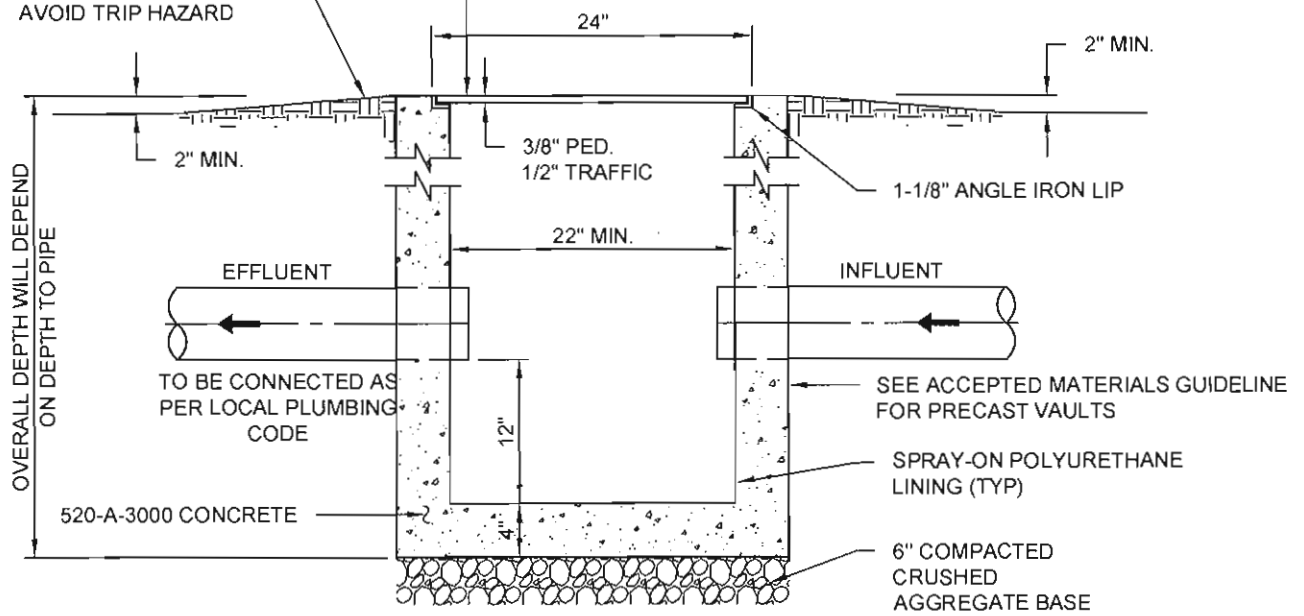
**SAND/OIL SEPARATOR  
 AND SAMPLE BOX  
 COVER PLATE DETAIL**

STD. DWG. NO.  
**S-16**  
 2 OF 3

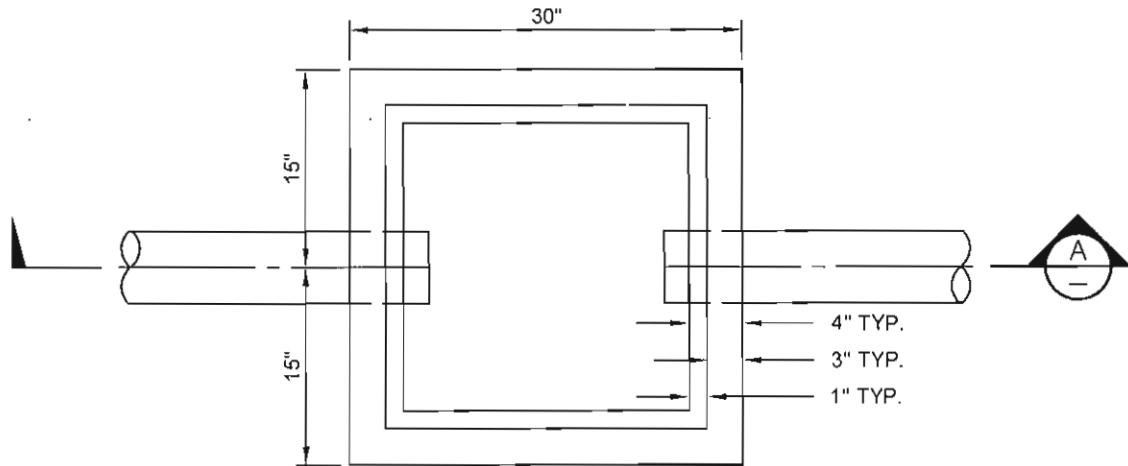


BOX TO BE SET 2" ABOVE FINISHED GRADE WITH 36" FEATHER INTO FINISHED GRADE TO AVOID TRIP HAZARD

COVER:  
 A NON-SKID SURFACE SUCH AS DIAMOND PLATE OR OTHER ACCEPTABLE SURFACE IS REQUIRED. FRAME AND COVER MUST BE GAS TIGHT.



**SECTION A-A**



**PLAN**

**NOTES:**

1. ALL SURFACE WATER SHALL DRAIN AWAY FROM THE SAMPLE BOX.
2. LID AND ANGLE IRON THICKNESS WILL DEPEND ON TRAFFIC IN SAMPLE BOX AREA.
3. INSTALLATION TO BE IN ACCORDANCE WITH ALL LOCAL PLUMBING CODES.
4. WHEN USED IN CONJUNCTION WITH AN INTERCEPTOR, SEPARATOR, OR CLARIFIER THE SAMPLE BOX SHALL BE POURED MONOLITHICALLY WITH THE TANK END WALL.

REVISION	BY	APPR	DATE

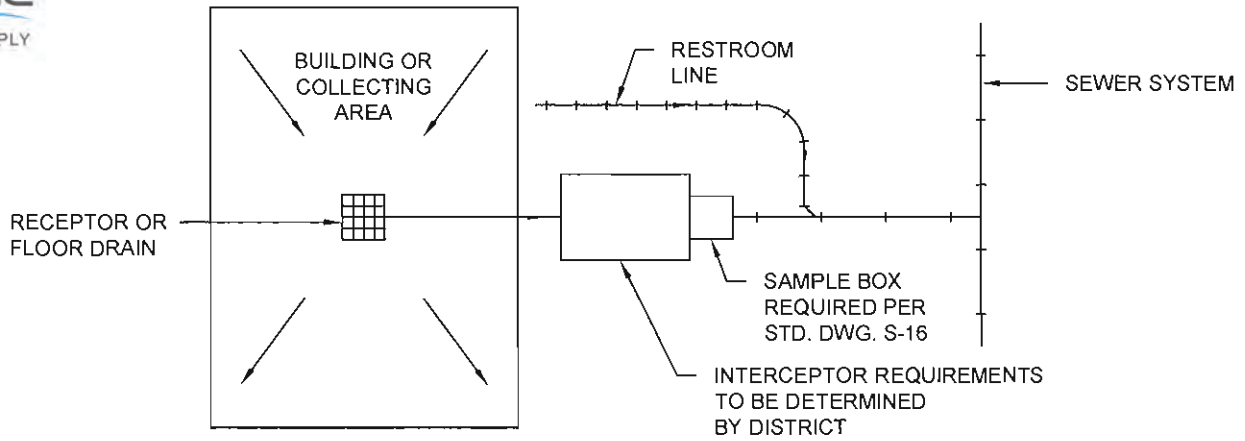
**EVMD**  
 Elsinore Valley Municipal Water District  
*Paul S. Carver* 11/7/12  
 Paul S. Carver R.C.E. 31518 DATE

**SAND/OIL SEPARATOR  
 AND SAMPLE BOX**

STD. DWG. NO.

**S-16**

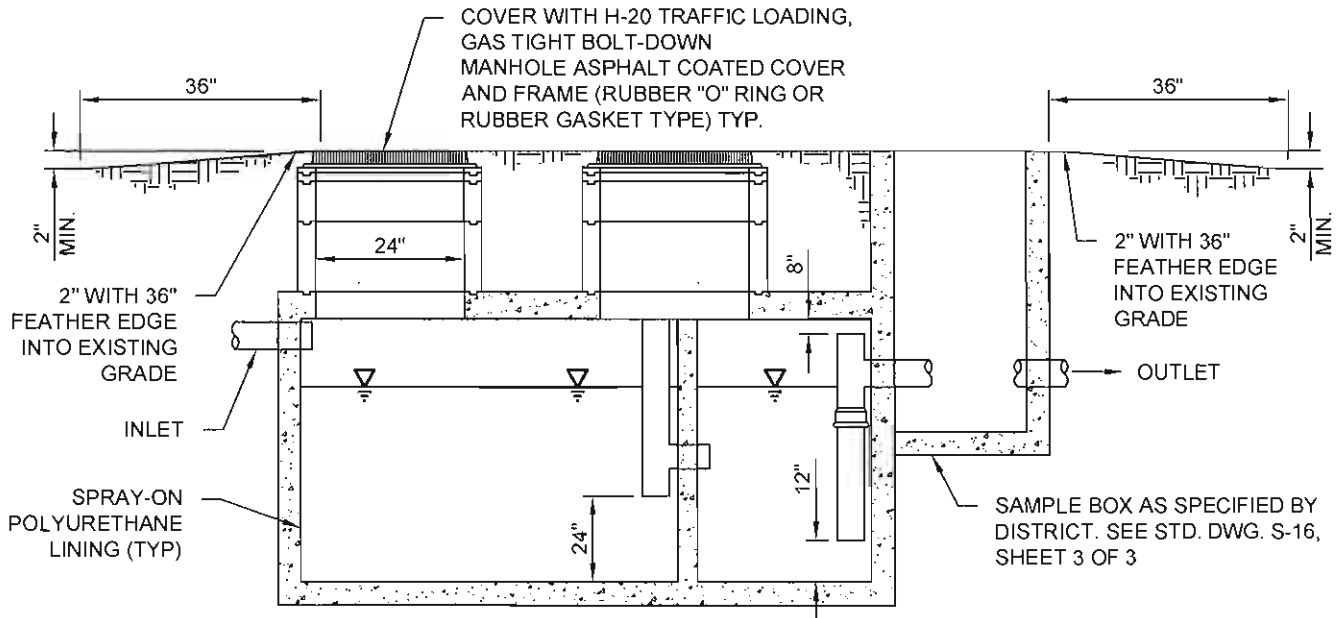
3 OF 3



NOTE:

1. SPACING OF SURFACE ACCESS POINTS TO INTERCEPTOR (RAISED MANHOLE COVERS) SHALL BE PROVIDED AT NOT LESS THAN 15' INTERVALS.

TYPICAL INSTALLATION



2 CHAMBER INTERCEPTOR

NOTES:

1. ALL INTERCEPTORS SHALL HAVE A MINIMUM LIQUID CAPACITY OF 750 GALLONS.
2. ALL INTERCEPTORS SHALL BE UPC/IAPMO ACCEPTED.
3. ALL WASTEWATER, EXCLUDING RESTROOMS, MUST PASS THROUGH THE INTERCEPTOR.
4. ALL SURFACE WATER SHALL DRAIN AWAY FROM THE INTERCEPTOR.
5. EXTERNAL PLUMBING PER LOCAL PLUMBING CODE.

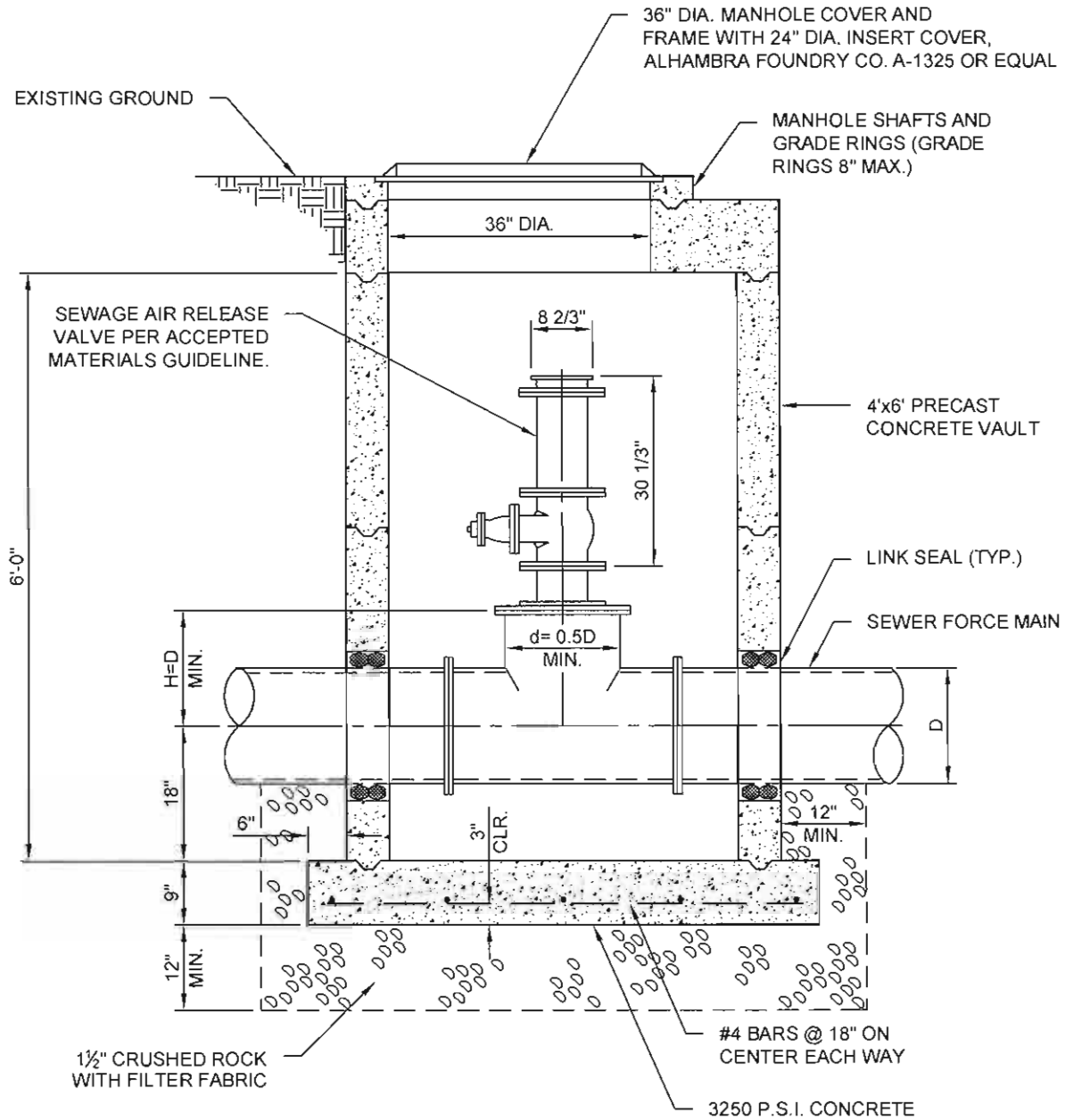
REVISION	BY	APPR	DATE

**EMWD**  
 Elmore Valley Municipal Water District  
*Paul S. Carver* 11/7/12  
 Paul S. Carver R.C.E. 31516 DATE

GREASE INTERCEPTOR

STD. DWG. NO.

S-17



**PROFILE**

**NOTE:**

- 1. SEE ACCEPTED MATERIALS GUIDELINE FOR MATERIALS AND EQUIPMENT MANUFACTURERS.

REVISION	BY	APPR	DATE

  
 Elajore Valley Municipal Water District  
*Paul S. Carver* 11/7/12  
 Paul S. Carver R.C.E. 31516 DATE

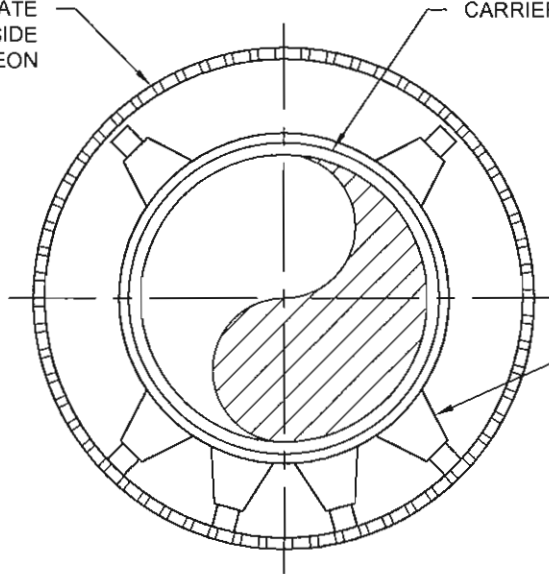
**SEWAGE AIR RELEASE  
AND VAULT DETAIL**

STD. DWG. NO.

**S-18**

STEEL PIPE WITH MINIMUM PLATE THICKNESS AND MINIMUM INSIDE DIAMETER PER SCHEDULE HEREON

CARRIER PIPE CENTERED IN CASING



1. FOR PVC CARRIER PIPE, USE POLYETHYLENE CASING INSULATORS WITH POLYETHYLENE SKIDS.
2. FOR DUCTILE IRON CARRIER PIPE, USE STAINLESS STEEL BAND SPACERS AND INSULATORS WITH GLASS FILLED POLYMER PLASTIC RUNNERS.
3. ALL CASING INSULATORS SHALL BE DESIGNED BY THE MANUFACTURER FOR APPLICATION GIVEN THE PARTICULAR CARRIER PIPE O.D. AND CASING PIPE I.D.
4. ALL BOLTS AND BANDS SHALL BE TYPE 304 STAINLESS STEEL.

CASING SCHEDULE		
NOMINAL PIPE SIZE	MINIMUM CASING SIZE	MIN. WALL
8"	16" I.D.	1/4"
10"	18" I.D.	1/4"
12"	20" I.D.	5/16"
15"	24" I.D.	5/16"
18"	30" I.D.	3/8"
21"	33" I.D.	3/8"
24"	36" I.D.	3/8"
27"	39" I.D.	1/2"
30"	42" I.D.	1/2"
36"	48" I.D.	5/8"
42"	54" I.D.	3/4"

**NOTES:**

1. SPACING BETWEEN THE CASING INSULATORS SHALL BE PER THE MANUFACTURERS RECOMMENDATIONS EXCEPT THAT THERE SHALL BE AT LEAST 4 CASING INSULATORS PER PIPE SECTION, ONE 12" FROM EACH JOINT AND ONE CENTERED. ADDITIONALLY, ONE INSULATOR SHALL BE INSTALLED 12" FROM EACH END OF THE CASING.
2. BOTH ENDS OF THE CASING BETWEEN THE CASING AND CARRIER PIPE MUST BE SEALED WATERTIGHT USING AN END SEAL, SELECTED FROM ACCEPTED MATERIALS GUIDELINE. BANDS SHALL BE TYPE 304 STAINLESS STEEL.
3. ALL STEEL CASING PIPE JOINTS SHALL BE WELDED FULL CIRCUMFERENCE.
4. ABOVE CASING THICKNESS ARE FOR OPEN TRENCH ONLY. FOR JACKED CASING SEE STANDARD SPECIFICATION.
5. HDPE CASING MAY BE USED IF MEETS ADEQUATE STRENGTH FOR GEOTECHNICAL CONDITIONS AND WITH WRITTEN APPROVAL FROM THE DIRECTOR OF ENGINEERING.

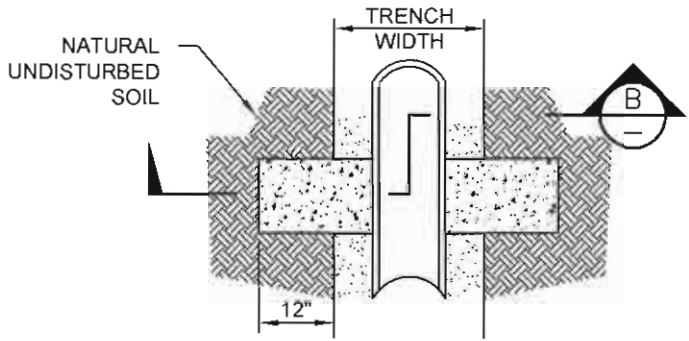
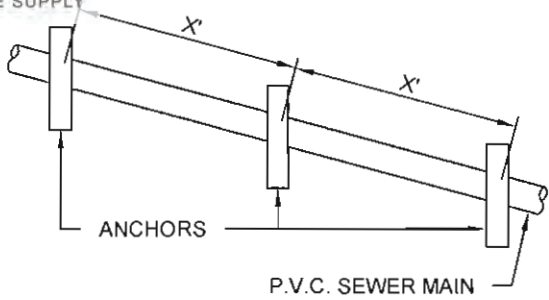
REVISION	BY	APPR	DATE

Elsinore Valley Municipal Water District  
*Paul S. Carver* 11/7/12  
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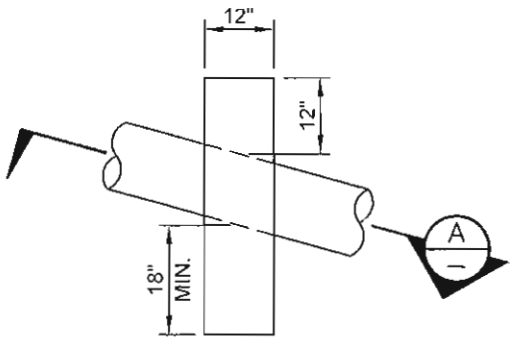
**STEEL CASING FOR  
 SEWER MAINS**

STD. DWG. NO.

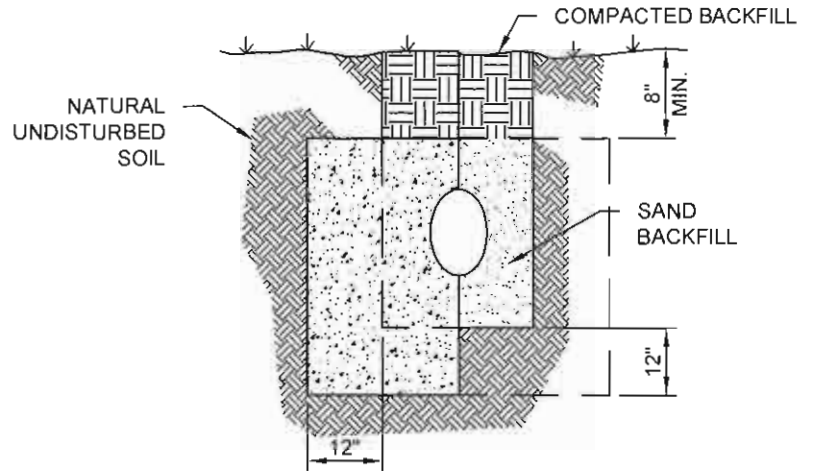
**S-19**



**SECTION A-A**

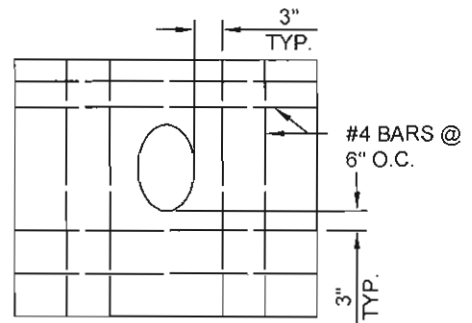


**ANCHOR DETAIL**



**SECTION B-B**

PIPE SLOPE	PIPE SLOPE	X DISTANCE
100%	1:1	12'
66.6%	1-1/2:1	14'
50%	2:1	16'
40%	2-1/2:1	18'
33.3%	3:1	20'



**REINFORCING STEEL PATTERN**

**NOTES:**

1. PIPE ANCHORS REQUIRED ON ALL SLOPES OF 3:1 OR GREATER.
2. ANCHOR SHALL EXTEND 12" INTO NATURAL UNDISTURBED SOIL.
3. CONCRETE SHALL BE 480-B-2500 PER SSPWC.
4. ANCHORS FOR TRAPEZOIDAL TRENCH SECTIONS WILL CONFORM TO TRENCH CROSS SECTION AND EXTEND 12" INTO UNDISTURBED SOIL.
5. DESIGN REQUIREMENTS FOR TRENCH DRAIN SUBDRAIN OR CANYON DRAIN SHALL BE IN ACCORDANCE WITH PROJECT GEOTECHNICAL ENGINEER'S RECOMMENDATIONS.

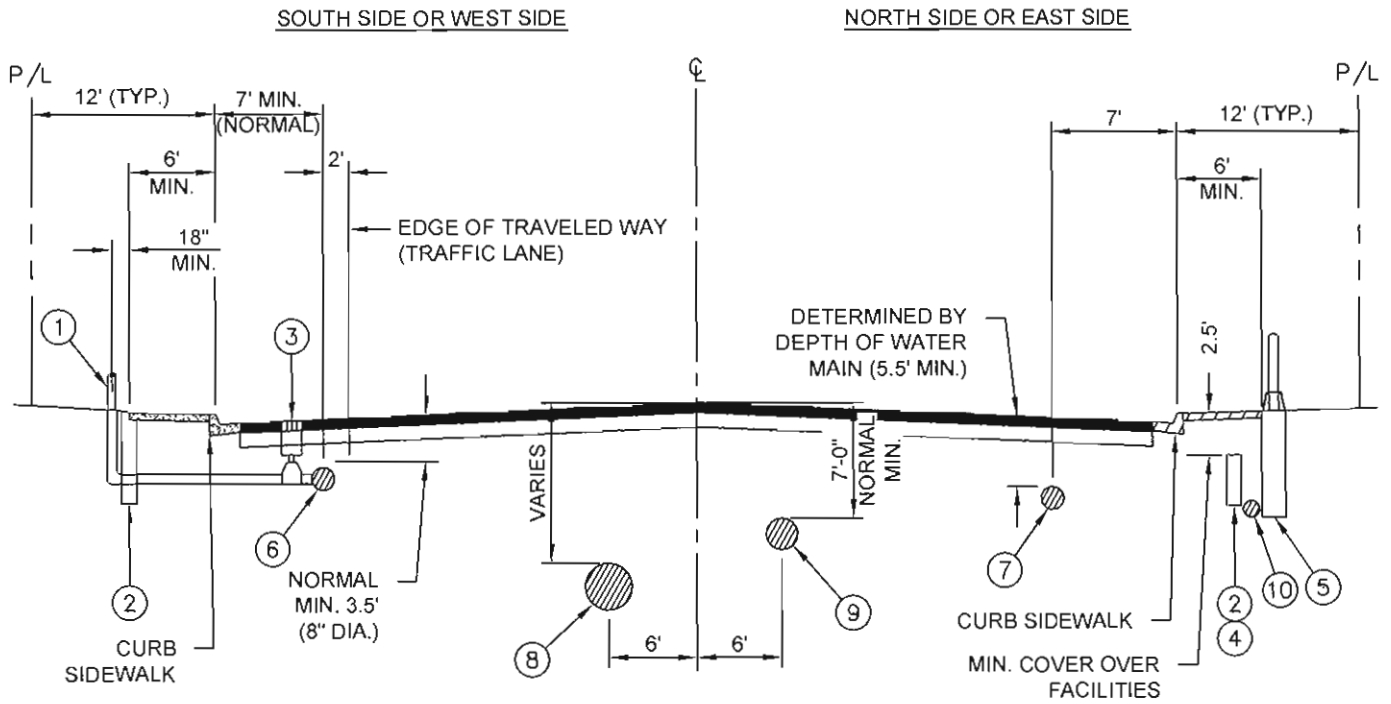
REVISION	BY	APPR	DATE

**EVMS**  
 Elsinore Valley Municipal Water District  
*Paul S. Carver* 11/7/12  
 Paul S. Carver R.C.E. 31516 DATE

**CONCRETE SLOPE ANCHORS**

STD. DWG. NO.

**S-20**




**NOTES:**

1. LOCATION AND DEPTH OF EXISTING AND PROPOSED UTILITIES MUST BE PROVIDED BY THE SUBDIVIDER AND SHOWN ON ANY PLANS SUBMITTED TO THE ROAD DEPARTMENT FOR APPROVAL.
2. CHANGES MAY BE PERMITTED BY EVMWD IN CASES OF CONFLICTING FACILITIES.
3. FOR COMMERCIAL SIDEWALKS, THE FIRE HYDRANT SHALL BE PLACED 18" BEHIND SIDEWALK. HYDRANTS SHALL NOT BE LOCATED IN SIDEWALKS.
4. MATERIALS SHALL BE SELECTED FROM THE ACCEPTED MATERIALS GUIDELINE.

ITEM	DESCRIPTION
①	FIRE HYDRANT, LOCATE IN ACCORDANCE WITH EVMWD STANDARDS
②	JOINT UTILITIES TRENCH
③	VALVE BOX
④	STREET LIGHTING CONDUIT IN TRENCH
⑤	STREET LIGHT BASE
⑥	DOMESTIC WATER MAIN
⑦	RECLAIMED WATER MAIN
⑧	STORM DRAIN
⑨	SEWER MAIN
⑩	GAS MAIN

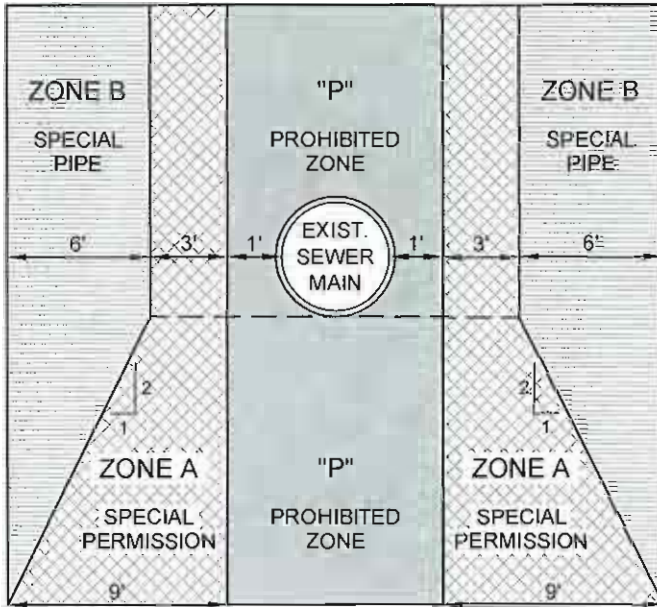
REVISION	BY	APPR	DATE

  
 EVMWD  
 Elsinore Valley Municipal Water District  
*Paul S. Carver* 11/7/12  
 Paul S. Carver R.C.E. 31516 DATE

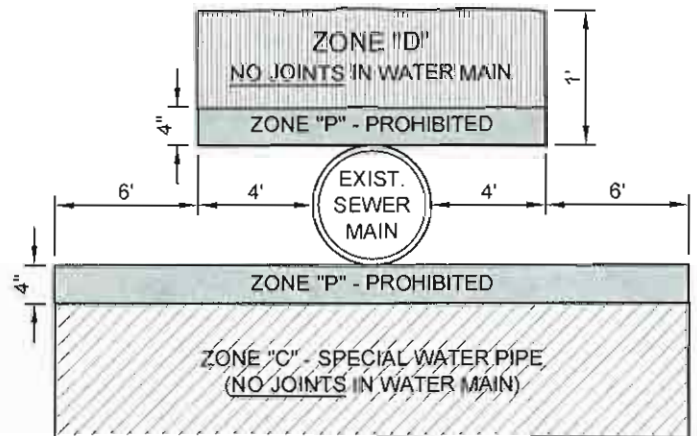
NORMAL UTILITY LOCATION

STD. DWG. NO.  
W-1

### PARALLEL CONSTRUCTION



### PERPENDICULAR CONSTRUCTION



**NOTES:**

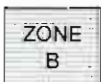
1. SEPARATION OF WATER MAIN FROM SEWER AND OTHER NON-POTABLE FLUIDS SHALL BE IN ACCORDANCE WITH STATE OF CALIFORNIA DEPARTMENT OF HEALTH SERVICES GUIDANCE MEMO NO. 2003-02 OR LATEST UPDATE.
2. DIMENSIONS ARE FROM OUTSIDE OF WATER MAIN TO OUTSIDE OF SEWER OR NON-POTABLE FLUID PIPELINES.
3. WATER MAINS ARE NOT PERMITTED WITHIN ANY OF THE ABOVE INDICATED ZONES UNLESS CONSTRUCTED IN CONFORMANCE WITH THE SPECIAL REQUIREMENTS AS SHOWN BELOW.
4. WATER AND SEWER MAINS SHALL BE INSTALLED IN SEPARATE TRENCHES. WATER MAINS SHALL BE INSTALLED AT LEAST 10-FEET HORIZONTALLY FROM, AND A MINIMUM OF 1-FOOT ABOVE SANITARY SEWERS WHEN PARALLEL TO THE SEWER MAIN AND A MINIMUM OF 1-FOOT HIGHER THAN SANITARY SEWERS WHEN CROSSING THE SEWER MAIN.

**ZONE**

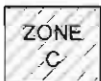
**SPECIAL SEWER CONSTRUCTION REQUIREMENTS**



NO WATER MAINS PARALLEL TO SANITARY SEWER MAIN SHALL BE CONSTRUCTED WITHOUT PRIOR WRITTEN APPROVAL FROM THE CALIFORNIA DEPARTMENT OF PUBLIC HEALTH.



SPECIAL WATER PIPE - RUBBER GASKETED CLASS 200 PRESSURE RATED WATER PIPE (DR 14 PER AWWA 900) OR EQUIVALENT; OR DUCTILE IRON PIPE WITH COMPRESSION JOINTS.



NO JOINTS IN WATER MAIN - SPECIAL WATER PIPE, SEE ZONE B PIPE MATERIAL.



NO JOINTS IN WATER MAIN.



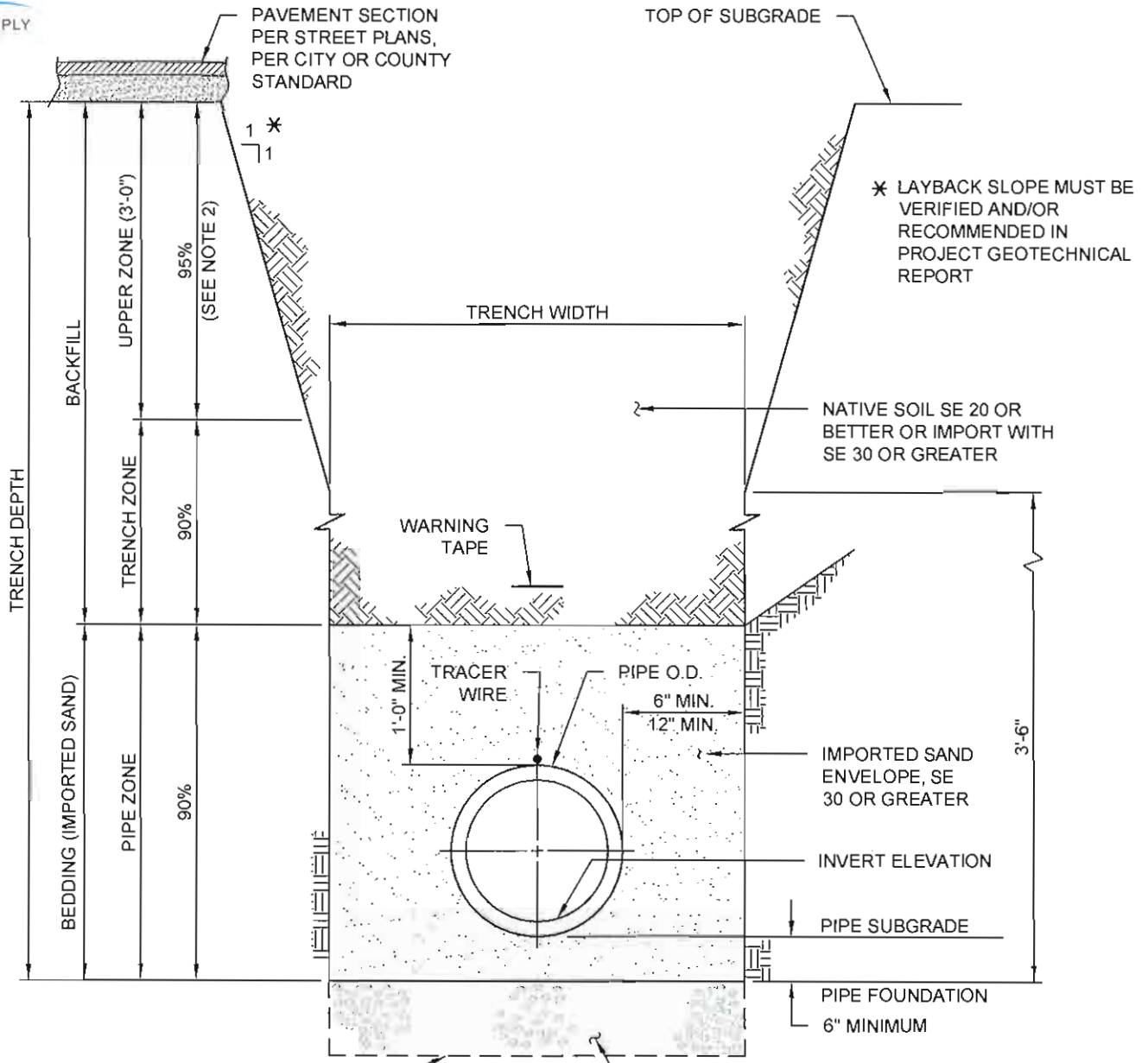
CONSTRUCTION PROHIBITED IN THIS AREA.

REVISION	BY	APPR	DATE

**PIPELINE SEPARATION REQUIREMENTS**

STD. DWG. NO.

W-2



IF UNSUITABLE SOIL IS ENCOUNTERED  
 GEOTECHNICAL ENGINEER IS TO  
 DETERMINE THE DEPTH OF REMOVAL  
 AND SIZE OF FOUNDATION ROCK  
 AND FILTER FABRIC REQUIREMENTS  
 AND SUBMIT FOR DISTRICT REVIEW

\* LAYBACK SLOPE MUST BE VERIFIED AND/OR  
 RECOMMENDED IN PROJECT GEOTECHNICAL REPORT

**NOTES:**

1. PAVING DICTATED BY LOCAL JURISDICTION.
2. 95% MAXIMUM DENSITY MINIMUM AS DETERMINED BY ASTM D1557.
3. TRENCHES GREATER THAN 5' DEPTH REQUIRE CAL/OSHA EXCAVATION PERMIT.
4. CONTRACTOR SHALL BE RESPONSIBLE TO PERFORM ALL TRENCHING AND EXCAVATION IN ACCORDANCE WITH CALIFORNIA CODE OF REGULATIONS, TITLE 8.
5. EXCAVATION, BACKFILL AND COMPACTION SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.
6. FULL TIME SOILS TECHNICIAN MUST BE ON-SITE DURING BACKFILLING AND COMPACTION AS DETERMINED BY EVMWD.

REVISION	BY	APPR	DATE



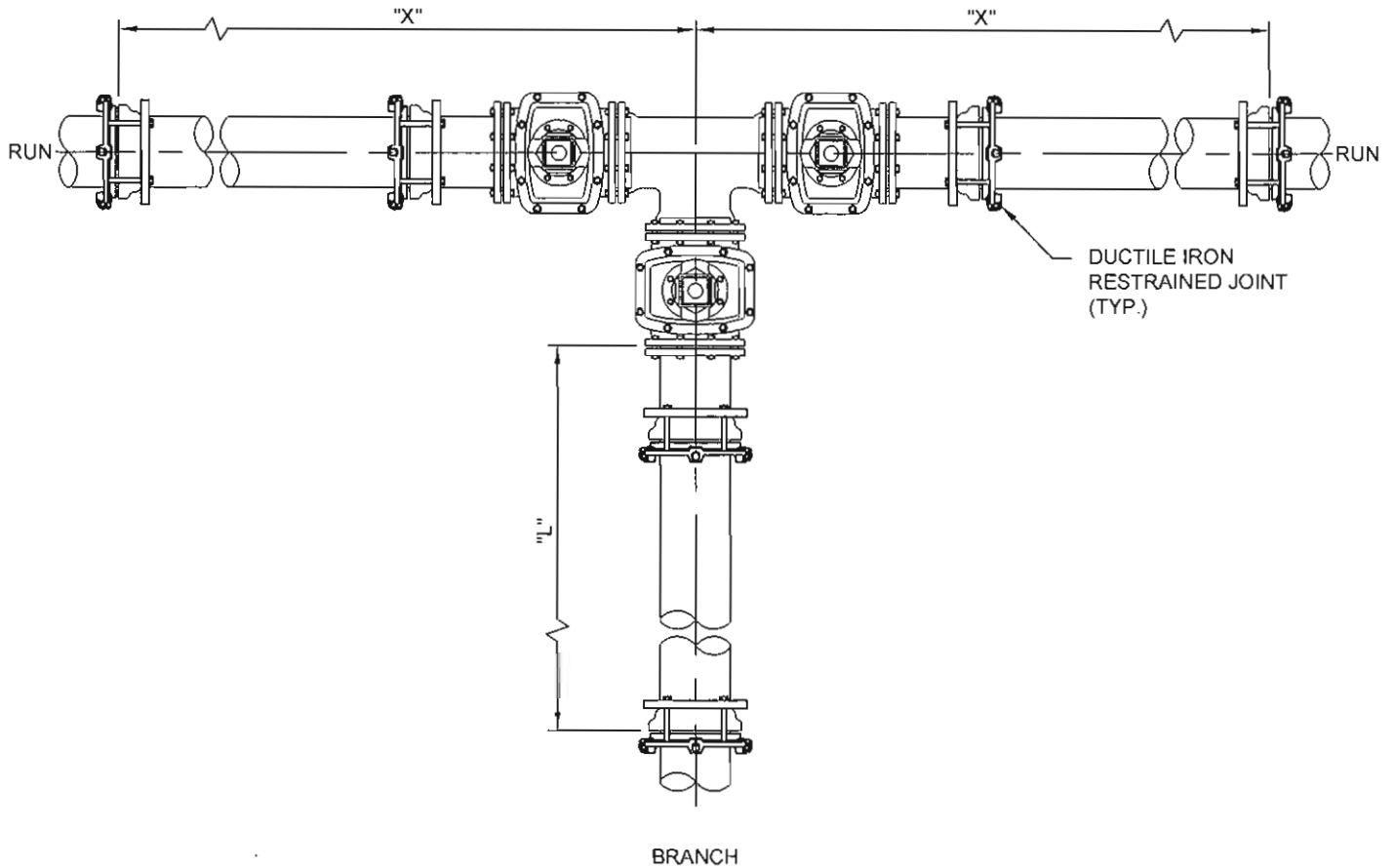
*Paul S. Carver* 11/7/12  
 Paul S. Carver R.C.E. 31516 DATE

**WATER PIPE BEDDING AND  
 TRENCH BACKFILL**

STD. DWG. NO.

**W-3**





		PIPE SIZE (RUN)							
		4	6	8	12	16	18	20	24
PIPE SIZE (BRANCH)	4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	6		N/A	N/A	N/A	N/A	N/A	N/A	N/A
	8			191	169	169	169	169	169
	12				240	240	240	240	240
	16					309	309	309	309
	18						342	342	342
	20							374	374
	24								438
			RESTRAINED LENGTHS "L" IN FEET						

## TEE

**NOTES:**

- "X" SHALL BE DETERMINED BY LENGTH VALUES GIVEN IN THE DEAD END/EACH SIDE OF VALVE CHART OR BY DIPRA DESIGN METHOD IF CONDITIONS DIFFER FROM ASSUMPTIONS IN NOTE 3.

REVISION	BY	APPR	DATE

Elsinore Valley Municipal Water District

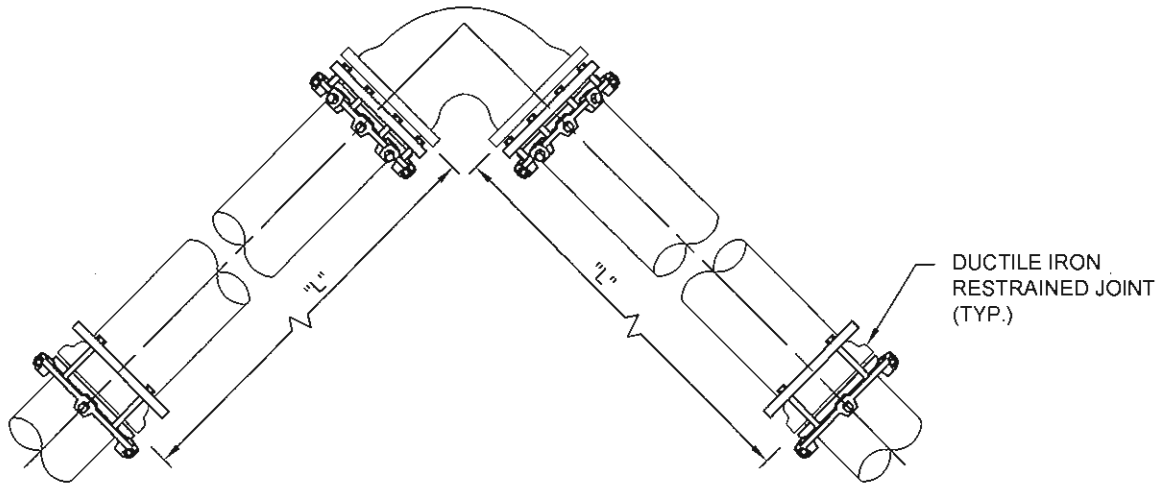
*Paul S. Carver* 11/2/12

Paul S. Carver R.C.E. 31518 DATE

## STANDARD RESTRAINT FOR DUCTILE IRON AND PVC PIPE

STD. DWG. NO.

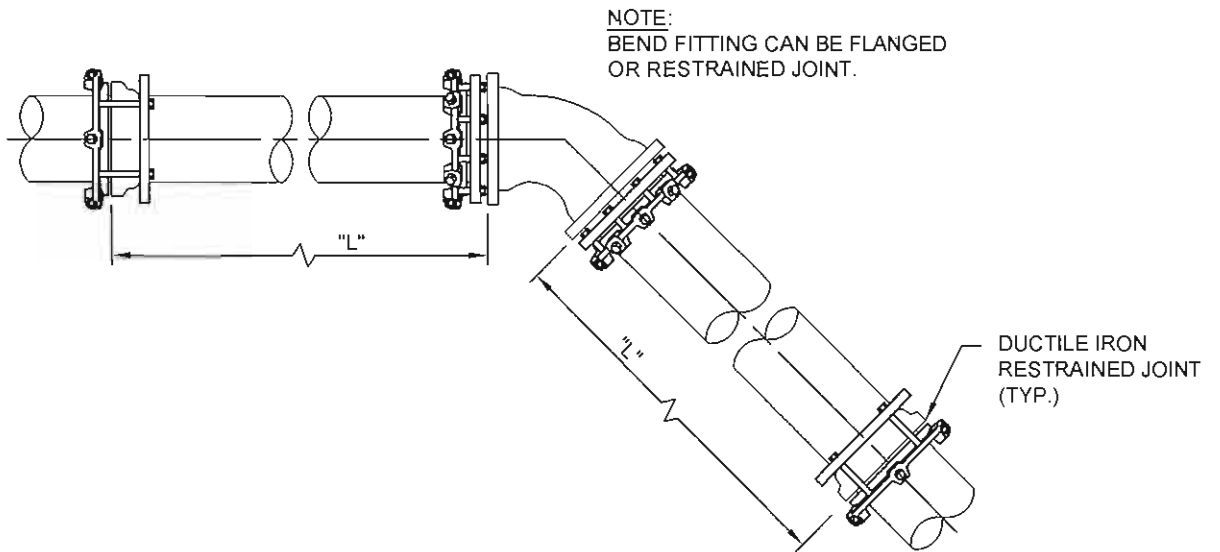
**W-4a**



PIPE SIZE		4	6	8	12	16	18	20	24
BEND ANGLE	11.25°	3	5	6	7	9	10	11	13
	22.5°	7	9	12	15	19	21	23	26
	45°	14	19	25	31	39	43	47	54
	90°	33	46	59	74	94	104	113	131

RESTRAINED LENGTHS "L" IN FEET (SEE NOTE 6 FOR LIMITS ON USE)

## HORIZONTAL BEND



PIPE SIZE		4	6	8	12	16	18	20	24
BEND ANGLE	11.25°	10	15	19	24	30	34	37	43
	22.5°	21	29	38	48	61	68	74	87
	45°	43	61	79	100	128	142	155	181

RESTRAINED LENGTHS "L" IN FEET (SEE NOTE 6 FOR LIMITS ON USE)

## VERTICAL BEND

REVISION	BY	APPR	DATE



*Paul S. Carver* 11/7/12  
 Paul S. Carver R.C.E. 31516 DATE

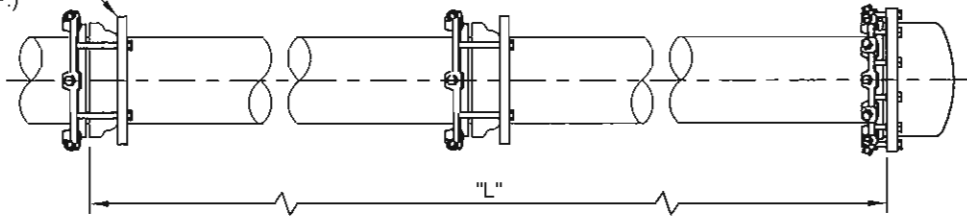
STANDARD RESTRAINT FOR  
 DUCTILE IRON AND PVC PIPE

STD. DWG. NO.

W-4b

2 OF 3

DUCTILE IRON  
RESTRAINED JOINT  
(TYP.)



PIPE SIZE

4	6	8	12	16	18	20	24
104	148	191	240	309	342	374	438

RESTRAINED LENGTHS "L" IN FEET (SEE NOTE 6 FOR LIMITS ON USE)

## DEAD END/EACH SIDE OF VALVE

GENERAL NOTES FOR RESTRAINED JOINTS:

1. ALL JOINTS WITHIN LENGTH "L" SHALL BE RESTRAINED.
2. DEPTH OF COVER - EIGHT INCHES IN DIAMETER AND LESS 3.5 FEET MINIMUM, TWELVE INCHES IN DIAMETER AND GREATER 4.0 FEET MINIMUM.
3. ASSUMPTIONS FOR DETERMINING LENGTHS SHOWN:
  - TEST PRESSURE: 225 PSI
  - TYPE 4 LAYING CONDITION
  - A SAFETY FACTOR OF 2
  - SAND/SILT SOIL CONDITION
  - POLYETHYLENE WRAP
4. LENGTH ON EACH SIDE OF RUN FOR A TEE SHALL BE CALCULATED AS DEAD END.
5. LENGTH CALCULATED USING DIPRA RESTRAINED JOINT PROGRAM.
6. IF ACTUAL CONDITIONS DIFFER FROM THOSE LISTED ABOVE OR THE REQUIRED RESTRAINED LENGTH CANNOT BE MET, THE RESTRAINED LENGTH SHALL BE DETERMINED BY THE DESIGN ENGINEER AND CONCURRED WITH THE DISTRICT ENGINEER.

REVISION	BY	APPR	DATE

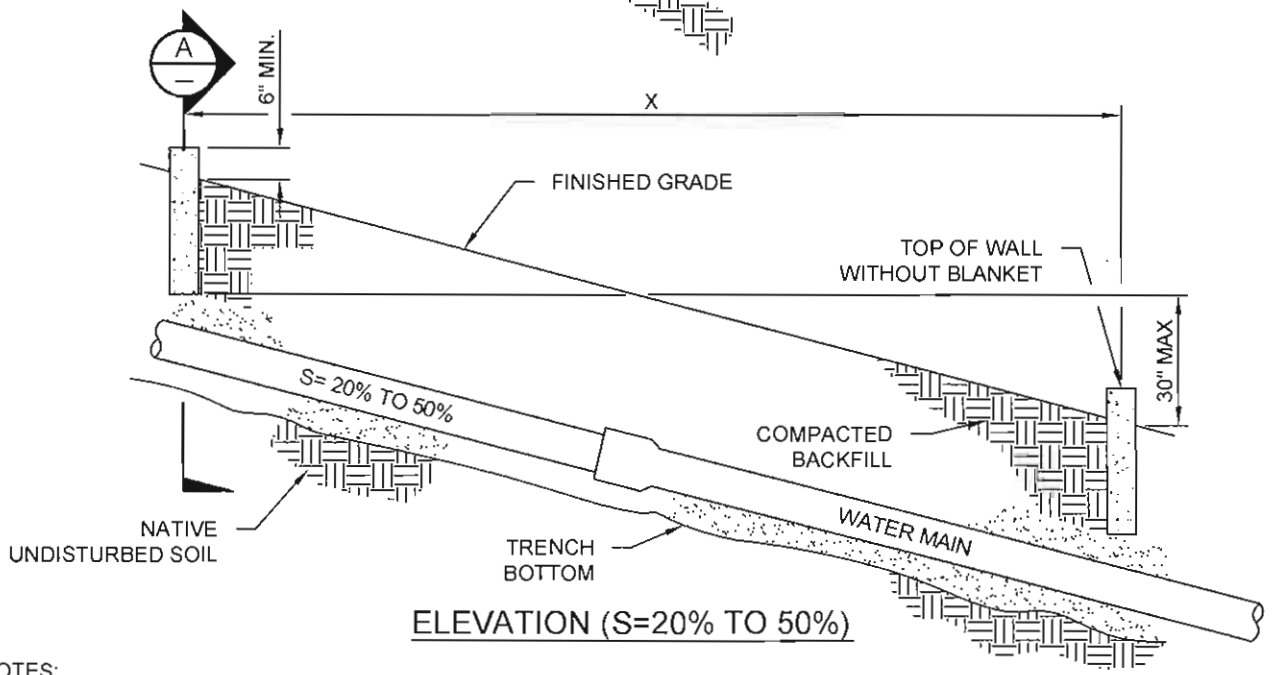
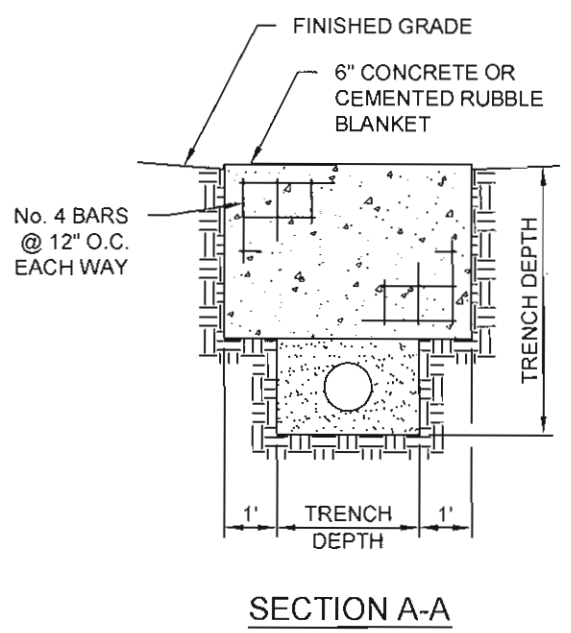
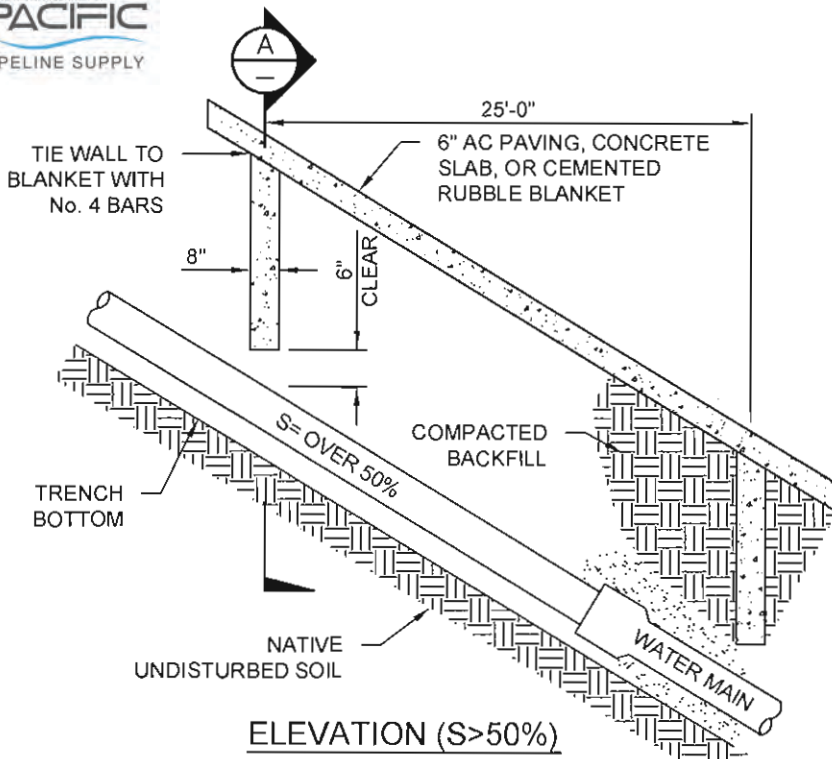


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## STANDARD RESTRAINT FOR DUCTILE IRON AND PVC PIPE

STD. DWG. NO.


**W-4c**



**NOTES:**

1. PRIOR CONCURRENCE OF THE DISTRICT ENGINEER REQUIRED FOR USE, SUBMITTALS WILL BE REQUIRED.
2. WALL SHALL BE REINFORCED CONCRETE OR 8"x8"x16" CONCRETE BLOCK, REINFORCED AND ALL CORES FILLED WITH GROUT, SEE SPECIFICATIONS (ALTERNATE 1).
3. ALL SPACES BETWEEN BLOCK WALLS AND TRENCH CUTOUT SHALL BE FILLED WITH MORTAR. CONCRETE WALLS SHALL BE PLACED AGAINST FIRM MATERIAL.
4. FOR GRADES OVER 50%, SLOPE PROTECTION SHALL ALSO INCLUDE AC PAVING, CONCRETE SLAB OR GUNITE BLANKET PLACED OVER THE PIPELINE ALIGNMENT.
5. 4" GUNITE BLANKET WITH 6" SQUARE x 10 GAGE WIRE FABRIC AT THE ENGINEERS DISCRETION.
6. CONCRETE SHALL BE 480-B-2500.

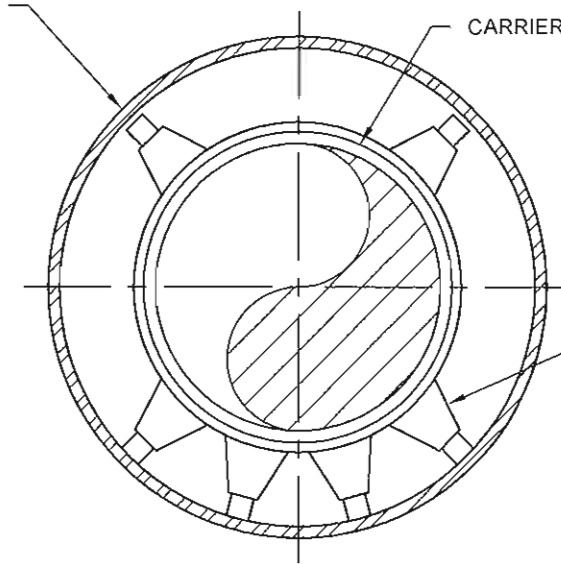
REVISION	BY	APPR	DATE

  
 Elginore Valley Municipal Water District  
*Paul S. Carver* 11/7/12  
 Paul S. Carver R.C.E. 31518 DATE

**SLOPE ANCHOR DETAILS**

STD. DWG. NO.  
**W-5**

STEEL PIPE WITH MINIMUM PLATE THICKNESS AND MINIMUM INSIDE DIAMETER PER SCHEDULE HEREON



CARRIER PIPE CENTERED IN CASING

1. FOR PVC CARRIER PIPE, USE POLYETHYLENE CASING INSULATORS WITH POLYETHYLENE SKIDS.
2. FOR DUCTILE IRON CARRIER PIPE, USE STAINLESS STEEL BAND SPACERS AND INSULATORS WITH GLASS FILLED POLYMER PLASTIC RUNNERS.
3. ALL CASING INSULATORS SHALL BE DESIGNED BY THE MANUFACTURER FOR APPLICATION GIVEN THE PARTICULAR CARRIER PIPE O.D. AND CASING PIPE I.D.
4. ALL BOLTS AND BANDS SHALL BE TYPE 304 STAINLESS STEEL.

CASING SCHEDULE

NOMINAL PIPE SIZE	MINIMUM CASING SIZE	MIN. WALL
8"	16" I.D.	1/4"
12"	20" I.D.	5/16"
16"	30" I.D.	3/8"
18"	32" I.D.	3/8"
20"	36" I.D.	3/8"
24"	42" I.D.	1/2"
30"	48" I.D.	1/2"
36"	56" I.D.	5/8"
42"	60" I.D.	3/4"

NOTES:

1. SPACING BETWEEN THE CASING INSULATORS SHALL BE PER THE MANUFACTURERS RECOMMENDATIONS EXCEPT THAT THERE SHALL BE AT LEAST 4 CASING INSULATORS PER PIPE SECTION, ONE 12" FROM EACH JOINT AND ONE CENTERED. ADDITIONALLY, ONE INSULATOR SHALL BE INSTALLED 12" FROM EACH END OF THE CASING.
2. BOTH ENDS OF THE CASING BETWEEN THE CASING AND CARRIER PIPE MUST BE SEALED WATERTIGHT USING AN END SEAL, SELECTED FROM ACCEPTED MATERIALS GUIDELINE. BANDS SHALL BE TYPE 304 STAINLESS STEEL.
3. ALL STEEL CASING PIPE JOINTS SHALL BE WELDED FULL CIRCUMFERENCE.
4. MATERIALS SHALL BE SELECTED FROM THE ACCEPTED MATERIALS GUIDELINE.
5. ABOVE CASING THICKNESS ARE FOR OPEN TRENCH ONLY. FOR JACKED CASING SEE STANDARD SPECIFICATION. 15130.
6. HDPE CASING MAY BE USED IF MEETS ADEQUATE STRENGTH FOR GEOTECHNICAL CONDITIONS AND WITH WRITTEN APPROVAL FROM THE DIRECTOR OF ENGINEERING.

REVISION	BY	APPR	DATE

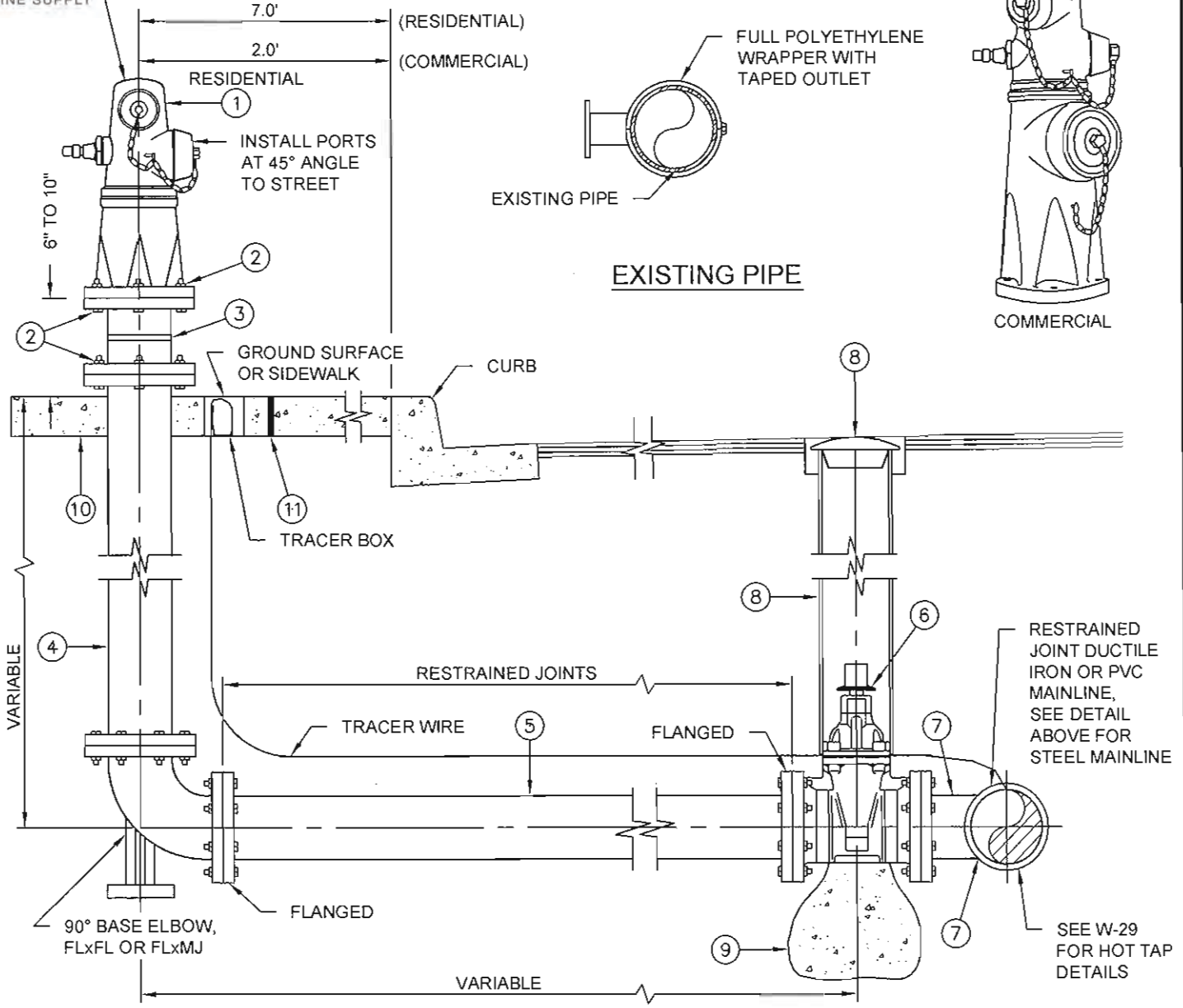
**EVMSD**  
 Elsinore Valley Municipal Water District  
*Paul S. Carver* 11/7/12  
 Paul S. Carver R.C.E. 31518 DATE

STEEL CASING FOR  
 WATER MAINS

STD. DWG. NO.

W-6

MAINTAIN 3' CLEARANCE  
 ALL AROUND



NOTE: RESTRAINED JOINTS ARE REQUIRED FOR HYDRANT RUNS.

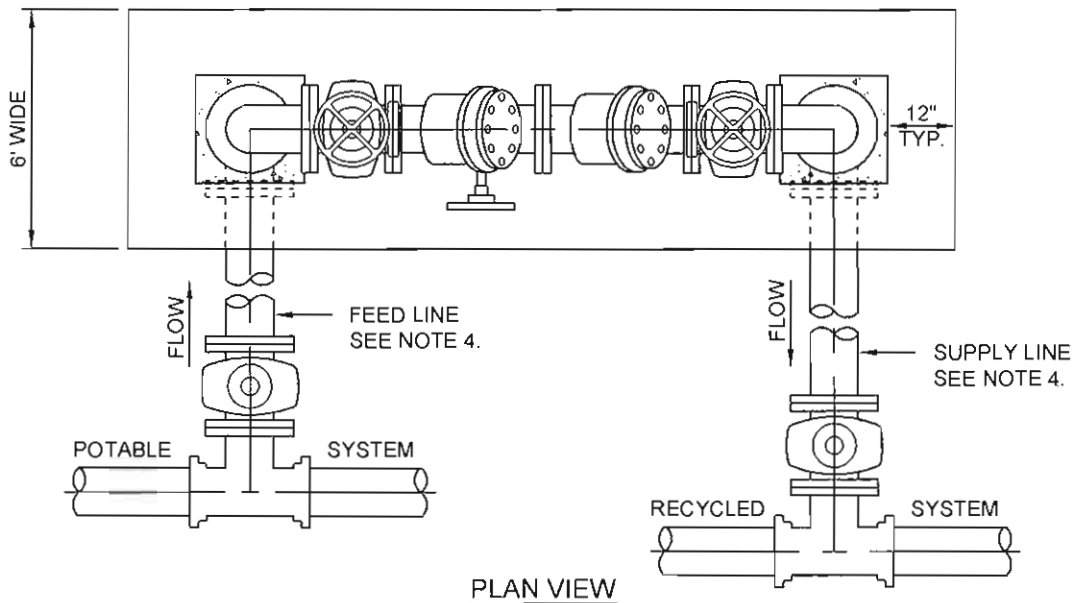
ITEM	EACH	DESCRIPTION	SPEC.	REMARKS
①	1	6" FIRE HYDRANT	2 OUTLET RES., 3 OUTLET COMMERCIAL	6 HOLE FL, SEE PAINT SPECS.
②	AS REQ'D	BOLTS WITH NUTS ON TOP OF FLANGE	5/8"x3" HEX HEAD ZINC PLATED W/ SOLID BODY	DAMAGE 2 OPPOSITE FACING THREADED ENDS TO ENSURE INABILITY OF REMOVAL
③	1	GROOVED BREAK-OFF SPOOL	FLxFL, 6 HOLE, 6" OR 8"	SPOOL ABOVE SURFACE
④	1	FIRE HYDRANT BURY	6 HOLE FLxFL, FLxMJ	VARIABLE HEIGHT IF 8" D.I.
⑤	1	6" OR 8" HYDRANT RUN PIPE	DUCTILE IRON OR PVC C900	FLxFL OR FLxPE, CANNOT CROSS STREET Q
⑥	1	6" OR 8" RESILIENT WEDGE GATE VALVE	FLxFL	INCLUDES VALVE SUPPORT BLOCK
⑦	1	TEE W/ 6" OR 8" OUTLET	FL OUTLET	CUT IN TEE SIMILAR TO W-34 IF EXISTING MAIN
⑧	1	8" VALVE WELL AND CAP	STD. DWG. NO. W-13	
⑨	-	VALVE SUPPORT BLOCK	STD. DWG. NO. W-15	
⑩	1	4'x4'x4" THK CONCRETE SPLASH PAD		
⑪	1	COLD JOINT STRIP		

REVISION	BY	APPR	DATE

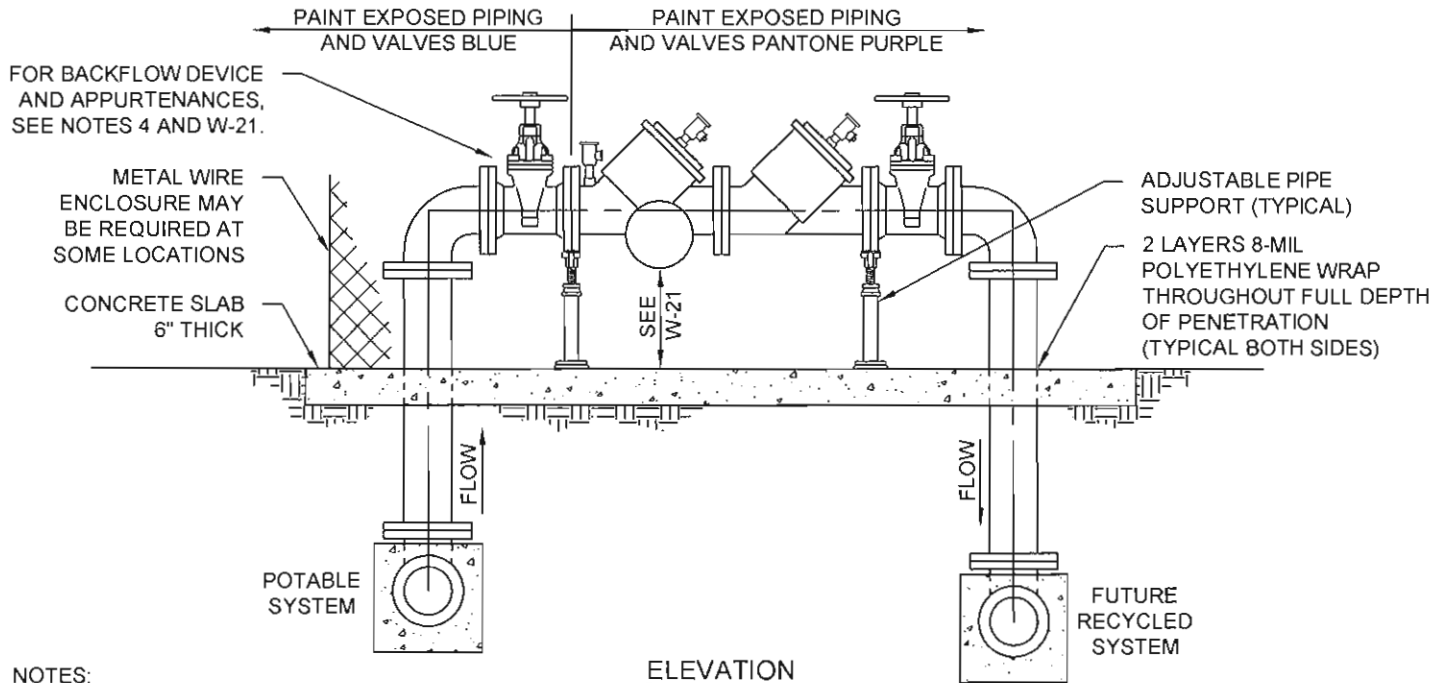
**EVMS**  
 Elsinore Valley Municipal Water District  
*Paul S. Carver*  
 Paul S. Carver R.C.E. 31516 DATE

FIRE HYDRANT ASSEMBLY

STD. DWG. NO.  
**W-7**



PLAN VIEW



ELEVATION

**NOTES:**

1. REFER TO NOTES ON STANDARD DRAWING W-21a.
2. REFER TO STANDARD DRAWING W-21b FOR IDENTIFICATION OF MATERIALS AND OPENINGS.
3. INSTALL WARNING/IDENTIFICATION TAPE AS SHOWN ON W-21a.
4. THE FEED PIPE DIAMETER SHALL BE A MINIMUM (6"), OR LARGER AS REQUIRED, TO MATCH BACKFLOW PREVENTER. THE SUPPLY LINE MAY BE REDUCED FOR INSTALLATIONS REQUIRING PIPE OF LESS THAN 6" IN DIAMETER.
5. PAINTING SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS, COLOR SHALL BE PANTONE PURPLE.
6. TESTING SHALL BE CONDUCTED AS CALLED FOR IN THE STANDARD SPECIFICATIONS PRIOR TO ACCEPTANCE BY THE DISTRICT.
7. MATERIALS SHALL BE SELECTED FROM THE ACCEPTED MATERIALS GUIDELINE.
8. IDENTIFICATION PLATE AND TEST VALVES ON THE BACKFLOW ASSEMBLY SHALL NOT BE PAINTED.

REVISION	BY	APPR	DATE

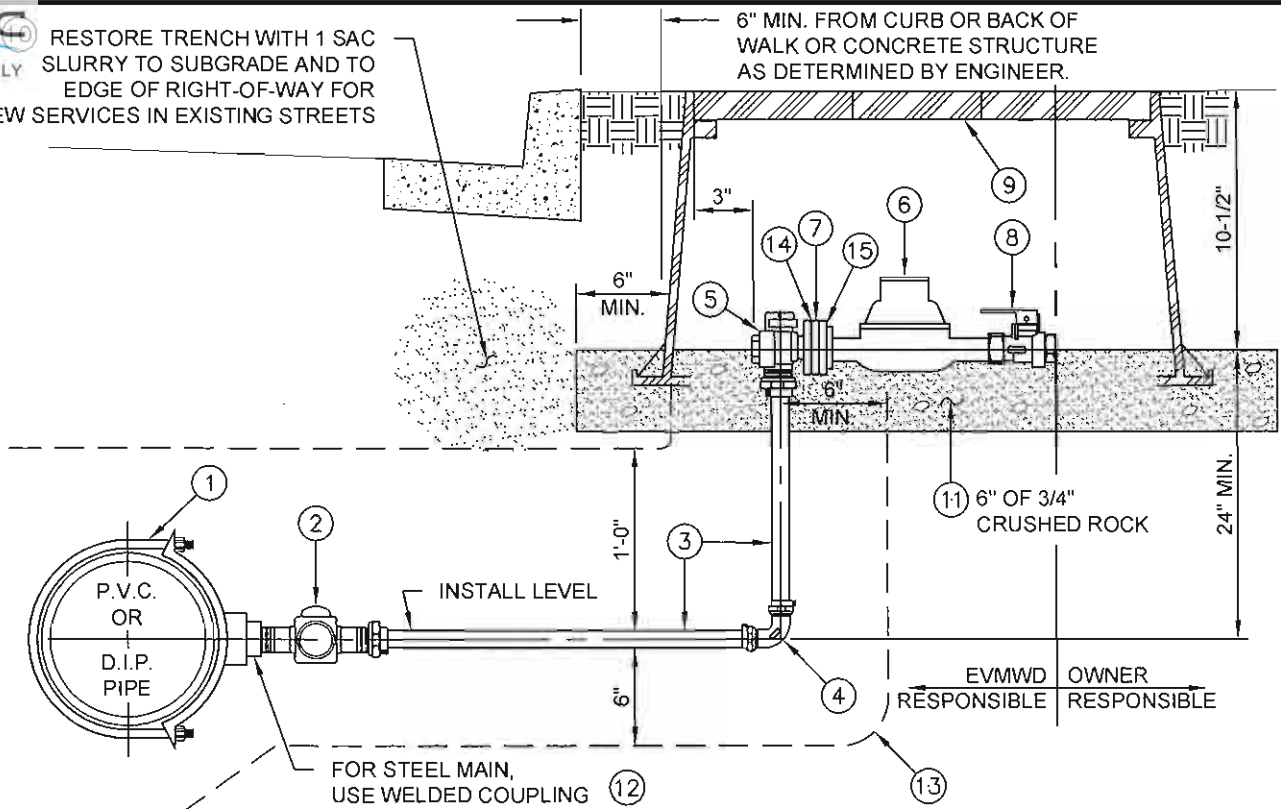
**EVMS**  
 Elsinore Valley Municipal Water District  
*Paul S. Carver* 11/7/12  
 Paul S. Carver R.C.E. 31518 DATE

TEMPORARY POTABLE WATER  
 TO RECYCLED WATER  
 INTER-CONNECTION

STD. DWG. NO.

W-8

RESTORE TRENCH WITH 1 SAC  
 SLURRY TO SUBGRADE AND TO  
 EDGE OF RIGHT-OF-WAY FOR  
 NEW SERVICES IN EXISTING STREETS



**NOTES:**

1. RANGE SADDLES NOT ALLOWED.
2. FOR RESIDENTIAL FIRE SPRINKLER SERVICE, PIPE AND MATERIAL SHOULD BE NSF61 APPROVED.
3. IT IS RECOMMENDED THAT THE HOME BUILDER INSTALL A 1.5" PIPE FROM THE METER TO THE LOCATION WHERE THE PIPE SPLITS TO GO INTO THE CEILING FOR FIRE SPRINKLERS AND TO THE APPLIANCES AND FIXTURES.
4. NO WATER METER BOXES SHALL BE INSTALLED IN DRIVEWAYS OR SIDEWALKS. METER BOXES SHALL BE SET AT HIGH GRADE TO ELIMINATE WATER RUNOFF. INSTALL REDUCED PRESSURE PRINCIPLE OR BACK FLOW DEVICE AFTER IRRIGATION METER. INSTALL PRESSURE REDUCING VALVES IF THE PRESSURE IS OVER 80 PSI. A PRESSURE REGULATOR SHALL BE INSTALLED PRIOR TO ENTERING THE HOUSE/BUILDING PLUMBING.

\* SEE ACCEPTED MATERIALS GUIDELINE

ITEM	EACH	DESCRIPTION	SPEC.	REMARKS
①	1	SERVICE SADDLE	STRAP TO BE S.S.	SEE ACCEPTED MATERIALS GUIDELINE
②	1	BRONZE CORP. STOP	1.5" I.P. X C.T.S. COMPRESSION	
③	2	COPPER TUBING	1.5" TYPE K, SOFT	TWO PIECES ONLY, NO BENDS
④	1	ELBOW	1.5" C.T.S. COMPRESSION	
⑤	1	ANGLE METER STOP (BALL VALVE)	1.5" C.T.S. COMPRESSION x METER FL, LOCK WING W/ 1/8" THK CLOTH INSERTED DROP IN GASKET	PAINT ANGLE STOP PURPLE FOR RECYCLED WATER SERVICE ONLY
⑥	1	WATER METER	1" OR 3/4"	SUPPLIED & INSTALLED BY DISTRICT
⑦	1	BRONZE WATER METER FLANGE	1.5" F.I.P. THREADS WITH 1/8" THK CLOTH	INSERTED DROP IN GASKET
⑧	1	BRONZE BALL VALVE 1" I.P. X C.T.S. COMPRESSION		SUPPLIED BY DEVELOPER & INSTALLED BY DISTRICT FOR RESIDENTIAL. SUPPLIED & INSTALLED BY DISTRICT FOR NON-RESIDENTIAL.
⑨	1	WATER METER BOX	COLOR: GREEN, SEE W-11	PAD FOR METER AND BOX
⑩	1	SLURRY BACKFILL	1 SAC	FOR NEW SERVICES IN EXISTING STREETS
⑪	1	WATER METER & BOX PAD	56" x 43" x 6" CRUSHED ROCK	PAD FOR METER AND BOX
⑫	1	STD. BLACK PIPE COUPLING	1.5" I.P. THREADED, WELDED ON	COAT COUPLING W/ SAME MATERIAL AS PIPE
⑬	1	TRENCH WITH SAND ENVELOPE	IMPORTED WITH SE > 30	12" MIN. & 24" MAX. TRENCH WIDTH
⑭	1	DROP IN GASKET	1/8" THK CLOTH INSERTED GASKET	AT METER FLANGE, SUPPLIED & FURNISHED BY DISTRICT
⑮	1	1.5" X 1" ADAPTER	1.5" x 1" F.I.P. x F.I.P.	SUPPLIED & INSTALLED BY DISTRICT

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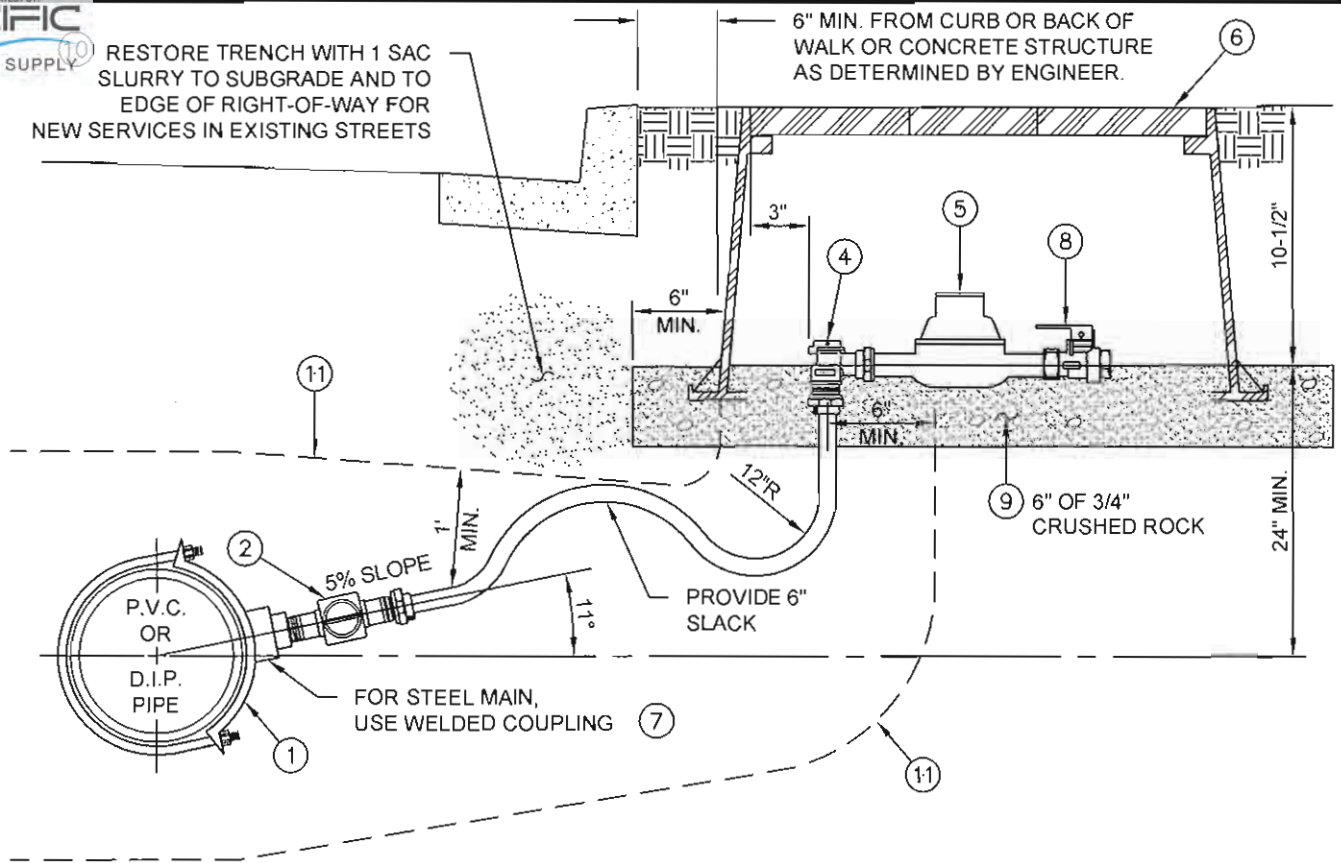
**EVMWD**  
 Elsinore Valley Municipal Water District  
*Paul S. Carver* 11/17/12  
 Paul S. Carver R.C.E. 31516 DATE

**1 1/2" WATER SERVICE  
 CONNECTION FOR  
 1" OR 3/4" METER**

STD. DWG. NO.  
**W-9a**  
 1 OF 3



RESTORE TRENCH WITH 1 SAC SLURRY TO SUBGRADE AND TO EDGE OF RIGHT-OF-WAY FOR NEW SERVICES IN EXISTING STREETS



**NOTES:**

1. RANGE SADDLES NOT ALLOWED.
2. FOR RESIDENTIAL FIRE SPRINKLER SERVICE, PIPE AND MATERIAL SHOULD BE NSF61 APPROVED.
3. IT IS RECOMMENDED THAT THE HOME BUILDER INSTALL A 1.5" PIPE FROM THE METER TO THE LOCATION WHERE THE PIPE SPLITS TO GO INTO THE CEILING FOR FIRE SPRINKLERS AND TO THE APPLIANCES AND FIXTURES.
4. NO WATER METER BOXES SHALL BE INSTALLED IN DRIVEWAYS OR SIDEWALKS. METER BOXES SHALL BE SET AT HIGH GRADE TO ELIMINATE WATER RUNOFF. INSTALL REDUCED PRESSURE PRINCIPLE OR BACK FLOW DEVICE AFTER IRRIGATION METER. INSTALL PRESSURE REDUCING VALVES IF THE PRESSURE IS OVER 80 PSI. A PRESSURE REGULATOR SHALL BE INSTALLED PRIOR TO ENTERING THE HOUSE/BUILDING PLUMBING.

\* SEE ACCEPTED MATERIALS GUIDELINE

ITEM	EACH	DESCRIPTION	SPEC.	REMARKS
①	1	SERVICE SADDLE	STRAP TO BE S.S.	SEE ACCEPTED MATERIALS GUIDELINE
②	1	1" BRONZE CORP. STOP	I.P. X C.T.S. COMPRESSION *	
③	1	COPPER TUBING	1" TYPE K, SOFT	ONE PIECE ONLY, NO SPLICES
④	1	1" ANGLE METER STOP (BALL VALVE)	1" C.T.S. COMPRESSION x METER <del>FL</del> , LOCK WING W/ 1/8" THK CLOTH INSERTED DROP IN GASKET	PAINT ANGLE STOP PURPLE FOR RECYCLED WATER SERVICE ONLY
⑤	1	WATER METER	1" OR 3/4"	SUPPLIED & INSTALLED BY DISTRICT
⑥	1	WATER METER BOX	COLOR: GREEN, SEE W-11 *	SUPPLIED & INSTALLED BY DEVELOPER
⑦	1	STD. BLACK PIPE COUPLING	1" I.P. THREADED, WELDED ON	COAT COUPLING W/ SAME MATERIAL AS PIPE
⑧	1	BRONZE BALL VALVE 1" I.P. X C.T.S. COMPRESSION		SUPPLIED BY DEVELOPER & INSTALLED BY DISTRICT FOR RESIDENTIAL. SUPPLIED & INSTALLED BY DISTRICT FOR NON-RESIDENTIAL.
⑨	1	WATER METER & BOX PAD	42" x 35" x 6" 3/4" CRUSHED ROCK	PAD FOR METER AND BOX
⑩	1	SLURRY BACKFILL	1 SAC	FOR NEW SERVICES IN EXISTING STREETS
⑪	1	TRENCH WITH SAND ENVELOPE	IMPORTED WITH SE > 30	12" MIN. & 24" MAX. TRENCH WIDTH

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 Elsinore Valley Municipal Water District  
*Paul S. Carver* 11/7/12  
 Paul S. Carver R.C.E. 31516 DATE

**1" WATER SERVICE CONNECTION FOR 1" OR 3/4" METER**

STD. DWG. NO.  
**W-9b**  
 2 OF 3


# FIRE SPRINKLER PRESSURE CALCULATION

		VERTICAL HOUSE LINE FOR FIRE SPRINKLER								
			20'	FLOW RATE <sup>5</sup> 31 PIPE ROUGHNESS 130 VERTICAL RISE IN SERVICE LINE TO METER 3'						
SERVICE LINE LENGTH		DISTANCE FROM METER TO FRONT OF HOUSE	PIPE LENGTH IN HOUSE	PRESSURE LOSS		WATER PRESSURE IN STREET MAIN				
30'		20'	30'	AT END OF METER <sup>1,2</sup>	ON PROPERTY <sup>1,3</sup>	45	50	60	70	80
PIPE SIZE	METER SIZE	HOUSE LINE PIPE SIZE	ATTIC PIPE SIZE	PSI	PSI	FIRE SPRINKLER PRESSURE BASED ON STREET PRESSURE ABOVE. (PSI)				
INCHES	INCHES	INCHES	INCHES							
1	¾"	1	1	19.9	32.8	<del>7.8</del>	<del>2.8</del>	<del>7.9</del>	17.2	27.2
		1½"	1		21.9	<del>3.2</del>	<del>8.2</del>	18.2	28.2	38.2
		1½"	1½"		12.0	13.1	18.1	28.1	38.1	48.1
1½"	¾"	1	1	8.2	32.8	<del>3.0</del>	<del>8.0</del>	18.9	28.9	38.9
		1½"	1		21.9	14.9	19.9	29.9	39.9	49.9
		1½"	1½"		12.0	24.8	29.8	39.8	49.8	59.8
1½"	1"	1	1	5.2	32.8	<del>7.0</del>	12.0	22.0	32.0	42.0
		1½"	1		21.9	17.9	22.9	32.9	42.9	52.9
		1½"	1½"		12.0	27.8	32.8	42.8	52.8	62.8

**NOTES:**

1. EQUATION IS THE HAZEN-WILLIAMS SOURCE: CIVIL ENGINEERING REFERENCE MANUAL (EQUATION 17.31)
2. THE EQUIVALENT LENGTH FOR ALL FITTINGS UP TO THE METER.
  - A) 1" SIZE CORP STOP AT 6.67 FEET AND CURB STOP AT 3.85 FEET TOTALING 15.9 FEET.
  - B) 1½" SIZE CORP STOP AT 7.7 FEET, 90° BEND AT 3.77 FEET, AND CURB STOP AT 4.43 FEET TOTALING 15.9 FEET.
  - C) ¾" METER HAS 14 FEET HEAD LOSS (6 PSI) AND A 1" METER HAS 7 FEET HEAD LOSS (3 PSI).
3. THE EQUIVALENT LENGTH FOR ALL FITTINGS ON PROPERTY IS ESTIMATED AT 20 FEET.
4. THE MINIMUM PRESSURE REQUIRED FOR FIRE SPRINKLERS IS 7 PSI. 9 PSI IS RECOMMENDED AS A SAFETY FACTOR.
5. THE RECOMMENDED FLOW RATE FOR MOST HOMES IS TWO SPRINKLERS FLOWING AT 13 GPM AND 5 GPM FOR DOMESTIC WATER EQUATING TO 31 GPM.

REVISION	BY	APPR	DATE



Elmore Valley Municipal Water District

*Paul S. Carver* 11/7/12

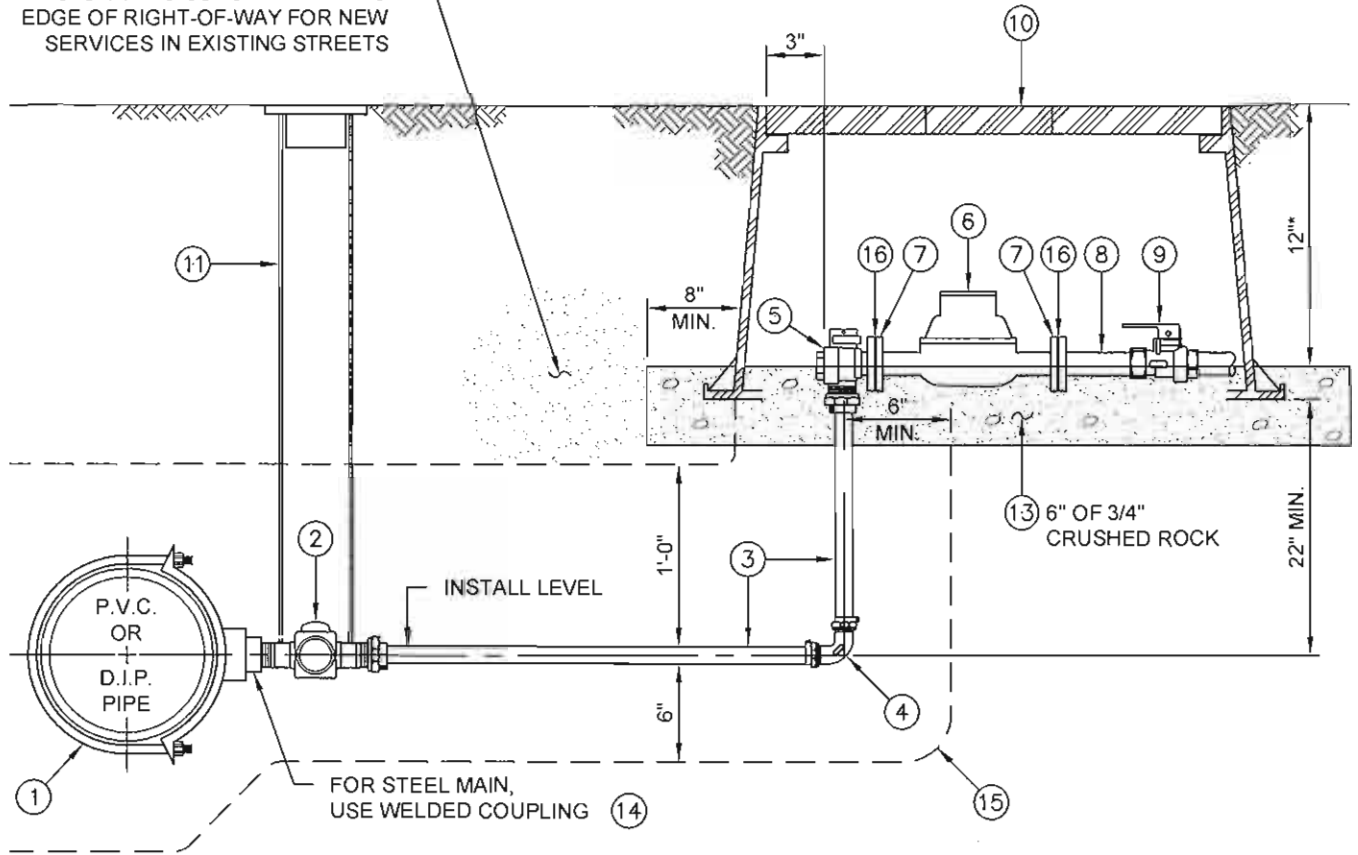
Paul S. Carver R.C.E. 31516 DATE

## WATER SERVICE LINE SIZE CALCULATIONS

STD. DWG. NO.  
**W-9c**  
3 OF 3

\* COMPOUND METER  
 REQUIRES 16"

⑫ RESTORE TRENCH WITH 1 SAC  
 SLURRY TO SUBGRADE AND TO  
 EDGE OF RIGHT-OF-WAY FOR NEW  
 SERVICES IN EXISTING STREETS



ITEM	EACH	DESCRIPTION	SPEC.	REMARKS
①	1	C-90 BRONZE SERVICE SADDLE	STRAP TO BE S.S.	SEE ACCEPTED MATERIALS GUIDELINE
②	1	BRONZE CORP. STOP	2" I.P. X C.T.S. COMPRESSION	
③	2	COPPER TUBING	2" TYPE K, SOFT	TWO PIECES ONLY, NO BENDS
④	1	ELBOW	2" C.T.S. COMPRESSION	
⑤	1	ANGLE METER STOP (BALL VALVE)	2" C.T.S. COMPRESSION X METER FL, LOCK WING W/ 1/8" THK CLOTH INSERTED DROP IN GASKET	PAINT ANGLE STOP PURPLE FOR RECYCLED WATER SERVICE ONLY
⑥	1	WATER METER	2" FL SUPPLIED & FURNISHED BY DISTRICT	
⑦	1	BRONZE WATER METER FLANGE	2" F.I.P. THREADS WITH 1/8" THK CLOTH INSERTED DROP IN GASKET	
⑧	1	BRASS NIPPLE	2"x4" BRASS NIPPLE, M.I.P. X FL THREADS	SUPPLIED & FURNISHED BY DISTRICT
⑨	1	BRONZE BALL VALVE	2" C.T.S. COMPRESSION X I.P.	SUPPLIED & FURNISHED BY DISTRICT
⑩	1	WATER METER BOX	COLOR: GREEN, SEE W-11	
⑪	1	6" VALVE WELL	W-13 MODIFIED TO 6" DIA.	SIMILAR TO 8" ON STD. DWG. W-13
⑫	1	SLURRY BACKFILL	1 SAC	FOR NEW SERVICES IN EXISTING STREETS
⑬	1	WATER METER & BOX PAD	56" x 43" x 6" CRUSHED ROCK	PAD FOR METER AND BOX
⑭	1	STD. BLACK PIPE COUPLING	2" I.P. THREADED, WELDED ON	COAT COUPLING W/ SAME MATERIAL AS PIPE
⑮	1	TRENCH WITH SAND ENVELOPE	IMPORTED WITH SE > 30	12" MIN. & 24" MAX. TRENCH WIDTH
⑯	2	DROP IN GASKET	1/8" THK CLOTH INSERTED GASKET	AT BOTH METER FLANGES, SUPPLIED & FURNISHED BY DISTRICT

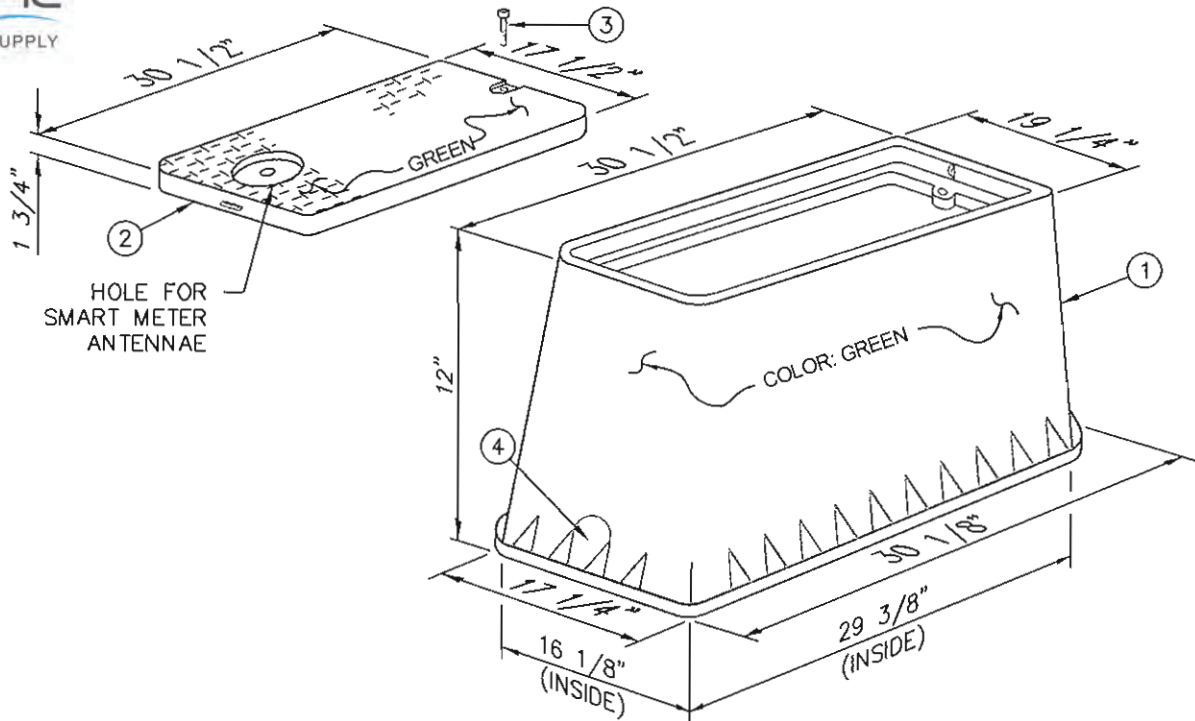
REVISION	BY	APPR	DATE

**EVMSD**  
 Elsinore Valley Municipal Water District  
*Paul S. Carver* 11/7/12  
 Paul S. Carver R.C.E. 31518 DATE

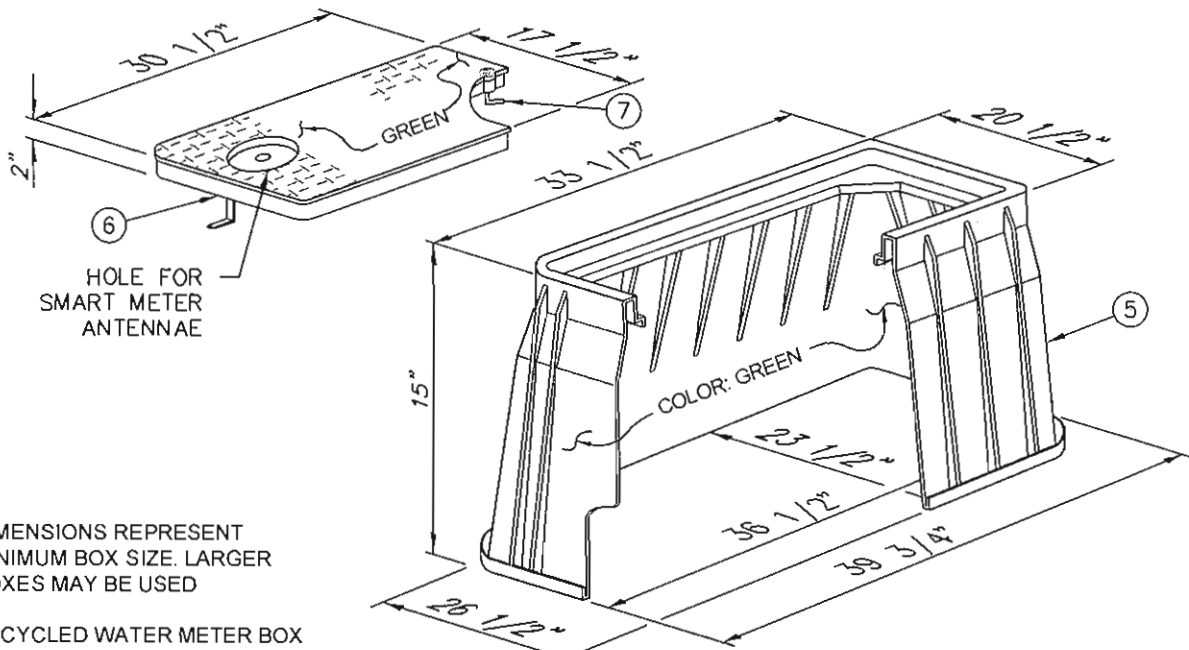
2" WATER  
 SERVICE CONNECTION

STD. DWG. NO.

W-10



**3/4" TO 1" METERS**




**2" METERS**

**NOTE:**

1. DIMENSIONS REPRESENT MINIMUM BOX SIZE. LARGER BOXES MAY BE USED
2. RECYCLED WATER METER BOX AND LID COLOR SHALL BE PANTONE PURPLE.

ITEM	DESCRIPTION
①	METER BOX - (METER READING BOLT DOWN)
②	METER BOX LID - (BOLT DOWN)
③	3/8" x 2 1/2" BOLT
④	3" x 4" KNOCK OUTS (OPTIONAL - 2 PLACES)
⑤	METER BOX - (METER READING CAPTIVE L-BOLT DOWN)
⑥	METER BOX LID - (CAPTIVE L-BOLT LOCK)
⑦	3/8" L-BOLT LOCK (CAPTIVE)

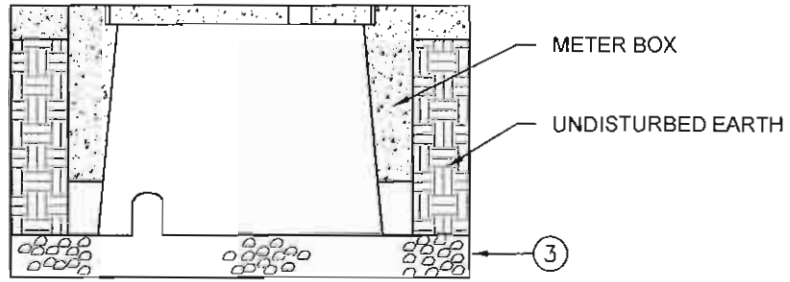
REVISION	BY	APPR	DATE

  
 Elsinore Valley Municipal Water District  
*Paul S. Carver* 11/7/12  
 Paul S. Carver R.C.E. 31518 DATE

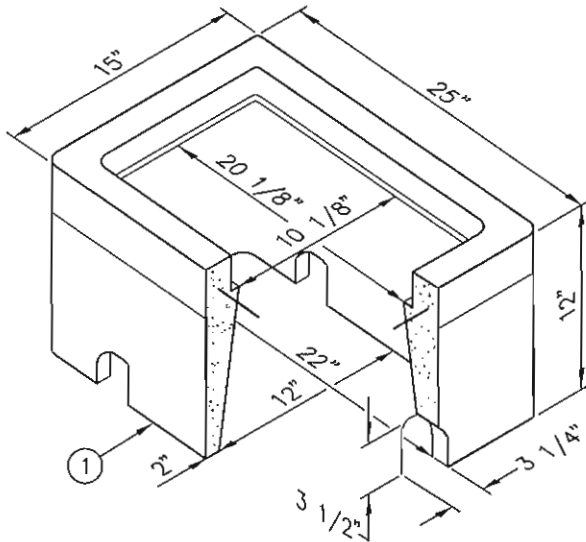
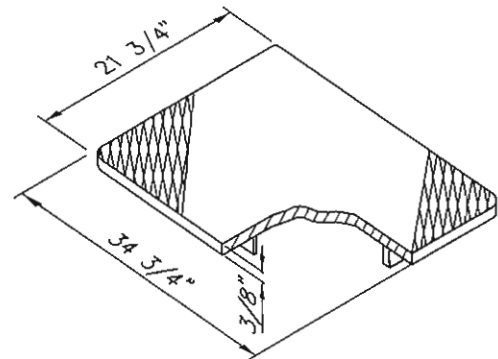
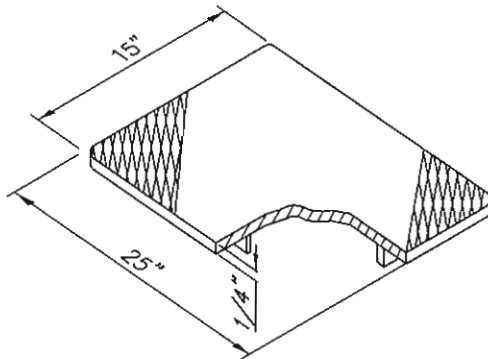
**STANDARD METER BOX**

STD. DWG. NO.

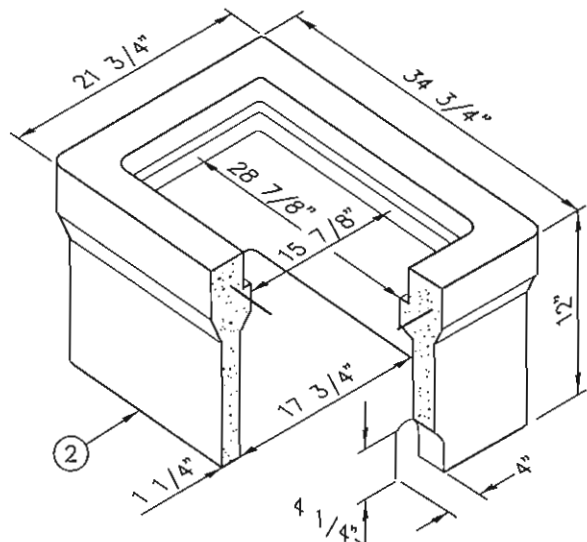
**W-11**



**TYPICAL METER BOX INSTALLATION**



**3/4" TO 1" SERVICE**



**2" SERVICE**

**NOTES:**

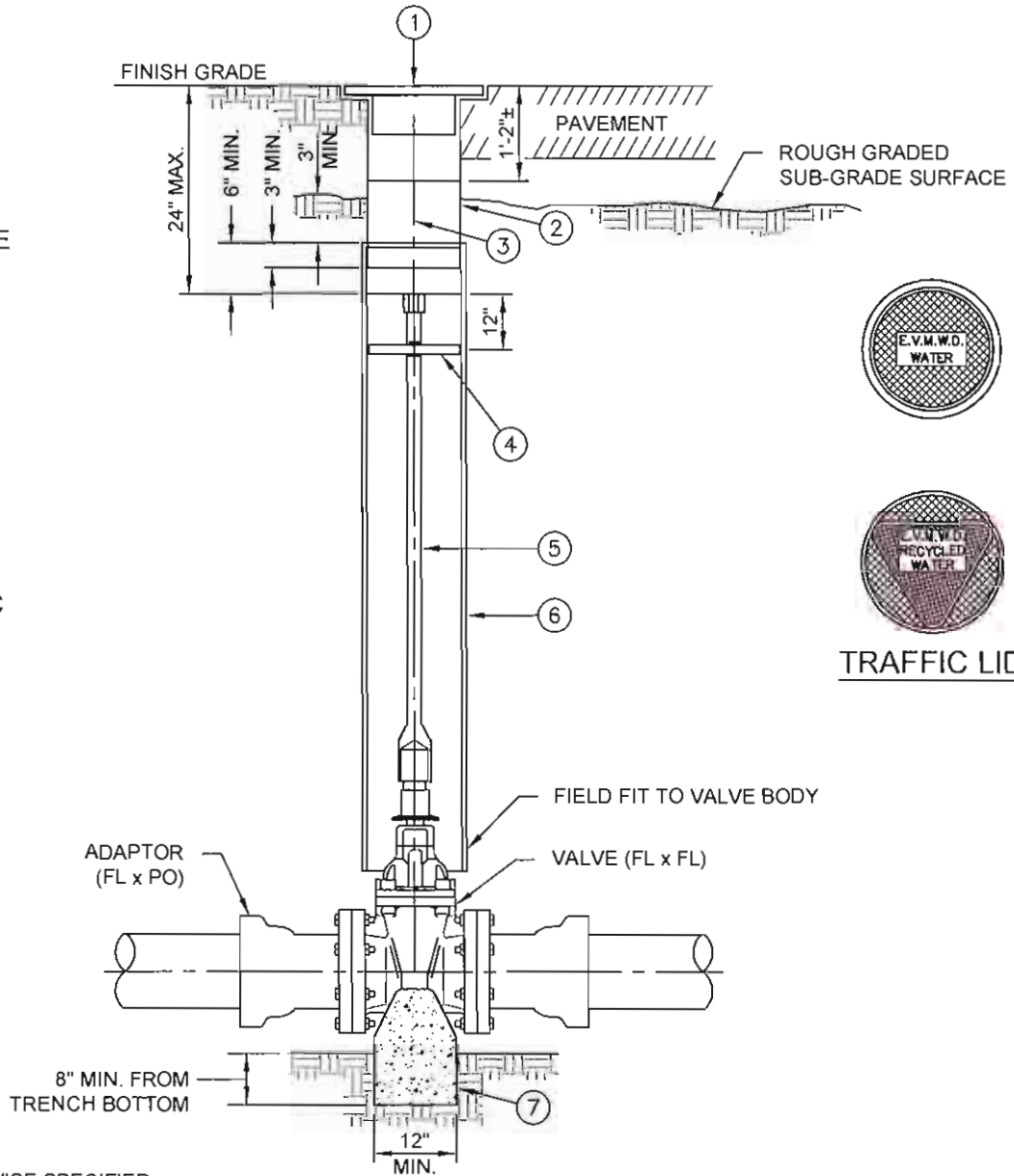
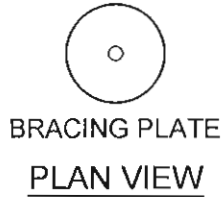
1. ALL TRAFFIC AREA LIDS SHALL BE REINFORCED FIBERGLASS. SEE ACCEPTED MATERIALS GUIDELINE.
2. RECYCLED WATER METER LIDS SHALL BE PANTONE PURPLE.

ITEM	DESCRIPTION
①	METER BOX - HIGH DENSITY POLYMER COMPOSITE OR EQUAL
②	METER BOX - HIGH DENSITY POLYMER COMPOSITE OR EQUAL (FOR TRAFFIC AREA)
③	PAD TO BE 8" CLASS 2 BASE

REVISION	BY	APPR	DATE

**METER BOXES FOR EXISTING  
 SIDEWALK AREAS ONLY**

STD. DWG. NO.  
**W-12**



NOTES:  
EXCEPT OTHERWISE SPECIFIED

1. CONTRACTOR SHALL RAISE SLIP CAN TO GRADE AFTER STREET IS PAVED WHERE PAVING IS PROPOSED.
2. ALL VALVE CANS SHALL BE EXPOSED AT ALL TIMES DURING CONSTRUCTION UNLESS BURIAL FOR GRADING IS AUTHORIZED BY THE INSPECTOR.
3. MATERIALS SHALL BE SELECTED FROM THE ACCEPTED MATERIALS GUIDELINE.
4. WELL CAPS FOR RECYCLED WATER SHALL HAVE A TRIANGULAR SHAPED CAP, BE PURPLE AND MARKED "EVMWD RECYCLED WATER".

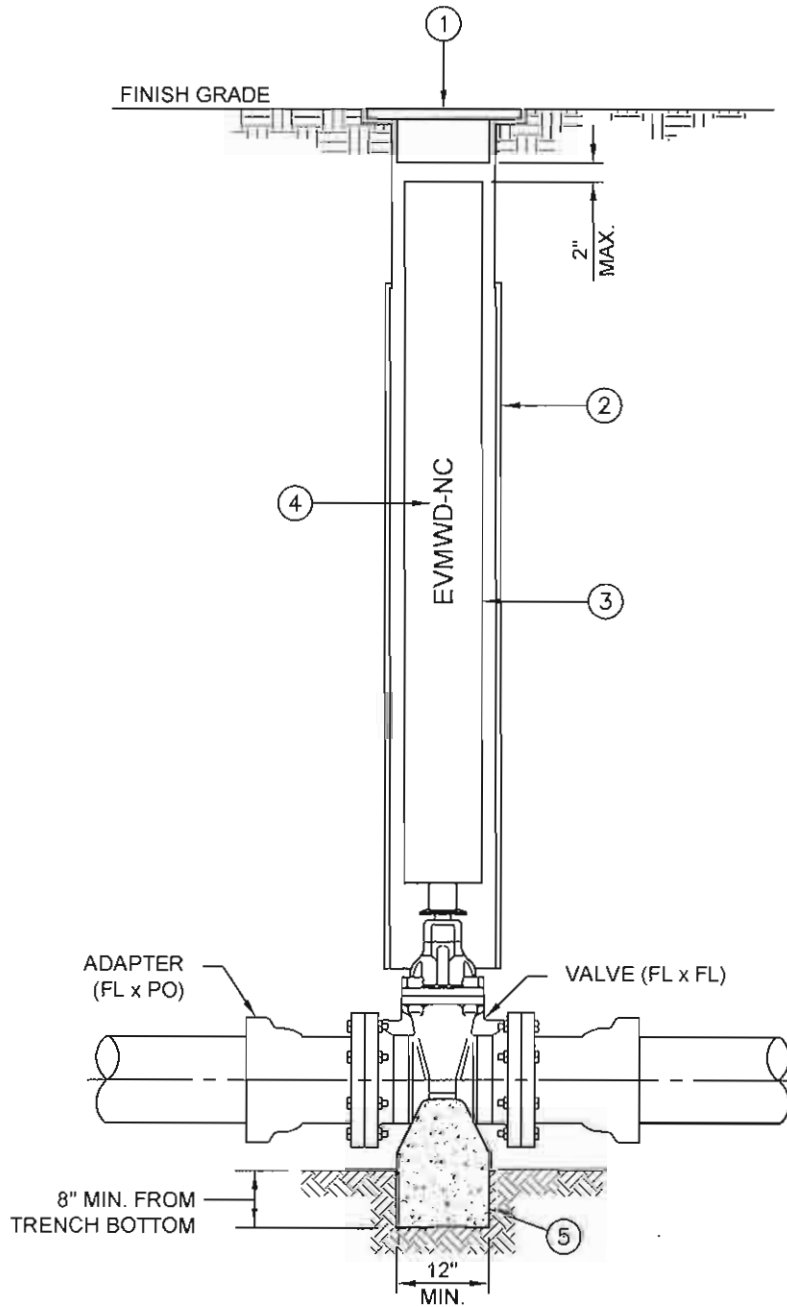
ITEM	DESCRIPTION
①	8" VALVE WELL CAP W/ 4" SKIRT PAINTED SAFETY PRECAUTION BLUE ENAMEL & PRIMER, & MARKED "E.V.M.W.D. WATER" ON CAP
②	8" O.D.x18 GA. SPLIT VALVE CAN TOP SECTION, GALVANIZED FOR SLIP CAN, SLIP CAN LENGTH 12", 18" OR 24" AS REQ'D
③	4"x4" REDWOOD POST IF VALVE HAS BLIND FLANGE PER STD. DWG. NO. W-14
④	1/8" + 1/32" SOLID DISC 7-3/4" DIA. AT 5' INTERVALS TACKWELD BRACING PLATE TO STEM
⑤	PROVIDE VALVE STEM EXTENSION WHERE DEPTH TO OPERATOR NUT EXCEEDS 5'
⑥	8" PVC, SDR-35 OR C-900 FOR GATE VALVES 3" AND LARGER, 6" PVC FOR GATE VALVES LESS THAN 3" DIAMETER
⑦	VALVE SUPPORT BLOCK PER STD. DWG. NO. W-15

REVISION	BY	APPR	DATE

*Paul S. Carver* 11/7/12  
 Paul S. Carver R.C.E. 31516 DATE

**VALVE WELL  
 AND RISER DETAIL**

STD. DWG. NO.  
**W-13**



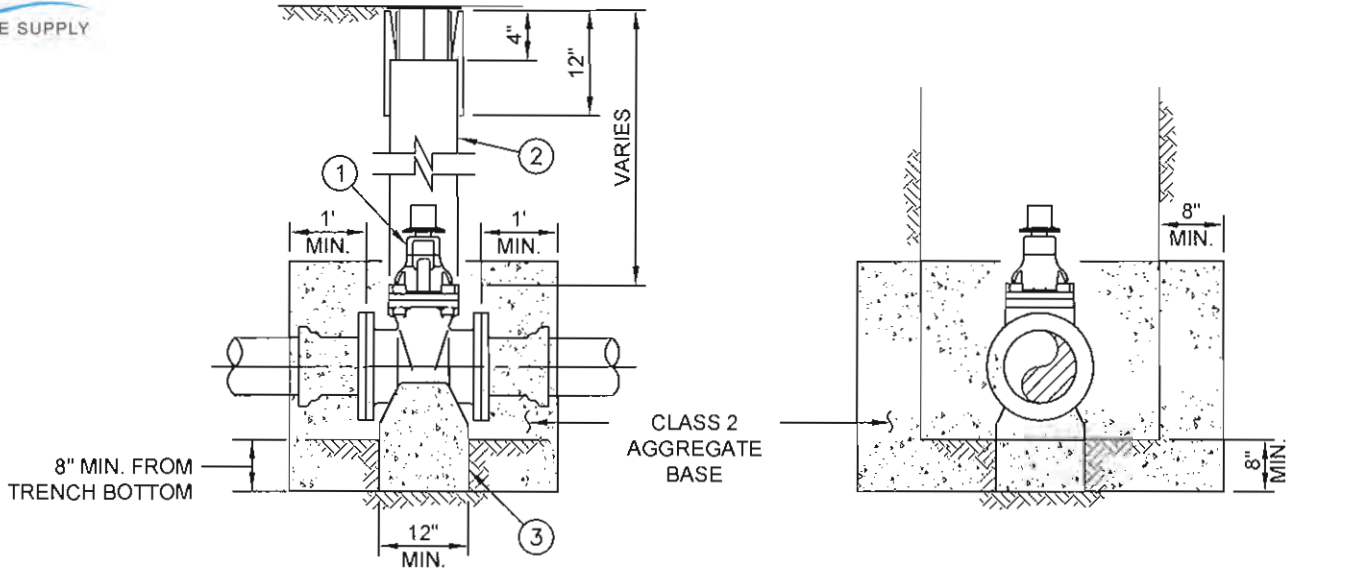
ITEM	DESCRIPTION
①	CAN AND COVER ASSEMBLY PER STD. DWG. W-13, PAINTED RED.
②	VALVE CAN
③	4"x4" REDWOOD POST
④	ENGRAVED INITIALS "EVMWD-NC" FOR (NORMALLY CLOSED) ALL SIDES, TOP AND BOTTOM IN 1-1/2" HIGH LETTERS, 1/2" DEEP, CLEARLY LEGIBLE
⑤	VALVE SUPPORT BLOCK PER STD. DWG. W-15

REVISION	BY	APPR	DATE

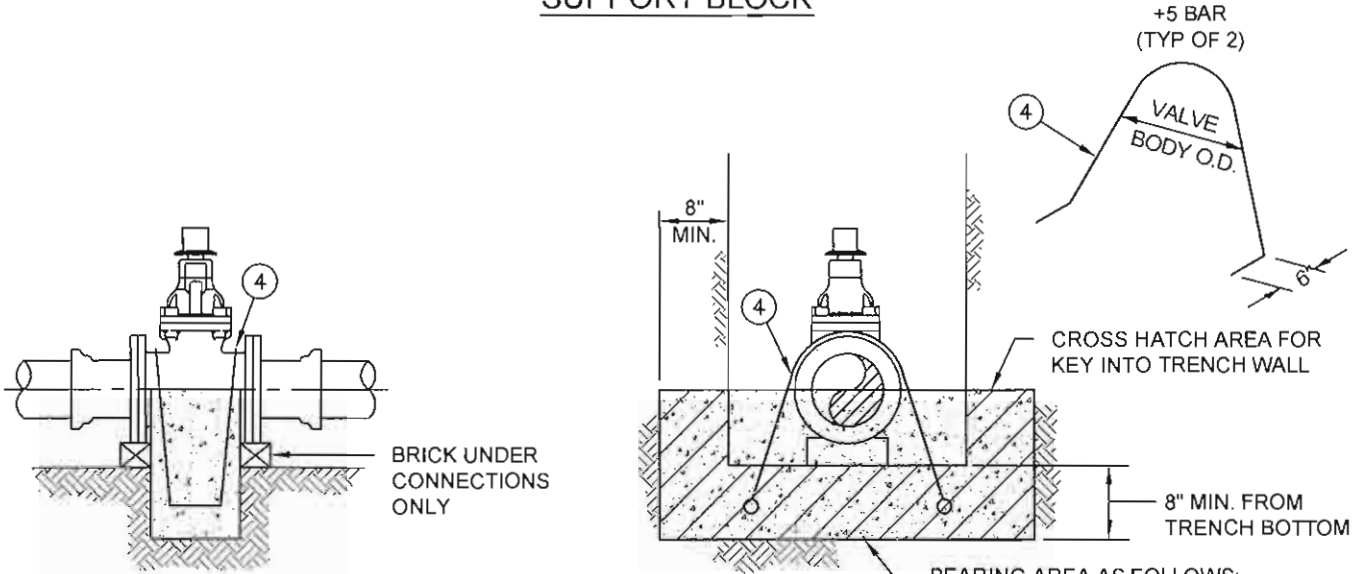
  
 Etsinore Valley Municipal Water District  
*Paul S. Carver* 11/7/12  
 Paul S. Carver R.C.E. 31516 DATE

**NORMALLY CLOSED  
 VALVE CAN DETAIL**

STD. DWG. NO.  
**W-14**



**SUPPORT BLOCK**



BEARING AREA AS FOLLOWS:

VALVE SIZE	BEARING AREA
4"-6"	4 S.F.
8"	7 S.F.
10"	10 S.F.
12"	15 S.F.

**NOTES:**

**CONCRETE ANCHOR BLOCK**

1. CONCRETE VALVE SUPPORTS SHALL BE USED IF GEOTECHNICAL CONDITIONS INDICATE POOR BEARING PRESSURE VALVES.
2. CONCRETE SHALL BE 2500 PSI.
3. SUPPORT IS REQUIRED ON VALVES OVER 3 INCHES IN SIZE.
4. MATERIALS SHALL BE SELECTED FROM THE ACCEPTED MATERIALS GUIDELINE.

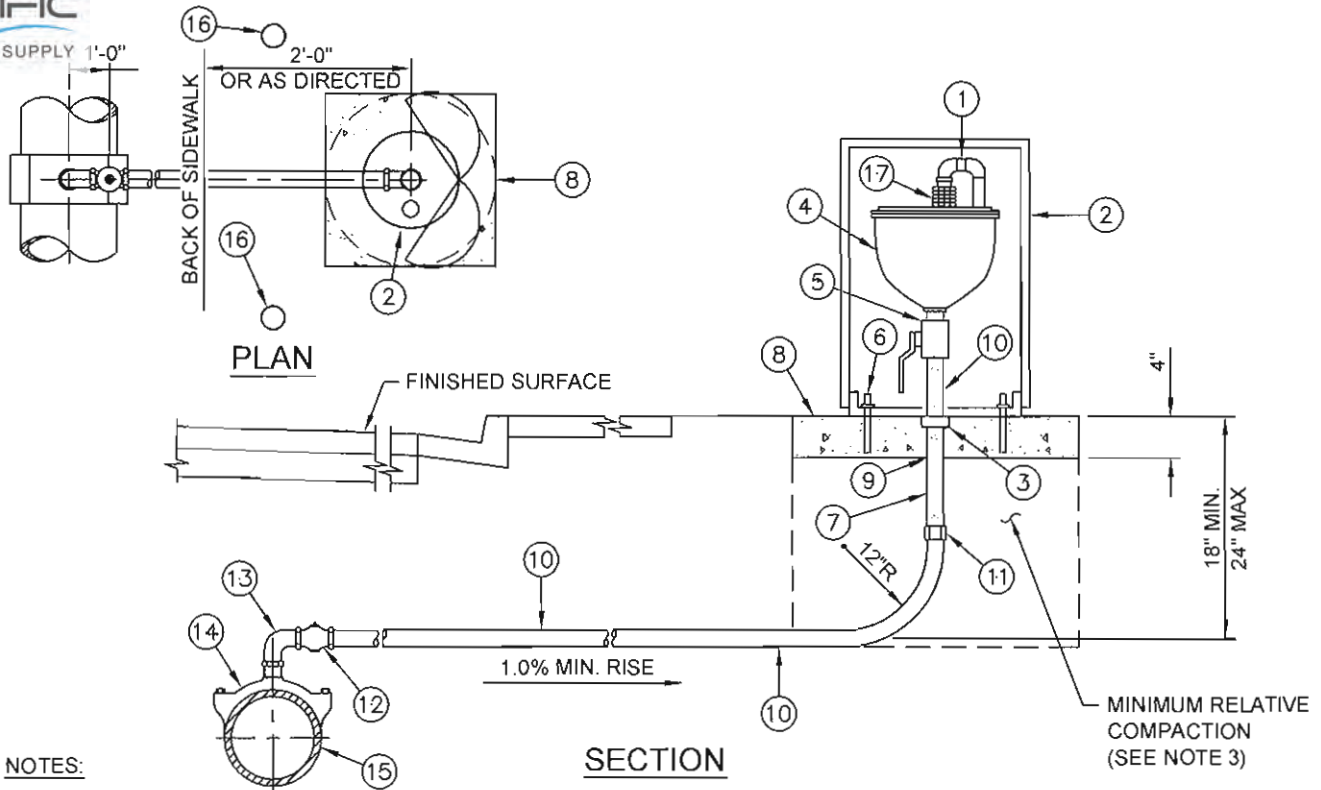
ITEM	DESCRIPTION
①	VALVE (FLG x FLG)
②	VALVE CAP, WELL AND RISER PER E.V.M.W.D. STD. DWG. W-13
③	CONCRETE SUPPORT BLOCK SHALL BE POURED WITH FORMS TO AVOID CONTACT WITH VALVE CONNECTIONS
④	ANCHOR = 5/8 DIA. REINF. BARS, COAT WITH 20 MILS. MIN. OF KOP-COAT SERIES 50 BITUMASTIC

REVISION	BY	APPR	DATE

**VALVE SUPPORT AND ANCHOR BLOCKING DETAIL**

STD. DWG. NO.  
**W-15**





**NOTES:**

1. VALVE PLACEMENT AND CIRCULAR CONCRETE PAD ON RURAL ROADWAYS WHERE CURB AND GUTTER AND SIDEWALKS ARE NOT PRESENT WILL BE AT THE DISCRETION OF THE FIELD INSPECTOR.
2. AIR AND VACUUM VALVES INSTALLED FOR THE USE OF RECYCLED WATER SHALL BE IDENTIFIED AS DESCRIBED IN THE STANDARD SPECIFICATIONS.
3. COMPACTION UNDER CONCRETE PAD SHALL BE 95% OR GREATER, FROM THE BOTTOM OF THE PAD TO THE BOTTOM OF THE SERVICE LINE TRENCH.
4. ENCLOSURE FOR POTABLE WATER MAINS SHALL BE COLORED "SAFETY YELLOW", FOR RECYCLED WATER COLOR SHALL BE PURPLE.
5. MATERIALS SHALL BE SELECTED FROM THE ACCEPTED MATERIALS GUIDELINE.

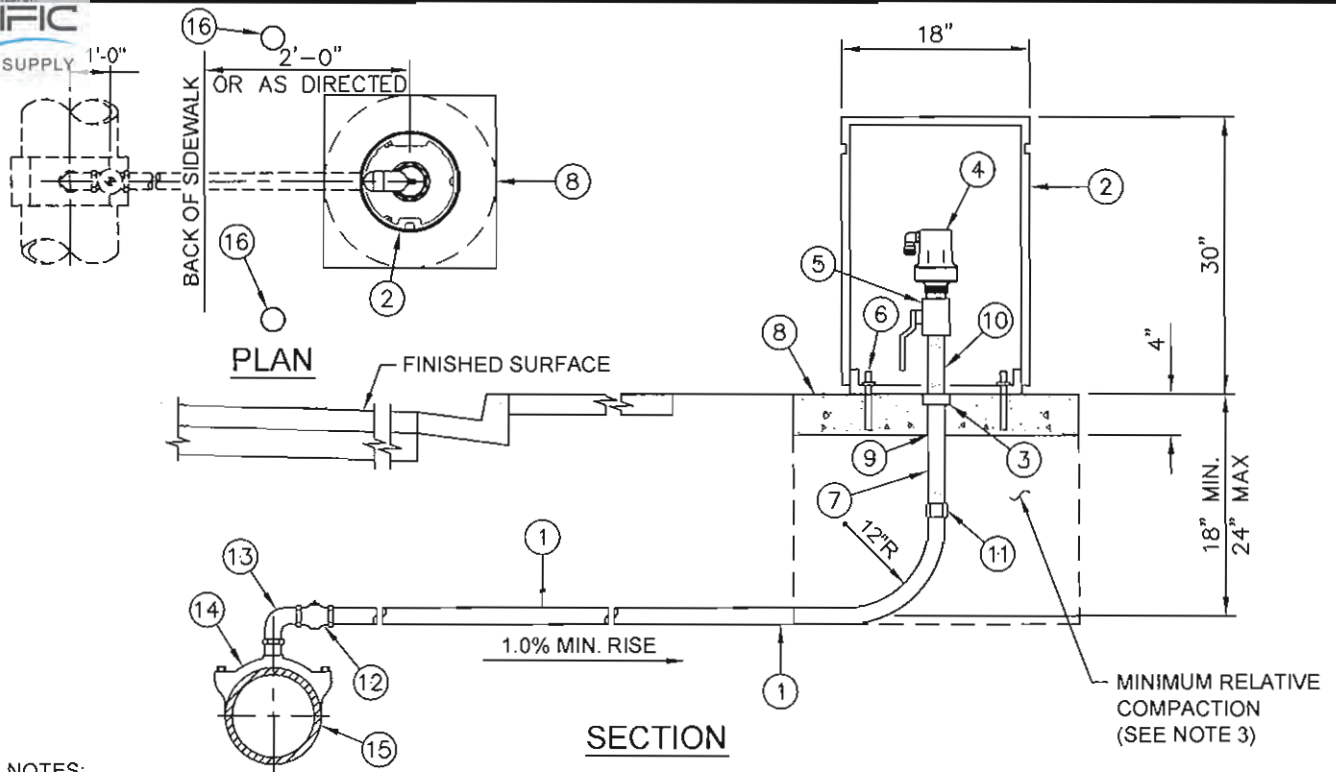
ITEM	DESCRIPTION
(1)	PVC 2-SCH 40 STREET ELLS AND INSECT SCREEN
(2)	VALVE ENCLOSURE PER EVMWD STANDARD DRAWING W-18a OR W-18b.
(3)	BRONZE COUPLING
(4)	AUTOMATIC COMBINATION AIR RELEASE AND VACUUM RELIEF VALVE (SEE SECTION 7-4 OF THE TECHNICAL SPECIFICATIONS)
(5)	BRONZE BALL VALVE WITH FIPT, WITH BRONZE HANDLE
(6)	1/2" X 3" STAINLESS STEEL DROP-IN ANCHORS (3 EA. @ 120° APART)
(7)	BRASS NIPPLE
(8)	2'-6" X 2'-6" X 4" THICK CONCRETE SLAB
(9)	10 MIL POLYETHYLENE WRAP
(10)	REQUIRED LENGTH COPPER PIPE TYPE "K" (SOFT)
(11)	COMPRESSION X FIPT ADAPTER
(12)	COMPRESSION BALL VALVE WITH TEE HEAD MIP X COMPRESSION
(13)	BRONZE FIPT X MIPT STREET ELL
(14)	SERVICE SADDLE PER ACCEPTED MATERIALS GUIDELINE, STRAPS TO BE S.S.
(15)	WATER MAIN
(16)	GUARD POST PER EVMWD STANDARD DRAWING W-26 (WHEN NO SIDEWALK OR CURB IS PRESENT)
(17)	STAINLESS STEEL SCREEN TO VENT OUTLET

REVISION	BY	APPR	DATE

*Paul S. Carver* 11/7/12  
 Paul S. Carver R.C.E. 31518 DATE

**1" AUTOMATIC COMBINATION  
 AIR RELEASE & VACUUM RELIEF  
 VALVE INSTALLATIONS**

STD. DWG. NO.  
**W-16a**  
 1 OF 4




**NOTES:**

1. VALVE PLACEMENT AND CIRCULAR CONCRETE PAD ON RURAL ROADWAYS WHERE CURB AND GUTTER AND SIDEWALKS ARE NOT PRESENT WILL BE AT THE DISCRETION OF THE FIELD INSPECTOR.
2. AIR AND VACUUM VALVES INSTALLED FOR THE USE OF RECYCLED WATER SHALL BE IDENTIFIED AS DESCRIBED IN THE STANDARD SPECIFICATIONS.
3. COMPACTION UNDER CONCRETE PAD SHALL BE 95% OR GREATER, FROM THE BOTTOM OF THE PAD TO THE BOTTOM OF THE SERVICE LINE TRENCH.
4. ENCLOSURE FOR POTABLE WATER MAINS SHALL BE COLORED "SAFETY YELLOW", FOR RECYCLED WATER COLOR SHALL BE PURPLE.
5. MATERIALS SHALL BE SELECTED FROM THE ACCEPTED MATERIALS GUIDELINE.

ITEM	DESCRIPTION
①	REQUIRED LENGTH COPPER PIPE TYPE "K" (SOFT)
②	VALVE ENCLOSURE PER EVMWD STANDARD DRAWING W-18b
③	BRASS COUPLING
④	1" AUTOMATIC COMBINATION AIR RELEASE AND VACUUM RELIEF VALVE WITH INSECT SCREEN (ARI D-040 OR EQUAL)
⑤	BRONZE BALL VALVE WITH FIPT, WITH BRONZE HANDLE
⑥	1/2" X 3" STAINLESS STEEL DROP-IN ANCHORS (3 EA. @ 120° APART)
⑦	BRASS NIPPLE
⑧	2'-6" X 2'-6" X 4" THICK CONCRETE SLAB
⑨	10 MIL POLYETHYLENE TAPE
⑩	BRASS NIPPLE 12" LONG
⑪	COMPRESSION X FIPT ADAPTER
⑫	COMPRESSION BALL VALVE WITH TEE HEAD
⑬	BRONZE FIPT X MIPT STREET ELL
⑭	SERVICE SADDLE PER ACCEPTED MATERIALS GUIDELINE, STRAPS TO BE S.S.
⑮	WATER MAIN
⑯	GUARD POST PER EVMWD STANDARD DRAWING W-26 (WHEN NO SIDEWALK OR CURB IS PRESENT)
⑰	STAINLESS STEEL SCREEN TO VENT OUTLET

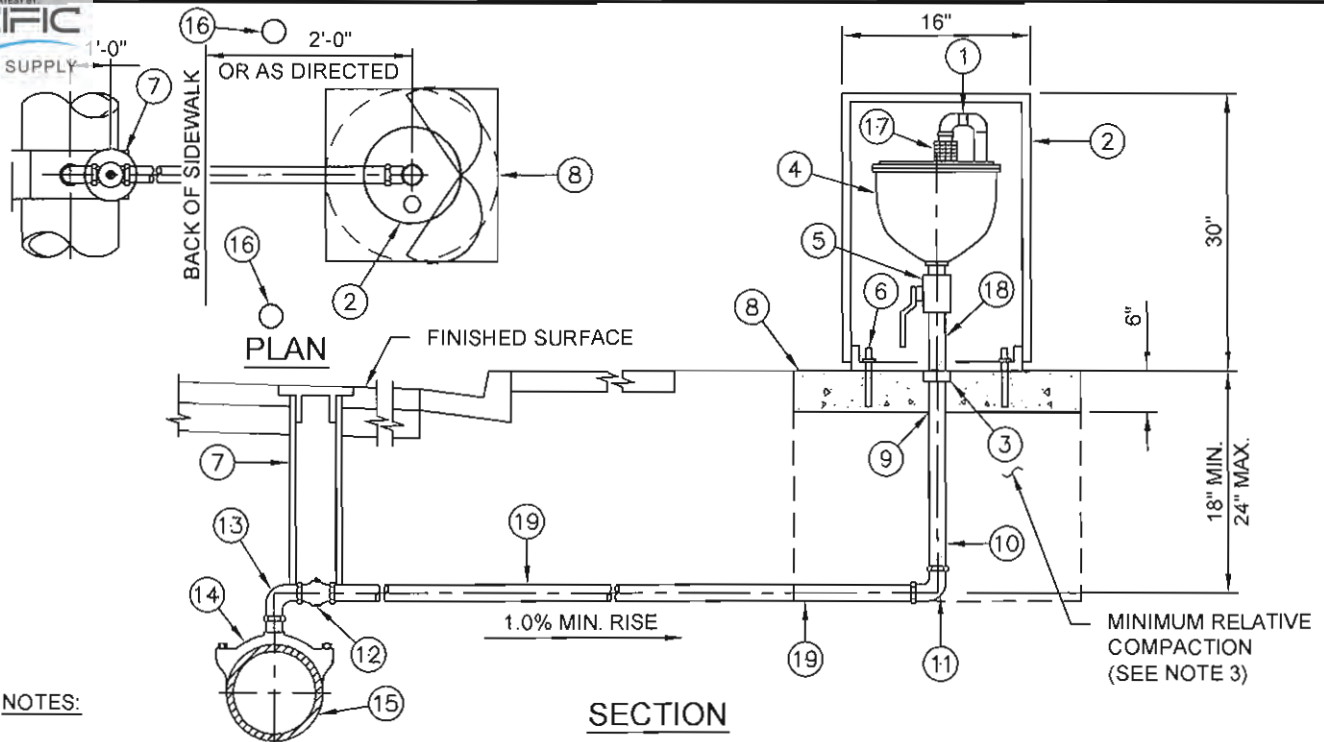
REVISION	BY	APPR	DATE



*Paul S. Carver* 1/2/12  
 Paul S. Carver R.C.E. 31518 DATE

**1" COMPACT STYLE  
 AIR RELEASE & VACUUM RELIEF  
 VALVE INSTALLATIONS**

STD. DWG. NO.  
**W-16b**  
 2 OF 4




**NOTES:**

**SECTION**

1. VALVE PLACEMENT AND CIRCULAR CONCRETE PAD ON RURAL ROADWAYS WHERE CURB AND GUTTER AND SIDEWALKS ARE NOT PRESENT WILL BE AT THE DISCRETION OF THE FIELD INSPECTOR.
2. AIR AND VACUUM VALVES INSTALLED FOR THE USE OF RECYCLED WATER SHALL BE IDENTIFIED AS DESCRIBED IN THE STANDARD SPECIFICATIONS.
3. COMPACTION UNDER CONCRETE PAD SHALL BE 95% OR GREATER, FROM THE BOTTOM OF THE PAD TO THE BOTTOM OF THE SERVICE LINE TRENCH.
4. ENCLOSURE FOR POTABLE WATER MAINS SHALL BE COLORED "SAFETY YELLOW", FOR RECYCLED WATER COLOR SHALL BE PURPLE.
5. MATERIALS SHALL BE SELECTED FROM THE ACCEPTED MATERIALS GUIDELINE.

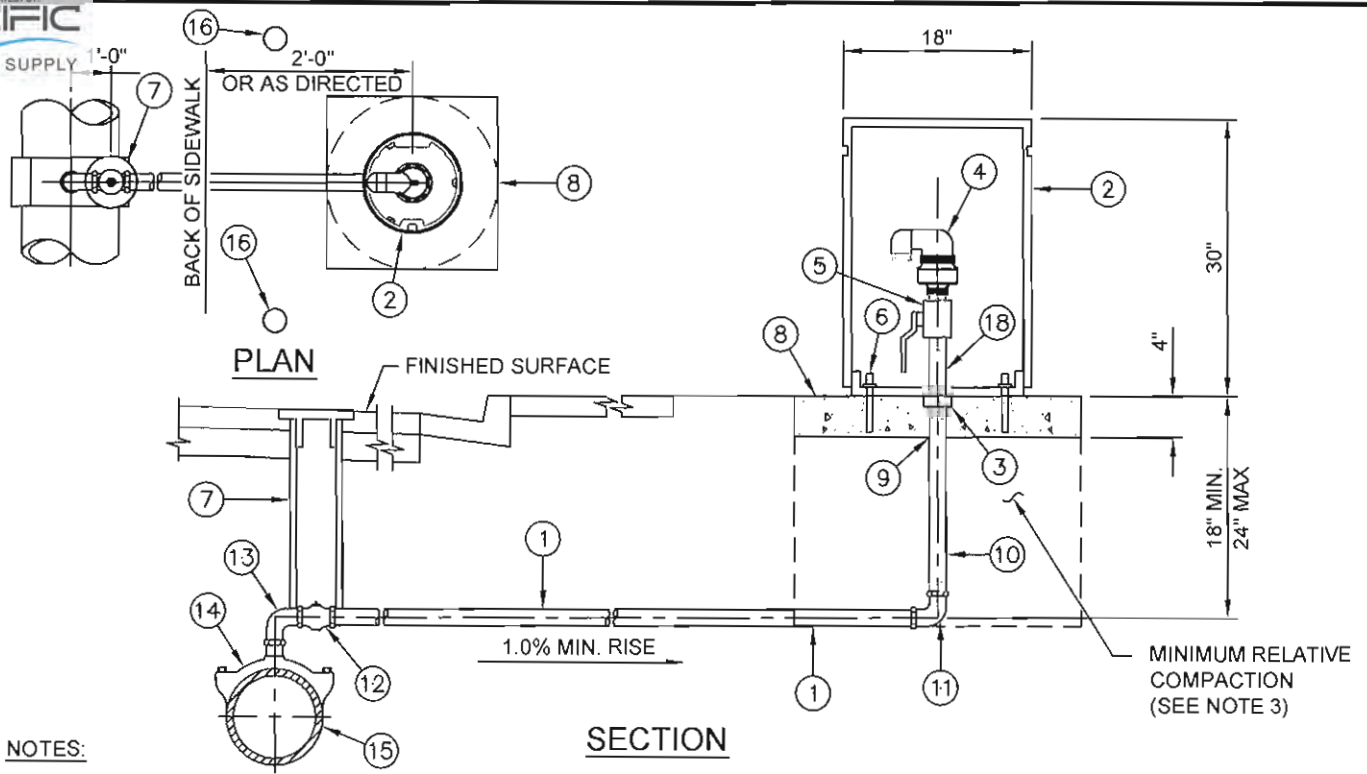
ITEM	DESCRIPTION
(1)	PVC SCH 80 CLOSE NIPPLE AND 2-SCH 80 STREET ELLS AND INSECT SCREEN
(2)	VALVE ENCLOSURE PER EVMWD STANDARD DRAWING W-18A OR W-18B
(3)	BRASS COUPLING
(4)	2" AUTOMATIC COMBINATION AIR RELEASE AND VACUUM RELIEF VALVE (SEE SECTION 7-4 OF THE TECHNICAL SPECIFICATIONS)
(5)	2" BRONZE BALL VALVE WITH FIPT
(6)	1/2" X 3" STAINLESS STEEL DROP-IN ANCHORS (3 EA. @ 120° APART)
(7)	6" SDR 35 SEWER PIPE GATE WELL WITH CAP
(8)	2'-6" X 2'-6" X 4" THICK CONCRETE SLAB
(9)	10 MIL POLYETHYLENE TAPE
(10)	2" BRASS NIPPLE
(11)	90° BRONZE COMPRESSION X FIPT ELL
(12)	2" COMPRESSION BALL VALVE WITH TEE HEAD
(13)	BRONZE FIPT X MIPT STREET ELL
(14)	SERVICE SADDLE PER ACCEPTED MATERIALS GUIDELINE, STRAPS TO BE S.S.
(15)	WATER MAIN
(16)	GUARD POST PER EVMWD STANDARD DRAWING W-26 (WHEN NO SIDEWALK OR CURB IS PRESENT)
(17)	STAINLESS STEEL SCREEN TO VENT OUTLET
(18)	2" BRASS NIPPLE 12" LONG
(19)	REQUIRED LENGTH COPPER PIPE TYPE "K" (SOFT)

REVISION	BY	APPR	DATE

  
 Elginore Valley Municipal Water District  
*Paul S. Carver* 11/2/12  
 Paul S. Carver R.C.E. 31516 DATE

**2" AUTOMATIC COMBINATION  
 AIR RELEASE & VACUUM RELIEF  
 VALVE INSTALLATIONS**

STD. DWG. NO.  
**W-16c**  
 3 OF 4



**NOTES:**

1. VALVE PLACEMENT AND CIRCULAR CONCRETE PAD ON RURAL ROADWAYS WHERE CURB AND GUTTER AND SIDEWALKS ARE NOT PRESENT WILL BE AT THE DISCRETION OF THE FIELD INSPECTOR.
2. AIR AND VACUUM VALVES INSTALLED FOR THE USE OF RECYCLED WATER SHALL BE IDENTIFIED AS DESCRIBED IN THE STANDARD SPECIFICATIONS.
3. COMPACTION UNDER CONCRETE PAD SHALL BE 95% OR GREATER, FROM THE BOTTOM OF THE PAD TO THE BOTTOM OF THE SERVICE LINE TRENCH.
4. ENCLOSURE FOR POTABLE WATER MAINS SHALL BE COLORED "SAFETY YELLOW", FOR RECYCLED WATER COLOR SHALL BE PURPLE.
5. MATERIALS SHALL BE SELECTED FROM THE ACCEPTED MATERIALS GUIDELINE.

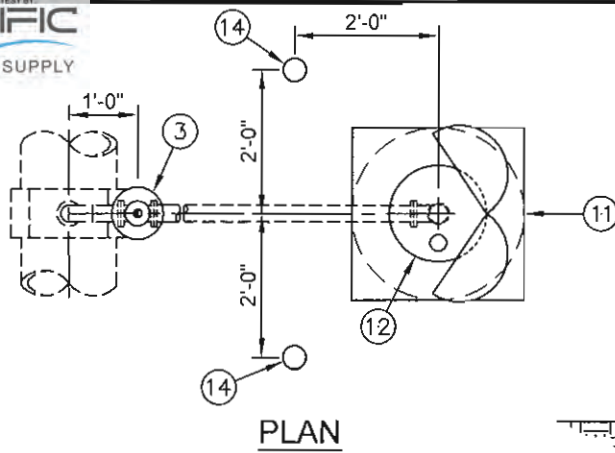
ITEM	DESCRIPTION
①	REQUIRED LENGTH COPPER PIPE TYPE "K" (SOFT)
②	VALVE ENCLOSURE PER EVMWD STANDARD DRAWING W-18b
③	2" BRASS COUPLING
④	2" AUTOMATIC COMBINATION AIR RELEASE AND VACUUM RELIEF VALVE WITH INSECT SCREEN (ARI D-040 OR EQUAL)
⑤	2" BRONZE BALL VALVE WITH FIPT, WITH BRONZE HANDLE
⑥	1/2" X 3" STAINLESS STEEL DROP-IN ANCHORS (3 EA. @ 120° APART)
⑦	6" SDR 35 SEWER PIPE GATE WELL WITH CAP
⑧	2'-6" X 2'-6" X 4" THICK CONCRETE SLAB
⑨	10 MIL POLYETHYLENE TAPE
⑩	2" BRASS NIPPLE
⑪	90° BRONZE COMPRESSION X FIPT ELL
⑫	COMPRESSION BALL VALVE WITH TEE HEAD
⑬	BRONZE FIPT X MIPT STREET ELL
⑭	SERVICE SADDLE PER ACCEPTED MATERIALS GUIDELINE, STRAPS TO BE S.S.
⑮	WATER MAIN
⑯	GUARD POST PER EVMWD STANDARD DRAWING W-26 (WHEN NO SIDEWALK OR CURB IS PRESENT)
⑰	STAINLESS STEEL SCREEN TO VENT OUTLET
⑱	2" BRASS NIPPLE 12" LONG

REVISION	BY	APPR	DATE

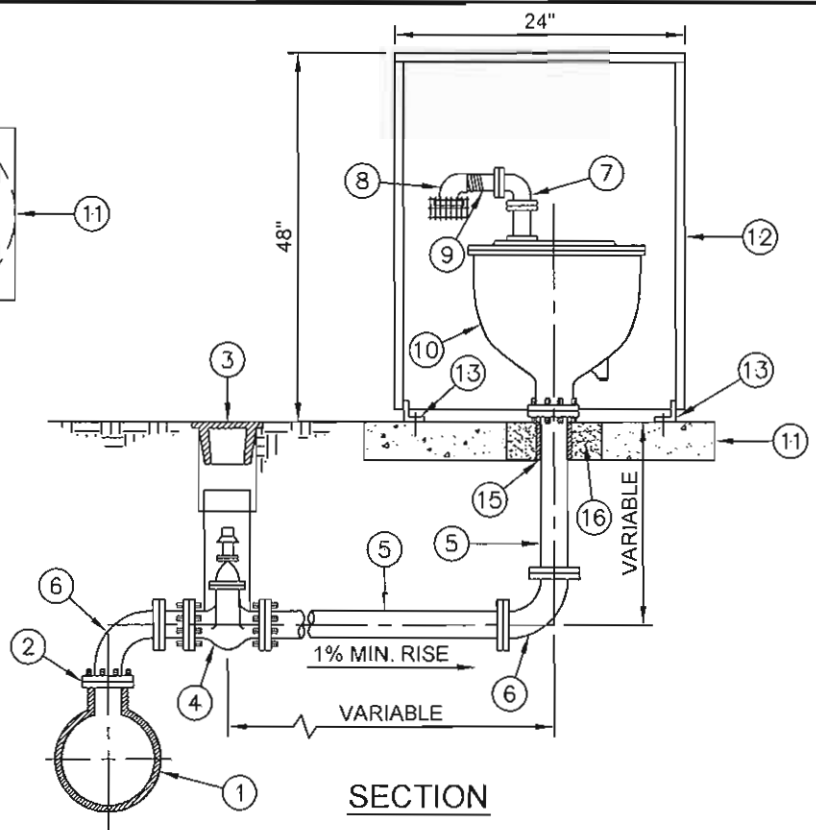
*Paul S. Carver* 11/7/12  
 Paul S. Carver R.C.E. 31516 DATE

**2" COMPACT STYLE  
 AIR RELEASE & VACUUM RELIEF  
 VALVE INSTALLATIONS**

STD. DWG. NO.  
**W-16d**  
 4 OF 4



**PLAN**



**SECTION**

**NOTES:**

1. PAINT EXPOSED SECTIONS "SAFETY YELLOW" (POTABLE WATER MAINS) OR PANTONE PURPLE (RECYCLED WATER MAINS).
2. ALL MATERIALS FURNISHED TO BE OF PIPE PRESSURE CLASS CALLED FOR ON PLANS, BUT NOT LESS THAN CLASS 200 WORKING PRESSURE (MIN).
3. THE FLANGES SHALL BE 125 LB. FLANGES.
4. BURIED APPURTENANCES, DUCTILE IRON PIPING AND FITTINGS TO BE POLY WRAPPED AND TAPED.
5. MATERIALS SHALL BE SELECTED FROM THE ACCEPTED MATERIALS GUIDELINE.
6. A REDUCING ELBOW OR REDUCER MAY BE NEEDED ON LARGE DIAMETER PIPES BETWEEN ITEM NOS. 1 AND 2.
7. VALVE PLACEMENT AND CIRCULAR CONCRETE PAD ON RURAL ROADWAYS WHERE CURB AND GUTTER AND SIDEWALKS ARE NOT PRESENT WILL BE AT THE DISCRETION OF THE FIELD INSPECTOR.

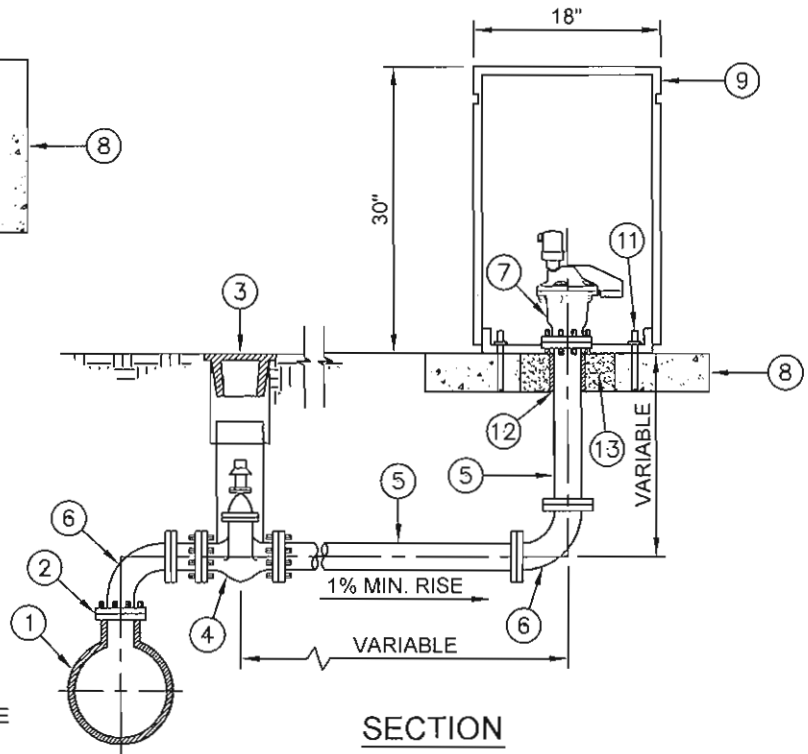
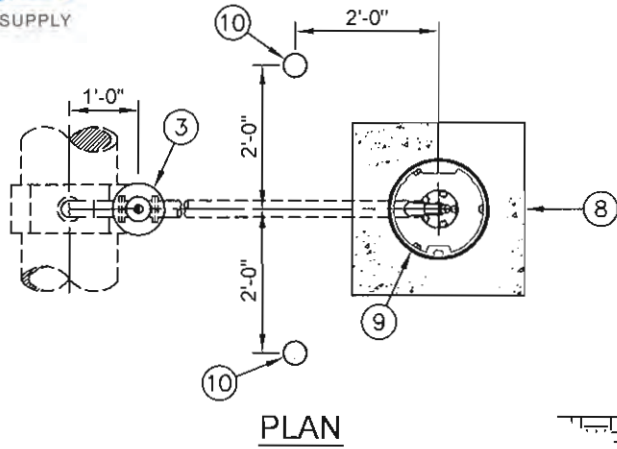
ITEM	DESCRIPTION
①	WATER MAIN
②	E.V.M.W.D. ACCEPTED SADDLE OR FLANGED OUTLET ON D.I. TEE
③	8" GATE VALVE CAP AND RISER PER STD. W-13
④	4" / 6" RESILIENT WEDGE GATE VALVE
⑤	4" / 6" FLANGED DUCTILE IRON PIPE (CLASS 52)
⑥	4" / 6" FLANGED D.I. 90° ELBOW
⑦	4" / 6" FLANGED STREET ELBOW
⑧	4" / 6" FLG x THREADED STREET ELBOW WITH SCREEN
⑨	4" / 6" FLG x THREADED PIPE SPOOL
⑩	4" / 6" FLANGED AIR-VAC AND VACUUM RELEASE VALVE
⑪	2'-6" X 2'-6" X 4" THICK CONCRETE SLAB
⑫	POWDER COATED VALVE ENCLOSURE PER EVMWD STANDARD DRAWING W-18a
⑬	"L" CLIPS PER MANUFACTURER RECOMMENDATIONS
⑭	GUARD POST PER E.V.M.W.D. STD. DWG. W-26 (WHEN NO SIDEWALK OR CURB IS PRESENT)
⑮	1/2" THICK BLACK FOAM SLEEVE
⑯	EPOXY GROUT

REVISION	BY	APPR	DATE

*Paul S. Carver* 11/7/12  
 Paul S. Carver R.C.E. 31516 DATE

**4" AND 6" AIR RELEASE AND VACUUM RELIEF VALVES**

STD. DWG. NO.  
**W-17a**  
 1 OF 2



**NOTES:**

1. PAINT EXPOSED SECTIONS "SAFETY YELLOW" (POTABLE WATER MAINS) OR PANTONE PURPLE (RECYCLED WATER MAINS).
2. ALL MATERIALS FURNISHED TO BE OF PIPE PRESSURE CLASS CALLED FOR ON PLANS, BUT NOT LESS THAN CLASS 200 WORKING PRESSURE (MIN).
3. THE FLANGES SHALL BE 125 LB. FLANGES.
4. BURIED APPURTENANCES, DUCTILE IRON PIPING AND FITTINGS TO BE POLY WRAPPED AND TAPED.
5. MATERIALS SHALL BE SELECTED FROM THE ACCEPTED MATERIALS GUIDELINE.
6. A REDUCING ELBOW OR REDUCER MAY BE NEEDED ON LARGE DIAMETER PIPES BETWEEN ITEM NOS. 1 AND 2.
7. VALVE PLACEMENT AND CIRCULAR CONCRETE PAD ON RURAL ROADWAYS WHERE CURB AND GUTTER AND SIDEWALKS ARE NOT PRESENT WILL BE AT THE DISCRETION OF THE FIELD INSPECTOR.

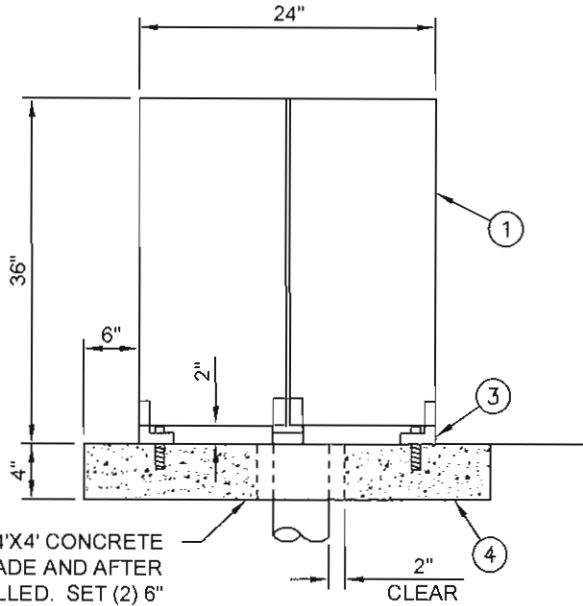
ITEM	DESCRIPTION
(1)	WATER MAIN
(2)	E.V.M.W.D. ACCEPTED SADDLE OR FLANGED OUTLET ON D.I. TEE
(3)	8" GATE VALVE CAP AND RISER PER STD. W-13
(4)	4"/6" RESILIENT WEDGE GATE VALVE
(5)	4"/6" FLANGED DUCTILE IRON PIPE (CLASS 52)
(6)	4"/6" FLANGED D.I. 90° ELBOW
(7)	4"/6" FLANGED AIR-VAC AND VACUUM RELEASE VALVE (ARI D-050 OR EQUAL)
(8)	2'-6" X 2'-6" X 4" THICK CONCRETE SLAB
(9)	VALVE ENCLOSURE PER STD. DWG. W-18b
(10)	GUARD POST PER E.V.M.W.D. STD. DWG. W-26 (WHEN NO SIDEWALK OR CURB IS PRESENT)
(11)	1/2" X 3" STAINLESS STEEL DROP-IN ANCHORS (3 EA. @ 120° APART)
(12)	1/2" THICK BLACK FOAM SLEEVE
(13)	EPOXY GROUT

REVISION	BY	APPR	DATE

**E.V.M.W.D.**  
 Elsinore Valley Municipal Water District  
*Paul S. Carver* 11/7/12  
 Paul S. Carver R.C.E. 31518 DATE

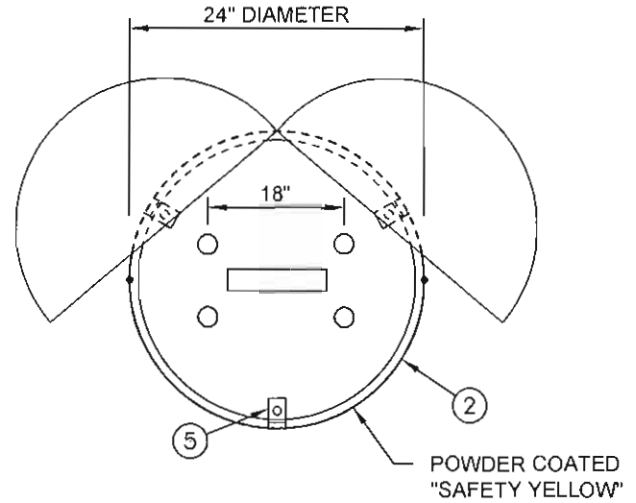
**4" AND 6" COMPACT STYLE  
 AIR RELEASE & VACUUM RELIEF  
 VALVE INSTALLATIONS**

STD. DWG. NO.  
**W-17b**  
 2 OF 2

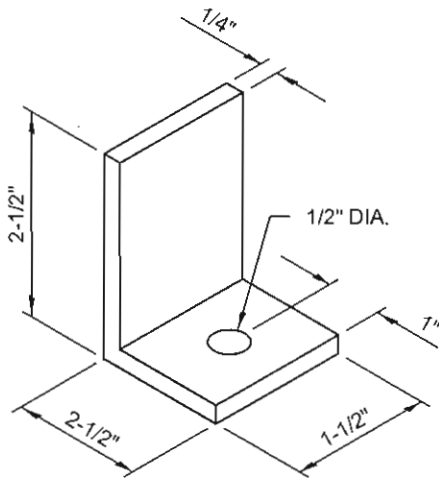


SET TOP OF 4'X4' CONCRETE PAD AT GRADE AND AFTER VALVE IS INSTALLED. SET (2) 6" DIA. CONCRETE FILLED STEEL GUARD POSTS TO PROTECT CAN, SEE STD. DWG. W-26, WHERE REQUIRED BY DISTRICT

SECTION



PLAN



CLIP DETAIL

NOTE:

1. VALVE ENCLOSURE SHALL BE "SAFETY YELLOW" FOR POTABLE WATER AND PANTONE PURPLE FOR RECYCLED WATER.

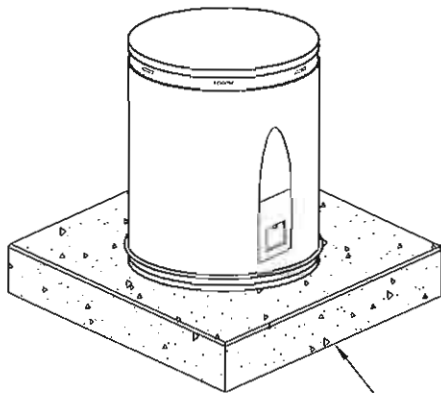
ITEM	DESCRIPTION
①	CLAM SHELL TYPE VALVE ENCLOSURE, POWDER COATED
②	3/16" STEEL COVER, CONTINUOUS WELD TO CYLINDER
③	3 EACH 1/4" GALVANIZED "L" CLIPS WITH 1/4" FILLET WELD AND 1/2" DIA. HOLE, SEE DETAIL HEREON
④	4'x4' CONCRETE PAD
⑤	1/2" DIA. STUDS AT 4 LOCATIONS ("REDHEAD" TYPE ANCHORS)

REVISION	BY	APPR	DATE

*Paul S. Carver* 11/7/12  
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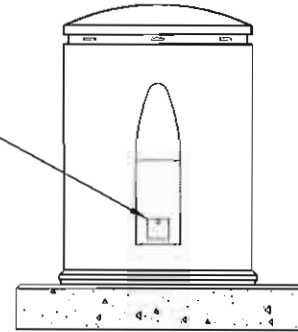
4" AND 6" AIR RELEASE AND VACUUM RELIEF VALVE ENCLOSURE

STD. DWG. NO.  
**W-18a**  
 1 OF 2

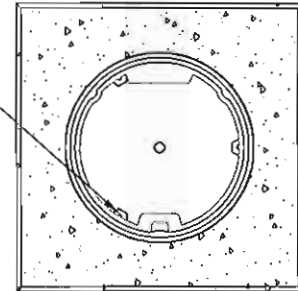


2'-6" x 2'-6" x 4"  
 CONCRETE PAD

STAINLESS STEEL  
 PADLOCK BACKING  
 PLATE



3/8" PLASTIC SHEILDS  
 W/ 1-1/2" x 3/8"  
 STAINLESS STEEL LAG BOLTS



NOTES:

1. 18" DIA. x 30" TALL VALVE ENCLOSURE. ENCLOSURE TO HAVE A BOLT DOWN BASE WITH REMOVABLE COVER. COVER & BASE TO BE MANUFACTURED FROM 3/16" WALL POLYETHYLENE WITH UV INHIBITORS. COVER SHALL LOCK TO BASE WITH INTEGRAL AUTO-LATCH AND PADLOCK HASP. COVER TO BE PIPELINE PRODUCTS' MODEL #VCAS-1830 OR ACCEPTED EQUAL.
2. ENCLOSURE FOR POTABLE WATER MAINS SHALL BE "SAFETY YELLOW", FOR RECYCLED WATER COLOR SHALL BE PANTONE PURPLE.
3. MATERIALS SHALL BE SELECTED FROM THE ACCEPTED MATERIALS GUIDELINE.
4. PADLOCK TO BE SUPPLIED BY DISTRICT

REVISION	BY	APPR	DATE

**EVMWD**  
 Elsinore Valley Municipal Water District

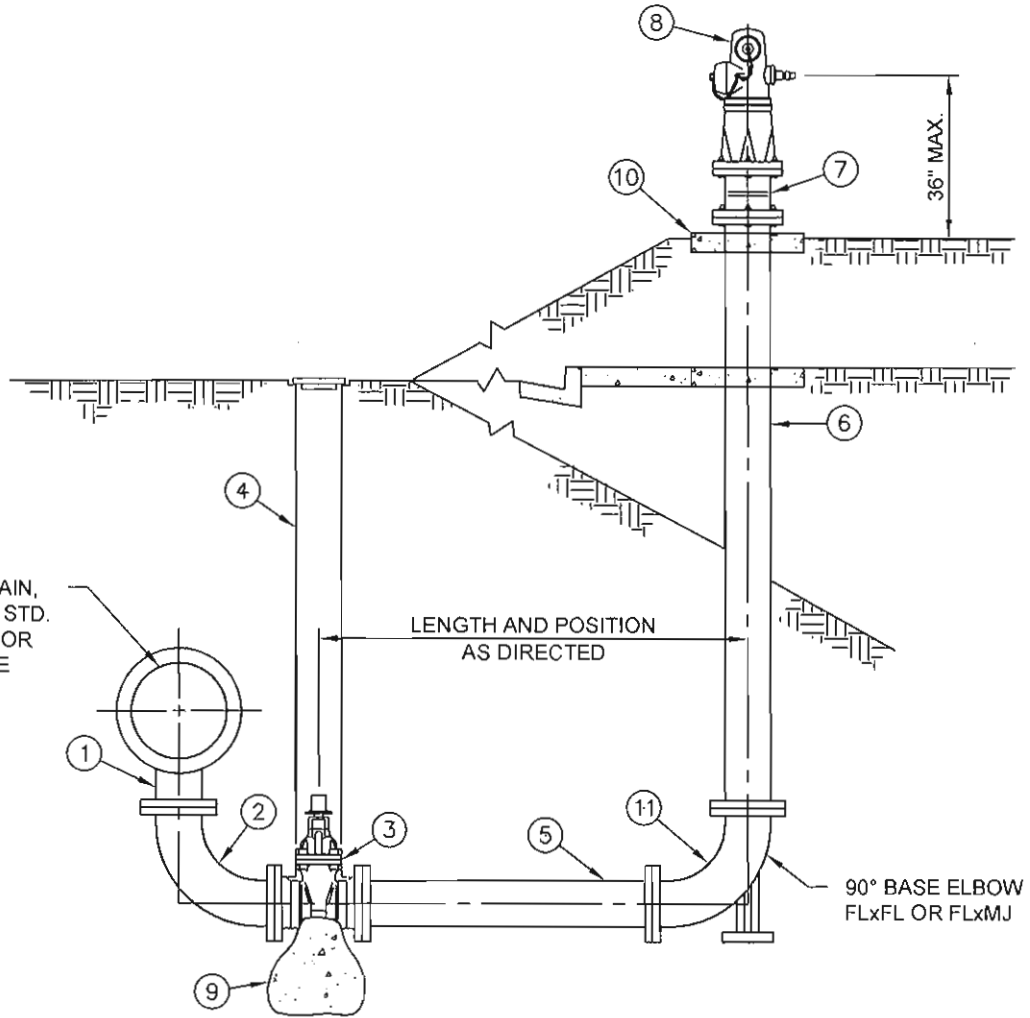
*Paul S. Carver* 11/7/12  
 Paul S. Carver R.C.E. 31516 DATE

**AIR RELEASE & VACUUM RELIEF  
 LOW DENSITY POLYETHYLENE  
 ENCLOSURE ASSEMBLY**

STD. DWG. NO.

**W-18b**





P.V.C. OR D.I. MAIN,  
SEE DETAIL ON STD.  
DWG. NO. W-7 FOR  
STEEL MAINLINE

LENGTH AND POSITION  
AS DIRECTED


90° BASE ELBOW  
FLxFL OR FLxMJ

**NOTES:**

1. RESTRAINED JOINTS ARE REQUIRED.
2. BLOW-OFF (HYDRANT BODY) TO BE PAINTED "SAFETY YELLOW" FOR POTABLE WATER.

ITEM	EACH	DESCRIPTION	SPEC.	REMARKS
①	1	STD. 6" TEE BRANCH	D.I. FLG ON 6" BRANCH	SET VERTICALLY DOWN
②	1	6" 90° LONG RADIUS BEND	D.I. 6" LONG RADIUS, FLxFL	WITH THRUST BLOCK
③	1	6" GATE VALVE	SEE W-14 AND W-15	RESILIENT WEDGE, FLxFL
④	1	8" VALVE WELL AND CAP	SEE W-13	
⑤	1	6" PIPE BLOWOFF RUN	STD. DWG. W-7	FLxFL OR FLxPE DIP OR PVC
⑥	1	6" STD. FIRE HYDRANT BURY	STD. DWG. W-7	6 HOLE FLxFL OR FLxMJ (VARIABLE HEIGHT)
⑦	1	6" GROOVED BREAK OFF SPOOL	6", 6 HOLE, SEE W-7	SPOOL ABOVE SURFACE, PAINTED, NUTS ON TOP OF FLANGE, DAMAGE 2 OPPOSITE FACING THREADED ENDS TO ENSURE INABILITY OF REMOVAL
⑧	1	6" RESIDENTIAL FIRE HYDRANT	STD. DWG. W-7	4"x2-1/2" JAMES JONES JJ-3700, PAINTED
⑨	-	VALVE SUPPORT BLOCK	STD. DWG. W-15	
⑩	1	560 C3250 CONCRETE PAD	2'-6"x2'-6"x6" DEEP	
⑪	1	6" DIA. 90° BASE ELBOW, SHORT RADIUS	FLxFL OR FLxMJ	

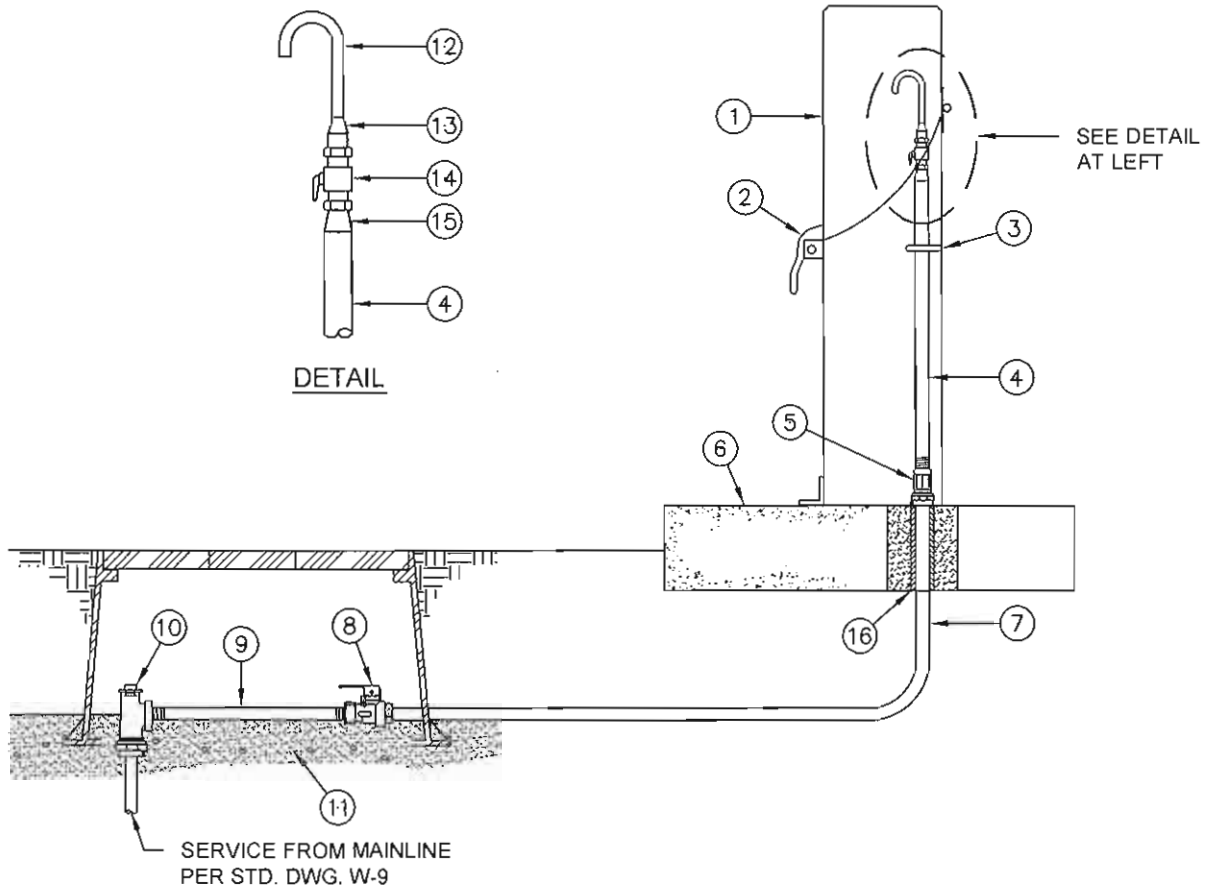
REVISION	BY	APPR	DATE

  
 Elsinore Valley Municipal Water District  
*Paul S. Carver* 11/7/12  
 Paul S. Carver R.C.E. 31516 DATE

**6" BLOW-OFF ASSEMBLY**

STD. DWG. NO.

**W-19**




**NOTES:**

1. BOX SHOULD BE LOCATED NEAR A STATIONARY OBJECT, SUCH AS A POWER POLE, FOR PROTECTION, OR PLACE SUFFICIENT CONCRETE AROUND RISER OR BELOW GROUND.
2. LOCATIONS AND NUMBERS OF SAMPLING POINT WILL BE DESIGNATED BY E.V.M.W.D. IN ACCORDANCE WITH THE REQUIREMENTS OF CALIFORNIA ADMINISTRATIVE CODE TITLE 22 DEPARTMENT OF HEALTH.
3. MATERIALS SHALL BE SELECTED FROM THE ACCEPTED MATERIALS GUIDELINE.

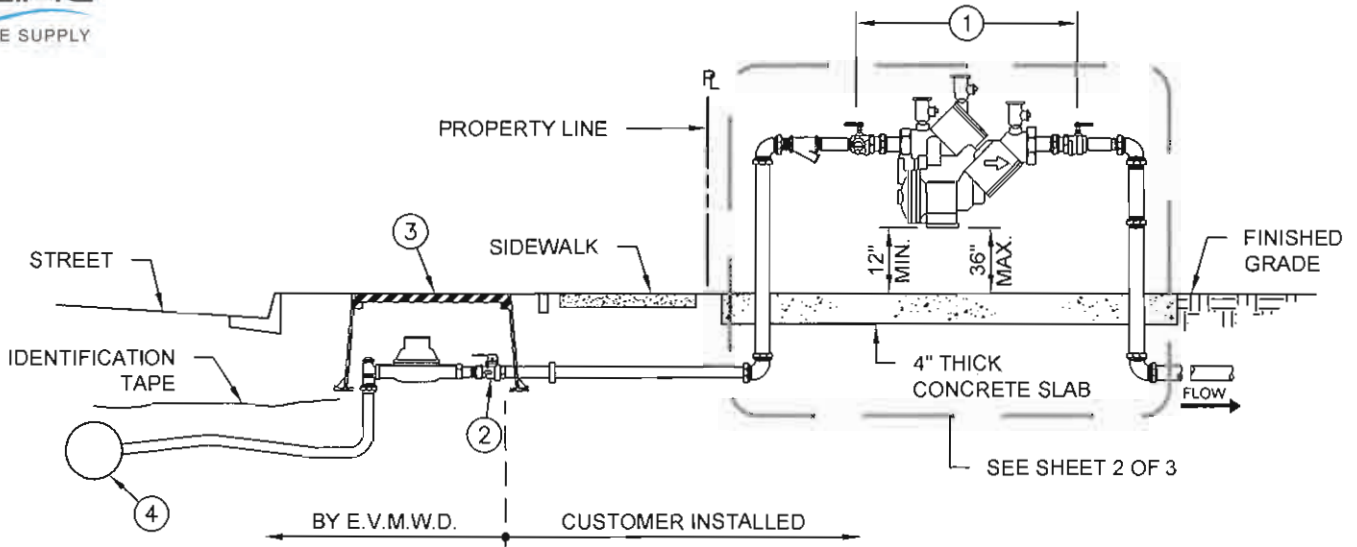
ITEM	DESCRIPTION
(1)	WATER TEST STATION COVER, POWDER COATED, PER STD. DWG. W-24
(2)	LOCK-HATCH
(3)	U BOLT (STAINLESS STEEL)
(4)	1" BRASS OR COPPER M.I.P. THREAD x M.I.P. THREAD
(5)	J-2607 1" COUPLING COMPRESSION x F.I.P. THREAD
(6)	CONCRETE PAD PER STD. DWG. W-24
(7)	1" PIPING AND LONG SWEEP, COPPER OR BRASS
(8)	1" BALL VALVE
(9)	1" BRASS PIPE
(10)	1" ANGLE METER STOP
(11)	3/4" CRUSHED ROCK PER STD. DWG. W-9
(12)	1/2" COPPER PIPE
(13)	1/2" x 1/2" COMPRESSION NIPPLE
(14)	1/2" BALL VALVE, M.I.P. x 1/2 MALE COMPRESSION
(15)	1" COMPRESSION x 1" M.I.P. ADAPTOR WITH 1" F.I.P. x 1/2" F.I.P. REDUCER
(16)	1/2" THICK BLACK FOAM SLEEVE

REVISION	BY	APPR	DATE

  
**E.V.M.W.D.**  
 Etanare Valley Municipal Water District  
*Paul S. Carver* 11/7/12  
 Paul S. Carver R.C.E. 31516 DATE

**TYPICAL SAMPLING POINT  
 INSTALLATION**

STD. DWG. NO.  
**W-20**



**NOTES:**

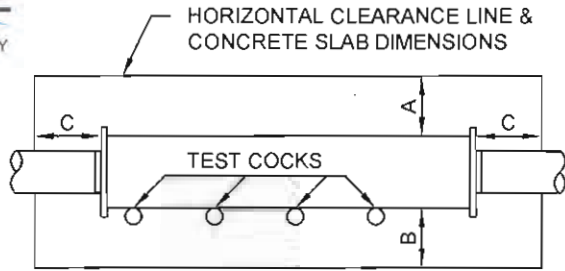
1. THE BACKFLOW PREVENTER ASSEMBLY SHALL CONSIST OF AN APPROVED REDUCED PRESSURE OR DOUBLE DETECTOR CHECK VALVE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS. THE ASSEMBLIES SHALL BE SUITABLE FOR SUPPLY PRESSURES.
2. THE BACKFLOW ASSEMBLY SHALL BE OF BRONZE CONSTRUCTION WITH ALL CONNECTIONS ON THE UNIT TO BE THREADED BRASS OR SWEATED COPPER MATERIAL FOR 3/4" THROUGH 2"; 2 1/2" AND ABOVE SHALL HAVE FLANGED FITTINGS TOGETHER WITH STAINLESS STEEL NUTS AND BOLTS.
3. AN ANGLE STYLE PRESSURE REDUCING VALVE SHALL BE INSTALLED ON THE UPSTREAM LINE OF THE BACKFLOW PREVENTER WHEN EXCESS OF 80 POUNDS PER SQUARE INCH OR MORE IS AVAILABLE PER SECTION 608.2 OF THE UNIFORM PLUMBING CODE.
4. WYE STRAINERS SHALL BE INSTALLED ON THE UPSTREAM SIDE OF THE BACKFLOW PREVENTER BODY. IF REQUIRED, A PRESSURE REGULATOR WITH A SERVICEABLE SCREEN CAN BE SUBSTITUTED FOR THE WYE STRAINER.
5. LOCATION AND INSTALLATION SHALL BE PER PLAN AS SUBMITTED TO AND ACCEPTED BY THE DISTRICT.
6. ALL ASSEMBLIES 2 1/2" AND LARGER TO BE INSTALLED SHALL BE EQUIPPED WITH RESILIENT WEDGE GATE VALVES.
7. LOCATE THE ASSEMBLY IMMEDIATELY AFTER THE CUSTOMER SERVICE VALVE. OTHER LOCATIONS MUST BE APPROVED BY THE DISTRICT INSPECTOR PRIOR TO INSTALLATION.
8. CLEARANCES ARE SHOWN, EXCEPT THAT LATERAL CLEARANCES SHALL BE 12-INCHES MINIMUM EACH DIRECTION.
9. ASSEMBLIES SHALL NOT BE LOCATED IN AREAS SUBJECT TO FLOODING.
10. ONLY SECURITY ENCLOSURES PROVIDING ADEQUATE CLEARANCES AND FULL VIEW OF ASSEMBLY SHALL BE PERMITTED.
11. LANDSCAPING OR CONSTRUCTION AROUND ASSEMBLY SHALL PERMIT AN UNOBSTRUCTED VIEW FROM AT LEAST ONE PUBLIC VANTAGE POINT.
12. FINAL INSPECTION AND ACCEPTANCE TEST SHALL BE PROVIDED BY DISTRICT BACKFLOW INSPECTOR.
13. NO CONNECTIONS OR TEES ARE PERMITTED BETWEEN METER AND BACKFLOW PREVENTER.
14. SIZES 3" AND LARGER SHALL HAVE ADDITIONAL PIPE SUPPORT.
15. SIZES 3/4" THROUGH 2" SHALL HAVE (1) UNION PLACED ON DOWNSTREAM CUSTOMER PIPING.
16. BACKFLOW ASSEMBLY TO BE THE SAME SIZE OR ONE SIZE LARGER THAN METER.
17. MATERIALS SHALL BE SELECTED FROM THE ACCEPTED MATERIALS GUIDELINE.
18. BRASS PLUGS ARE TO BE USED.

ITEM	DESCRIPTION
①	ACCEPTED BACKFLOW PREVENTION ASSEMBLY
②	BALL VALVE (CUSTOMER SERVICE VALVE)
③	SERVICE METER
④	WATER MAIN

REVISION	BY	APPR	DATE

**BACKFLOW PREVENTION  
 ASSEMBLY ABOVE GROUND  
 INSTALLATION**

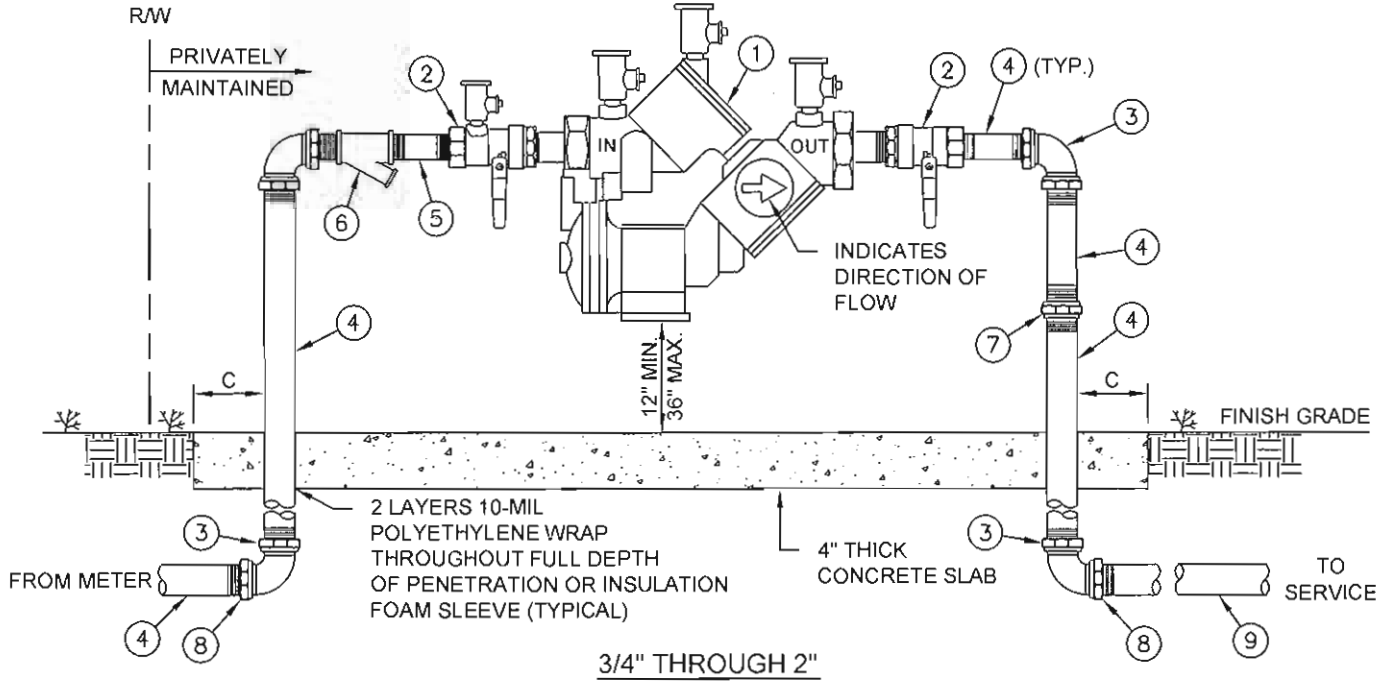
STD. DWG. NO.  
**W-21a**  
 1 OF 3



ADEQUATE CLEARANCE MUST BE PROVIDED TO PERMIT TESTING AND REPAIR WORK

MINIMUM CLEARANCE			
SIZE	A	B	C
1"-3"	12"	18"	12"
4"& UP	24"	24"	12"

REQUIRED MIN. 2 FEET CLEARANCE WITH BLOCK WALL



**NOTES:**

1. BOTTOM OF UNIT SHALL BE NO LESS THAN 12-INCHES AND NO MORE THAN 36-INCHES ABOVE FINISH GRADE OF THE SURROUNDING GROUND.
2. THE DEVICE MUST BE INSPECTED AND TESTED IMMEDIATELY AFTER INSTALLATION. CONTACT DISTRICT FOR INSPECTION & TESTING.
3. CONCRETE THRUST BLOCK AND/OR ABOVE GROUND SLAB REQUIRE INSPECTION BEFORE CONCRETE IS POURED.
4. MATERIALS SHALL BE SELECTED FROM THE ACCEPTED MATERIALS GUIDELINE.
5. USE ONLY TEFLON TAPE FOR PIPE THREADS.
6. PIPING SHALL BE PAINTED BLUE FOR POTABLE WATER AND PURPLE FOR RECYCLED WATER.
7. BRASS PLUGS ARE TO BE USED.

ITEM	EACH	DESCRIPTION	SPEC.	REMARKS
①	1	REDUCED PRESSURE PRINCIPLE BACKFLOW DEVICE	PER STANDARD TECHNICAL SPECIFICATIONS	MUST BE STATE & USC APPROVED TYPE
②	2	BALL VALVE	BRONZE INTERNAL	USC APPROVED (BALL VALVE)
③	4	90° ELBOW, BRASS OR COPPER	THREADED BRASS	COPPER TYPE L, HARD
④	2	RISER AND NIPPLES, BRASS OR COPPER	THREADED BRASS	WITH THREADED BRASS UNIONS
⑤	1	PRESSURE REDUCING AND/OR RELIEF VALVE	UPC APPROVED (BRONZE)	FOR PRESSURE IN EXCESS OF 80 PSI
⑥	1	WYE-STRAINER (VERTICAL OR HORIZONTAL)	UPC APPROVED (BRONZE)	UPSTREAM OF P.R.V. AND R.V.
⑦	1	THREADED BRASS UNION OR COPPER UNION		
⑧	2	BRASS OR COPPER MALE ADAPTOR		FEMALE THREADED x MALE SLIP
⑨	1	P.V.C. PIPING		SCHEDULE AS REQUIRED

REVISION	BY	APPR	DATE

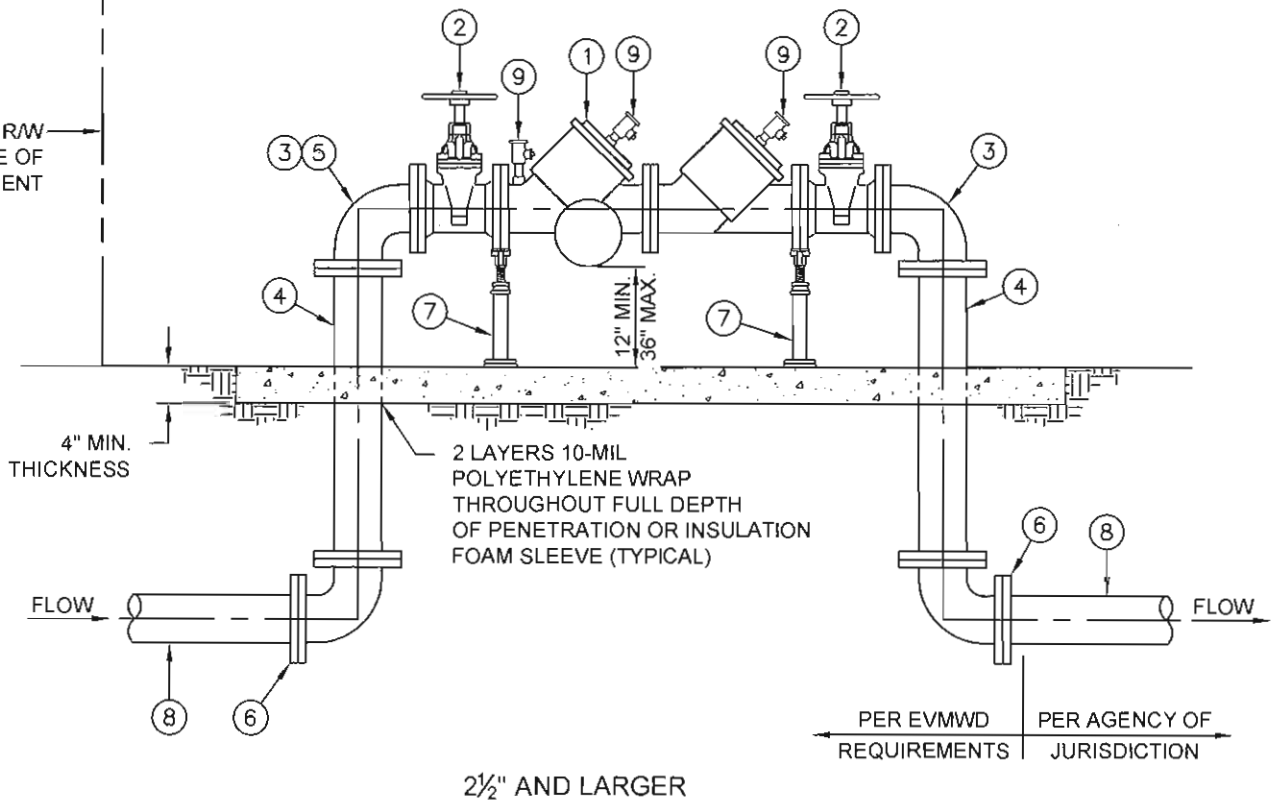
**EVMSD**  
 Elsinore Valley Municipal Water District  
*Paul S. Carver* 11/7/12  
 Paul S. Carver R.C.E. 31516 DATE

**BACKFLOW PREVENTION  
 ASSEMBLY (3/4" THROUGH 2")  
 ABOVE GROUND INSTALLATION**

STD. DWG. NO.  
**W-21b**  
 2 OF 3

PIPELINE SUPPLY CO. CT  
 PRIVATELY MAINTAINED

P/L, R/W OR EDGE OF EASEMENT



**NOTES:**

1. PLACE BOTTOM OF UNIT A MINIMUM OF 12-INCHES AND NOT MORE THAN 36-INCHES ABOVE FINISH GRADE OF THE SURROUNDING GROUND.
2. THE DEVICE MUST BE INSPECTED AND TESTED IMMEDIATELY AFTER INSTALLATION. CONTACT DISTRICT FOR INSPECTION & TESTING.
3. CONCRETE THRUST BLOCK AND/OR ABOVE GROUND SLAB REQUIRE INSPECTION BEFORE CONCRETE IS POURED. CONCRETE SLAB DIMENSION SHALL BE IN ACCORDANCE WITH CLEARANCE REQUIREMENTS ON W-21 SHEET 2 OF 3.
4. MATERIALS SHALL BE SELECTED FROM THE ACCEPTED MATERIALS GUIDELINE.
5. PIPING SHALL BE PAINTED BLUE FOR POTABLE WATER AND PURPLE FOR RECYCLED WATER.

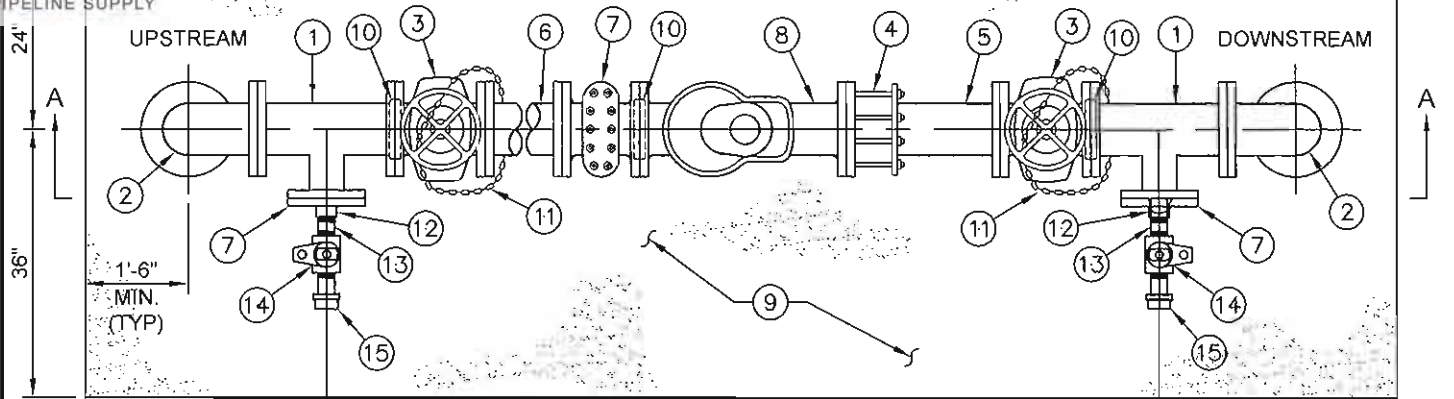
ITEM	EACH	DESCRIPTION	SPEC.	REMARKS
①	1	REDUCED PRESSURE PRINCIPLE BACKFLOW DEVICE	PER STANDARD TECHNICAL SPECIFICATIONS	MUST BE STATE & USC APPROVED TYPE
②	2	FLANGED RESILIENT WEDGE GATE VALVE	PER STANDARD TECHNICAL SPECIFICATIONS	SEE ACCEPTED MATERIALS GUIDELINE
③	2	90° ELBOW	PER STANDARD TECHNICAL SPECIFICATIONS	DUCTILE IRON
④	2	FLANGED RISER PIPE	PER STANDARD TECHNICAL SPECIFICATIONS	DUCTILE IRON
⑤	1	ANGLE PRESSURE REDUCING VALVE	SEE ACCEPTED MATERIALS GUIDELINE	FOR PRESSURE IN EXCESS OF 100 PSI
⑥	2	FLG x FLG 90° ELBOW	PER STANDARD TECHNICAL SPECIFICATIONS	DUCTILE IRON
⑦	2	ADJUSTABLE PIPE SUPPORT	SEE ACCEPTED MATERIALS GUIDELINE	
⑧	L.F.	P.V.C. OR DUCTILE IRON PIPING	PER STANDARD TECHNICAL SPECIFICATIONS	SIZE AS REQUIRED
⑨	3	BRASS PLUGS		AS REQUIRED BY DISTRICT

REVISION	BY	APPR	DATE

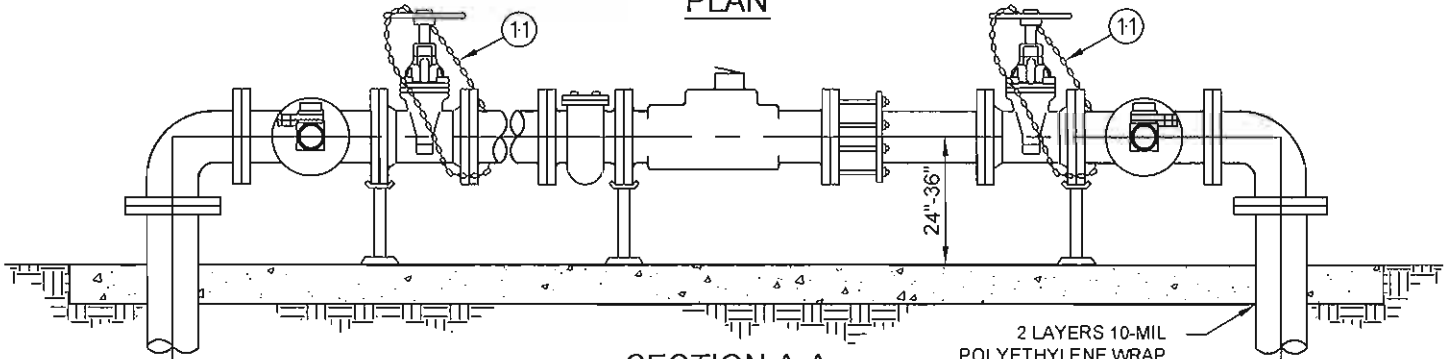
  
 Elsinore Valley Municipal Water District  
*Paul S. Carver* 11/7/12  
 Paul S. Carver R.C.E. 31516 DATE

**BACKFLOW PREVENTION  
 ASSEMBLY (2 1/2" AND LARGER)  
 ABOVE GROUND INSTALLATION**

STD. DWG. NO.  
**W-21c**  
 3 OF 3



**PLAN**



**SECTION A-A**

2 LAYERS 10-MIL  
 POLYETHYLENE WRAP  
 THROUGHOUT FULL DEPTH  
 OF PENETRATION OR INSULATION  
 FOAM SLEEVE (TYPICAL)

**NOTES:**

1. METER SHALL BE INSTALLED IN THE HORIZONTAL PLANE.
2. VALVES IMMEDIATELY UPSTREAM OF THE METER SHALL BE FULL-OPEN BUTTERFLY OR RESILIENT WEDGE GATE VALVES, DEPENDING ON WATER MAIN SIZE.
3. FOR PROTECTION OF THE METER FROM DEBRIS AND TO CONTAIN INCOMING FLOWS FROM UPSTREAM DISTURBANCES, A STRAINER SHALL BE INSTALLED IMMEDIATELY UPSTREAM OF THE METER.
4. APPURTENANCES, FITTINGS, ETC. (EXCEPTING STRAINER) SHALL NOT BE INSTALLED WITH LESS THAN THE UPSTREAM AND DOWNSTREAM CLEARANCES SHOWN BELOW.

METER TYPE	DIA. UPSTREAM	DIA. DOWNSTREAM
COMPOUND	2 1/2	2 1/2 (12" MIN.)
TUBE, SADDLE	5	2 1/2 (12" MIN.)
TURBO	2 1/2	2 1/2 (12" MIN.)

5. MATERIALS SHALL BE SELECTED FROM THE ACCEPTED MATERIALS GUIDELINE AND SHALL BE PAINTED "SAFETY BLUE" FOR POTABLE WATER AND "PANTONE" PURPLE FOR RECYCLED WATER.

ITEM	DESCRIPTION	SPEC.	REMARKS
①	FL D.I. REDUCING TEE	PER STANDARD TECHNICAL SPECIFICATIONS	
②	FL x FL D.I. 90° BEND	PER STANDARD TECHNICAL SPECIFICATIONS	
③	FL X FL RESILIENT WEDGE GATE VALVE OR BUTTERFLY VALVE	PER STANDARD TECHNICAL SPECIFICATIONS	
④	FLANGE COUPLING ADAPTER	PER STANDARD TECHNICAL SPECIFICATIONS	
⑤	FL x PLAIN END D.I. SPOOL	PER STANDARD TECHNICAL SPECIFICATIONS	LENGTH AS REQUIRED
⑥	FL DUCTILE IRON SPOOL	PER STANDARD TECHNICAL SPECIFICATIONS	LENGTH AS REQUIRED (1' MIN.)
⑦	FLANGE x 2" F.I.P. HOLE		
⑧	WATER METER	AS APPROVED BY DISTRICT	DISTRICT TO SUPPLY
⑨	4" MINIMUM THICKNESS CONCRETE PAD (5' WIDE)	PER STANDARD TECHNICAL SPECIFICATIONS	
⑩	PIPE SUPPORTS		
⑪	1 3/8" ZINC PLATED CHAIN	LENGTH AS REQUIRED	TO SECURE VALVE
⑫	2" HALF COUPLING, 3000# FS N.P.T	PER STANDARD TECHNICAL SPECIFICATIONS	
⑬	2" M.I.P. NIPPLE	PER STANDARD TECHNICAL SPECIFICATIONS	
⑭	2" BALL VALVE F.I.P. WITH LOCKING RINGS	PER STANDARD TECHNICAL SPECIFICATIONS	TO SECURE VALVE
⑮	2" M.I.P. x 2 1/2" NST BRASS NIPPLE		CONN. TO FIRE HOSE BYPASS

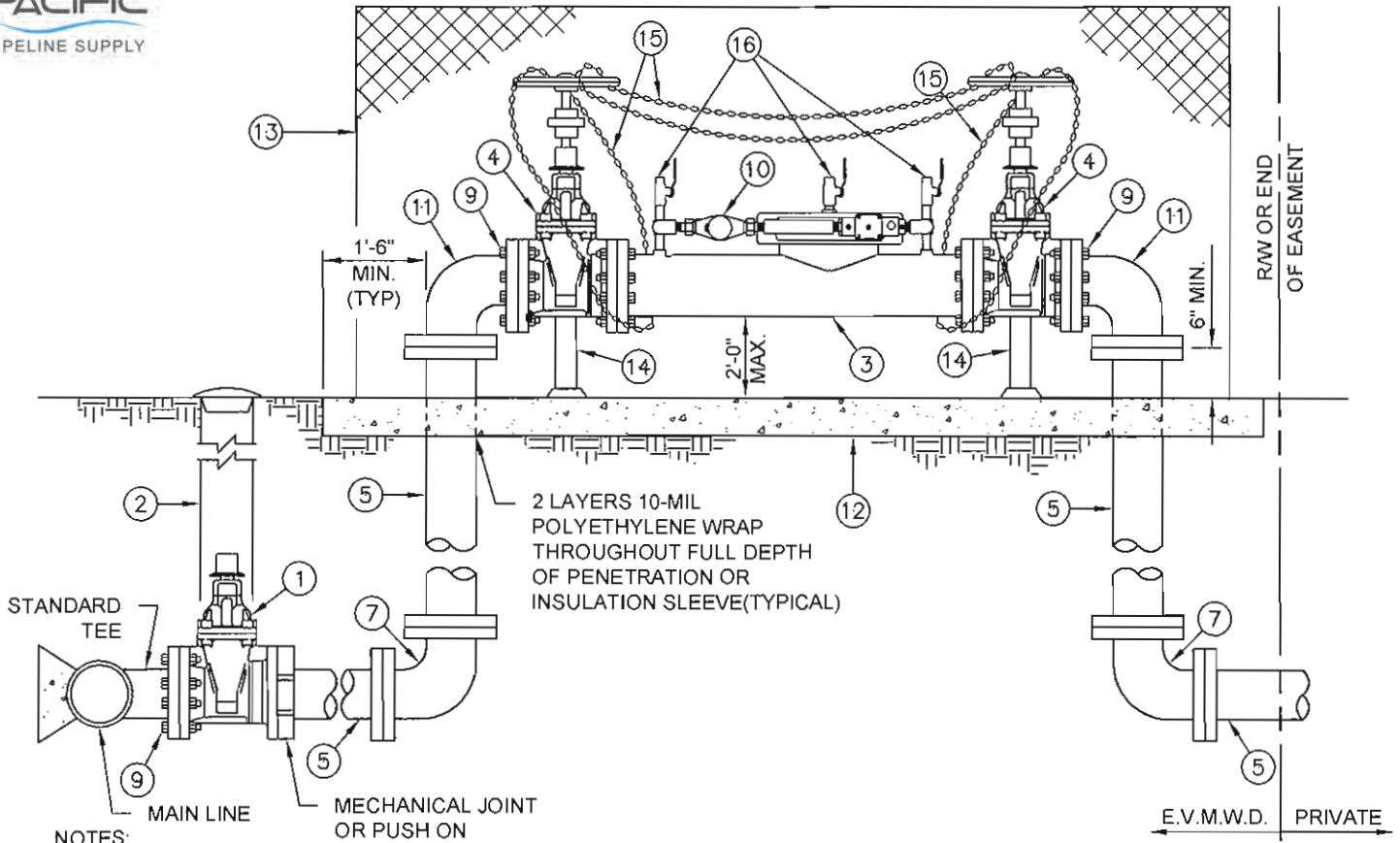
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**EVMWD**  
 Elsinore Valley Municipal Water District  
*Paul S. Carver* 11/7/12  
 Paul S. Carver R.C.E. 31516 DATE

**LARGE METER INSTALLATION  
 (3" AND LARGER)**

STD. DWG. NO.

**W-22**



**NOTES:**

1. ITEM 11, G.V. REQUIRED IF SERVICE LINES ARE CONNECTED BEFORE THE DETECTOR CHECK ASSEMBLY.
2. RESTRAINED CONNECTIONS FROM MAIN TO FIRST JOINT BEYOND OUTLET VALVE MINIMUM.
3. ABOVE GROUND INSTALLATION WHENEVER POSSIBLE (IN FENCED COMPOUND).
4. FIRE SERVICE SHALL BE INSTALLED IN A PUBLIC RIGHT-OF-WAY OR AN EASEMENT DEDICATED TO THE DISTRICT.
5. MATERIALS SHALL BE SELECTED FROM THE ACCEPTED MATERIALS GUIDELINE AND SHALL BE PAINTED RED PER STANDARD SPECIFICATIONS.

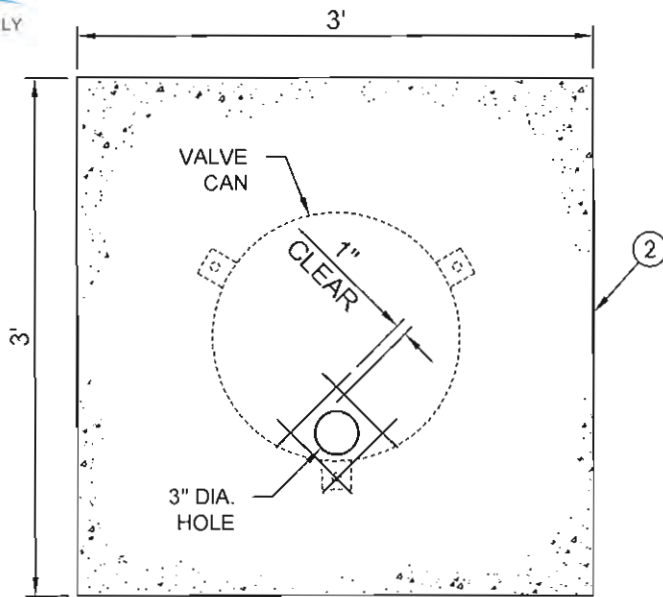
ITEM	EACH	DESCRIPTION	SPEC.	REMARKS
1	1	GATE VALVE RESILIENT WEDGE FLGxMJ OR P.O.	SEE STD. DWG. W-14 & W-15	BRONZE INTERNAL, NON-RISING RESILIENT WEDGE
2	1	8" VALVE WELL	STD. DWG. W-13	
3	2	DOUBLE DETECTOR CHECK 2" - 10"	PER STANDARD TECHNICAL SPECIFICATIONS	L.A. PATTERN
4	2	FLANGED OS&Y GATE VALVE RESILIENT WEDGE	BRONZE INTERNAL, RISING STEM	F.U. LAB APPROVED
5		DUCTILE IRON PIPE	PER STANDARD TECHNICAL SPECIFICATIONS	CLASS 150
6	1	SERVICE STUB	PER CUSTOMER REQUEST	
7	2	FLGxFLG 90° BEND	PER STANDARD TECHNICAL SPECIFICATIONS	
8	2	CONCRETE THRUST BLOCK		SIZE AS REQUIRED, SUBMIT
9		HEX. HEAD MACHINE BOLTS W/ NUTS & WASHERS	PER STANDARD TECHNICAL SPECIFICATIONS	APPLY ANTI-SEIZE COMPOUND
10	2	3/4" TO 2" BYPASS METER	DISTRICT APPROVED WITH ANGLE CHECK	DISTRICT TO SUPPLY
11	2	FLGxFLG 90° BEND	PER STANDARD TECHNICAL SPECIFICATIONS	
12	1	CONCRETE SLAB (4" THICK x 5' WIDE)		
13	1	ENCLOSURE (OPTIONAL)		
14	2	PIPE SUPPORT		
15		1 3/8" ZINC PLATED CHAIN	LENGTH AS REQUIRED	TO SECURE VALVE
16	3	BRASS PLUGS		

REVISION	BY	APPR	DATE

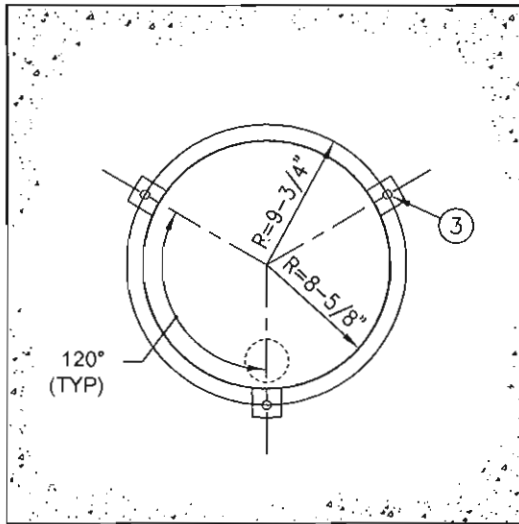
  
**Elsinore Valley Municipal Water District**  
*Paul S. Carver* 11/7/12  
 Paul S. Carver R.C.E. 31516 DATE

**FIRE DOUBLE DETECTOR CHECK METER INSTALLATION**

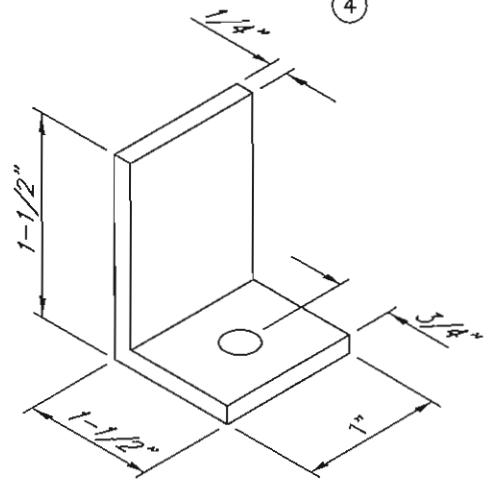
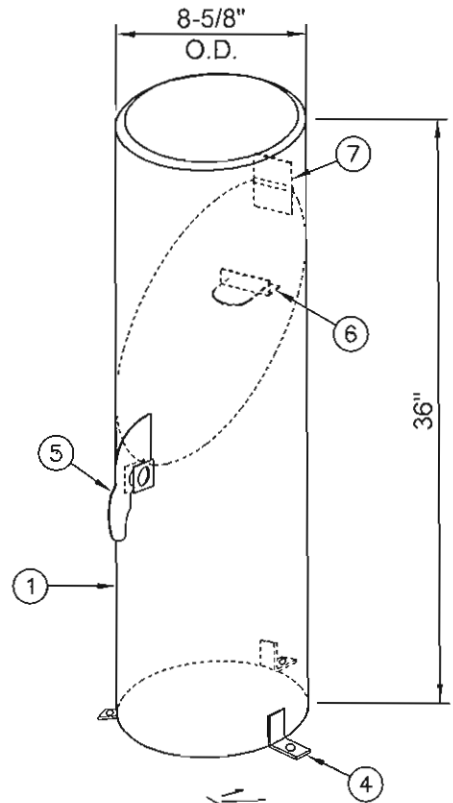
STD. DWG. NO.  
**W-23**



**CONCRETE PAD**



**VALVE CAN**




**CLIP DETAIL**

**NOTES:**

1. STEEL CAN SHALL BE 12 GAGE.
2. LEG MOUNTS SHALL HAVE 1/2" DIA. HOLES.
3. MATERIALS SHALL BE SELECTED FROM APPROVED MATERIALS LIST.
4. COLOR SHALL BE "SAFETY YELLOW" FOR POTABLE WATER AND PANTONE PURPLE FOR RECYCLED WATER.

ITEM	DESCRIPTION
①	SAMPLING POINT ENCLOSURE, POWDER COATED
②	CONCRETE PAD, 3'x3'x4"
③	1/2" DIA. STUDS, TYPICAL OF 3 PLACES ("REDHEAD" TYPE ANCHORS)
④	3 EACH 1/4" "L" CLIPS WITH 1/4" FILLET WELD AND 9/16" DIA. HOLE, SEE DETAIL HEREON
⑤	LOCK-ALIGNMENT LATCH
⑥	INSIDE MOUNT AND U-BOLT
⑦	HINGE

REVISION	BY	APPR	DATE

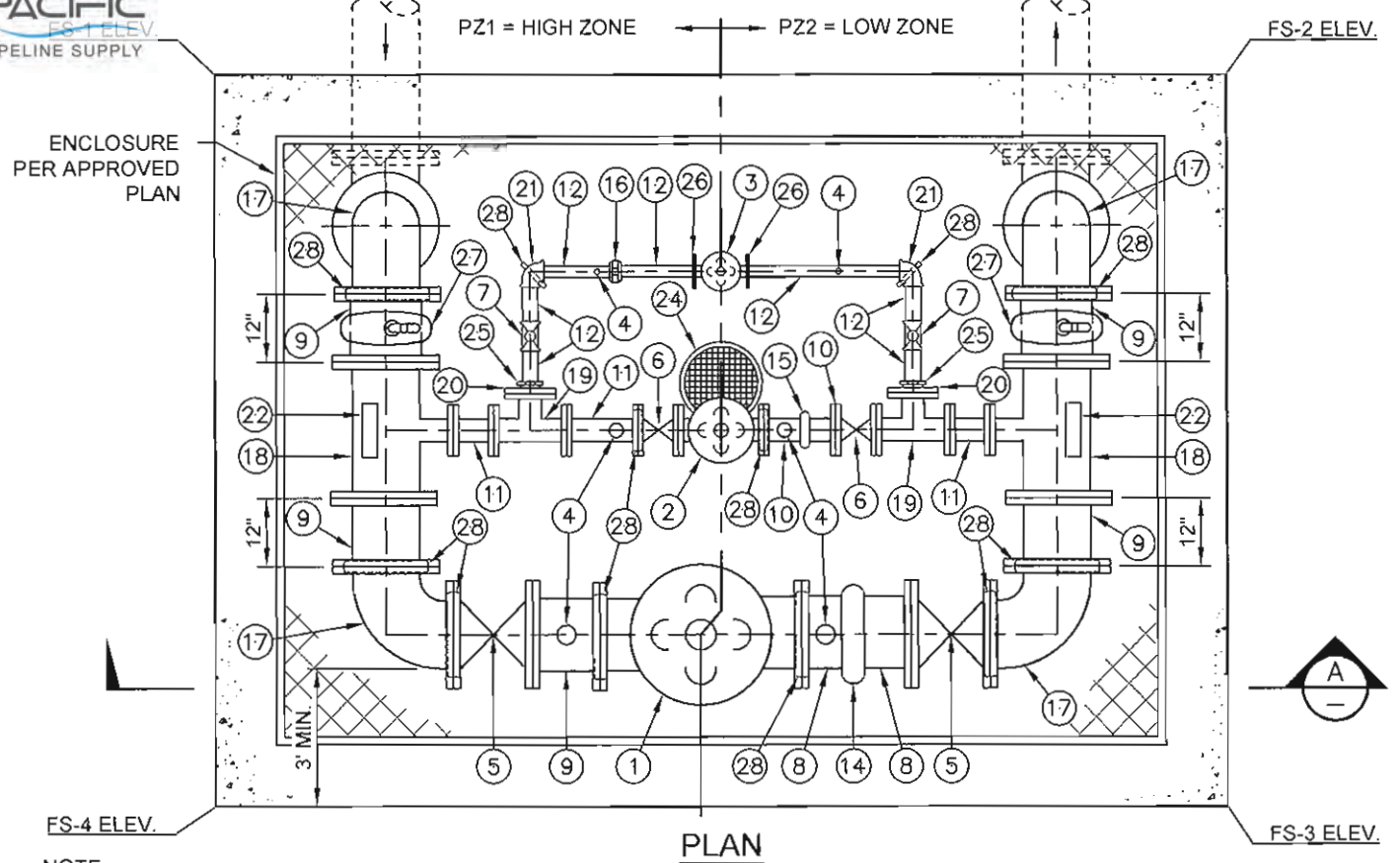
  
 Elsinore Valley Municipal Water District  
*Paul S. Carver* 11/7/12  
 Paul S. Carver R.C.E. 31516 DATE

**SAMPLING POINT COVER**

STD. DWG. NO.

**W-24**





**NOTE:**

1. CONTRACTOR SHALL CLEARLY AND PERMANENTLY LABEL THE PRESSURE ZONES ON THE INLET AND OUTLET PIPES. METHOD TO BE APPROVED BY THE E.V.M.W.D. INSPECTOR. USE 2" MIN. HIGH NUMERALS AND LETTERS.
2. MATERIALS SHALL BE SELECTED FROM THE APPROVED MATERIALS LIST.
3. FINISH SURFACE (FS) ELEVATIONS SHALL BE SHOWN ON THE PLANS.
4. PIPING SHALL BE PAINTED "SAFETY BLUE" FOR POTABLE WATER AND PANTONE PURPLE FOR RECYCLED WATER.
5. (D1) = LARGE DIA. (D2) = MEDIUM DIA. (D3) SMALL DIA.

ITEM	DESCRIPTION	ITEM	DESCRIPTION
(1)	(D1) PRESSURE REDUCER VALVE, FLG	(15)	(D2) VICTAULIC COUPLING, GROOVED
(2)	(D2) PRESSURE REDUCER VALVE, FLG	(16)	(D3) THREADED BRONZE UNION
(3)	(D3) PRESSURE REDUCER VALVE, FLG OR THREADED	(17)	(D1) 90° ELBOW
(4)	3-1/2" LIQUID FILLED PRESSURE GAUGE (0-160 PSI) ASSEMBLY	(18)	(D1) x (D2) FL D.I. TEE
(5)	(D1) GATE VALVE RESILIENT WEDGE TYPE	(19)	(D2) FL D.I. TEE
(6)	(D2) GATE VALVE RESILIENT WEDGE TYPE	(20)	(D2) D.I. BLIND FLANGE WITH THREADED OUTLET
(7)	(D3) BRONZE BALL VALVE	(21)	(D3) 90° BRONZE ELBOW
(8)	(D1) FL x GROOVED D.I. SPOOL (LENGTH AS REQ'D)	(22)	PRESSURE ZONE LABEL
(9)	(D1) FL x FL D.I. SPOOL	(23)	4" CONCRETE PAD OVER 12" AGGREGATE BASE
(10)	(D2) FL x GROOVED D.I. SPOOL (LENGTH AS REQ'D)	(24)	6" DRAIN GRATE AND ASSEMBLY
(11)	(D2) FL x FL D.I. SPOOL	(25)	INSULATING BUSHING
(12)	(D3) BRONZE PIPE WITH THREADED ENDS	(26)	FOR FLANGED PRV, (D3) BRONZE FLANGE
(13)	4" PVC SCH 40 DRAIN PIPE (SEE SECTION)	(27)	AUTOMATIC COMB. AIR RELEASE & VACUUM RELIEF VALVE
(14)	(D1) VICTAULIC COUPLING, GROOVED	(28)	PIPE SUPPORT

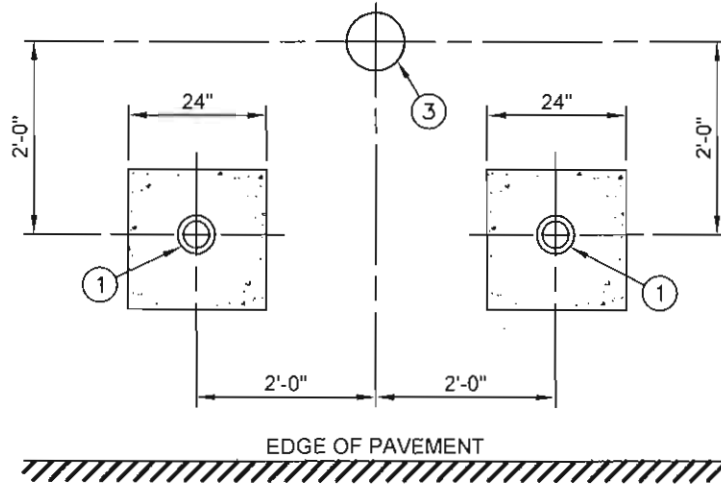
REVISION	BY	APPR	DATE

  
 Elsinore Valley Municipal Water District  
*Paul S. Carver* 11/2/12  
 Paul S. Carver R.C.E. 31518 DATE

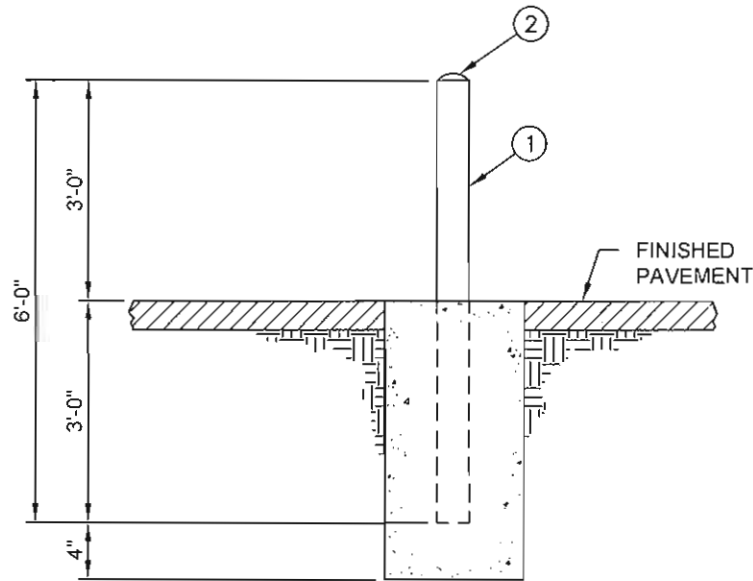
**P.R.V. STATION DETAIL**

STD. DWG. NO.  
**W-25a**  
 1 OF 2





PLAN



ELEVATION

NOTES:

1. FOR ABOVE GROUND FACILITIES ADJACENT TO STREETS WITHOUT CURB AND GUTTER PROTECTION.
2. GUARD POST SHALL BE PAINTED WITH RUSTOLEUM "FEDERAL SAFETY YELLOW" OR EQUAL.
3. MATERIALS SHALL BE SELECTED FROM THE ACCEPTED MATERIALS GUIDELINE.

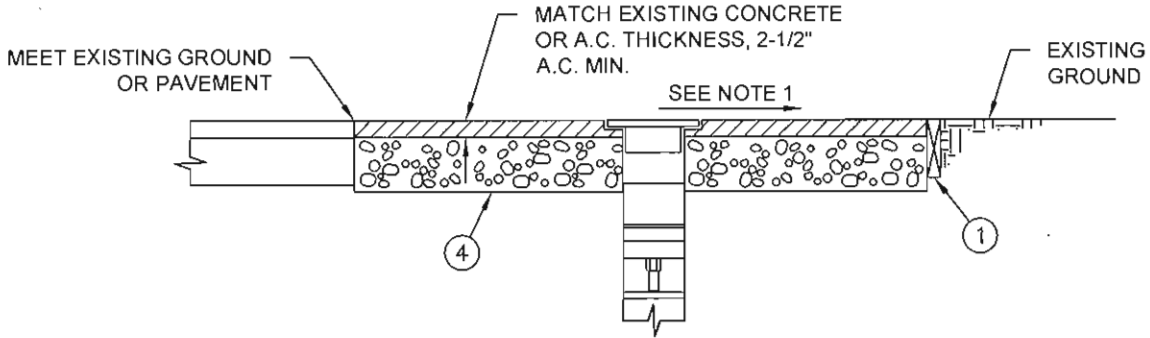
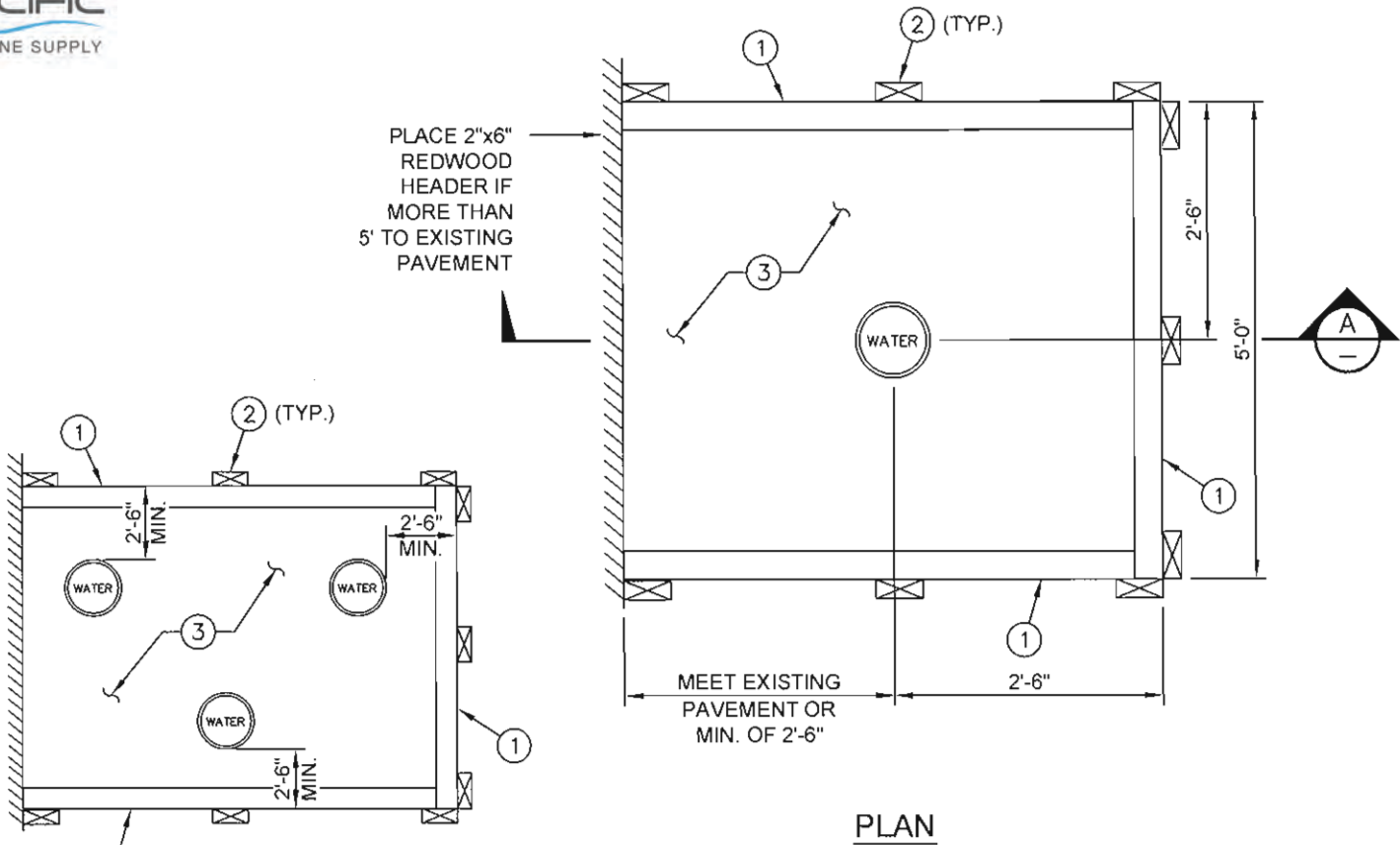
ITEM	DESCRIPTION
①	6" DIA. STD. STEEL PIPE GUARD POST, MORTAR FILLED
②	1/2" MIN. MORTAR CROWN
③	ABOVE GROUND FACILITY TO BE PROTECTED

REVISION	BY	APPR	DATE

  
 Elsinore Valley Municipal Water District  
*Paul S. Carver* 11/7/12  
 Paul S. Carver R.C.E. 31516 DATE

PERMANENT GUARD POST DETAIL

STD. DWG. NO.  
 W-26



**NOTES:**

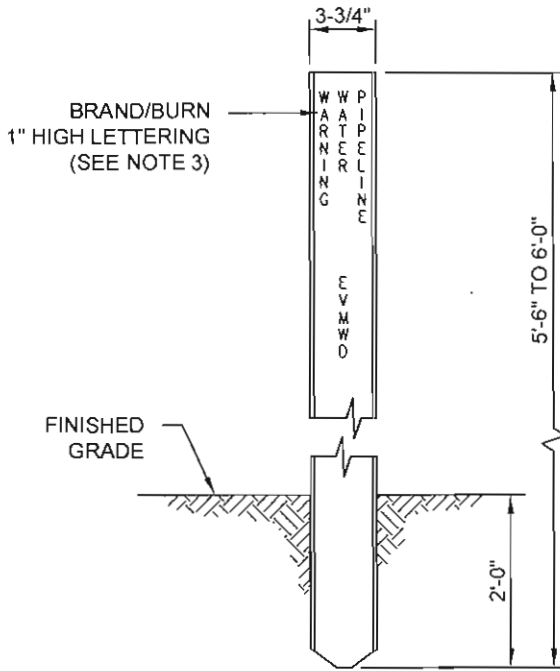
1. SLOPE WILL CONFORM TO RIVERSIDE COUNTY ROAD IMPROVEMENTS STANDARDS AND SPECIFICATIONS, OR MEET EXISTING CONDITIONS AS DIRECTED BY ENGINEER. PAD SHALL BE SLOPED AWAY FROM VALVE LID.
2. VALVES LOCATED IN LANDSCAPED AREAS SHALL HAVE A 2'x2' CONCRETE PAD INSTALLED.
3. MATERIALS SHALL BE SELECTED FROM THE ACCEPTED MATERIALS GUIDELINE.

ITEM	DESCRIPTION
①	2"x6" REDWOOD HEADERS IF REQUIRED BY ENGINEER OR AS DIRECTED
②	2"x4"x18" STAKES (3 PER SIDE) AT 30" O.C.
③	AREA TO BE PAVED
④	6" OF 3/4" CLASS 2 CRUSHED AGGREGATE BASE

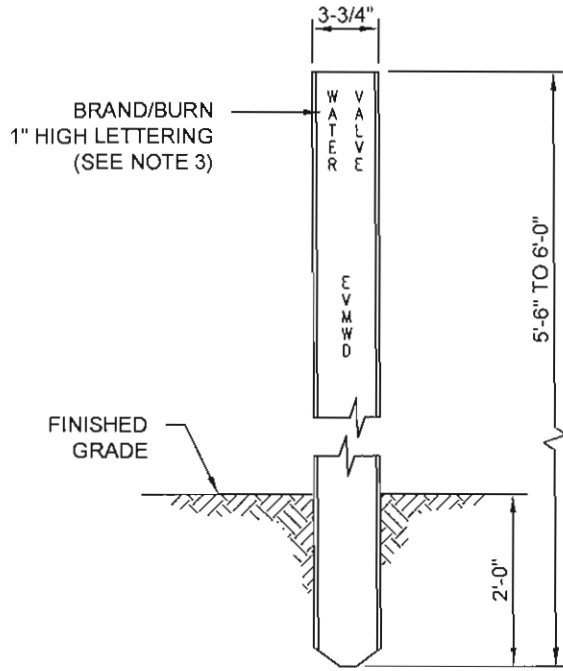
REVISION	BY	APPR	DATE

**PAVING DETAIL  
 AROUND VALVES  
 (NOT IN PAVEMENT)**

STD. DWG. NO.  
**W-27**



**MARKER POST  
 PIPELINE MARKER**



**MARKER POST  
 VALVE MARKER**

COLOR	MARKER POSTS USED FOR:
BLUE	POTABLE WATER MAINS
GREEN	SEWER MAINS
PURPLE	RECYCLED WATER MAINS
WHITE	GATE WELL

**UTILITY MARKER COLOR TABLE**

**NOTES:**

1. WATERLINE MARKER POST SHALL BE INSTALLED WHERE CALLED FOR ON THE PLANS OR AS DIRECTED BY THE ENGINEER. SPACING SHALL BE APPROXIMATELY 200' BETWEEN MARKERS. CURVED ALIGNMENTS LESS THAN 800' IN LENGTH SHALL HAVE A MINIMUM OF FOUR MARKERS TO DEFINE THE CURVE.
2. WATERLINE MARKER POST SHALL BE INSTALLED 12" TO THE SOUTH AND WEST OF THE UTILITY.
3. MARKER SHALL INCORPORATE 1" HIGH LETTERING BRANDED/BURNED INTO PADDLE. LETTERING SHALL INCLUDE EVMWD ALONG WITH THE UTILITY IDENTIFIED. THE COLOR OF THE PADDLE SHALL BE AS SHOWN IN THE TABLE ABOVE.
4. LETTERING SHALL BE WHITE FOR PIPELINES AND BLACK FOR GATE WELLS.

REVISION	BY	APPR	DATE

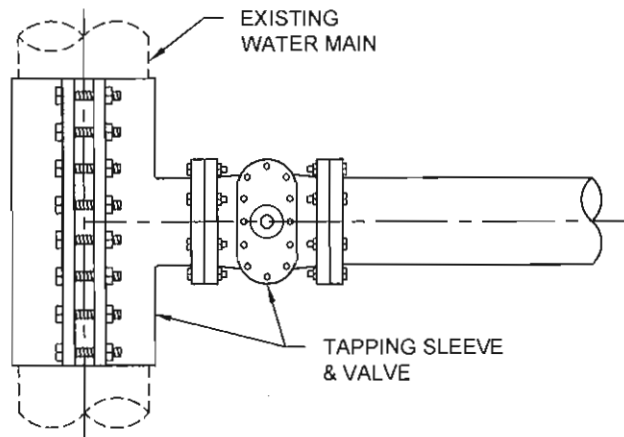


*Paul S. Carver* 11/7/12  
 Paul S. Carver R.C.E. 31518 DATE

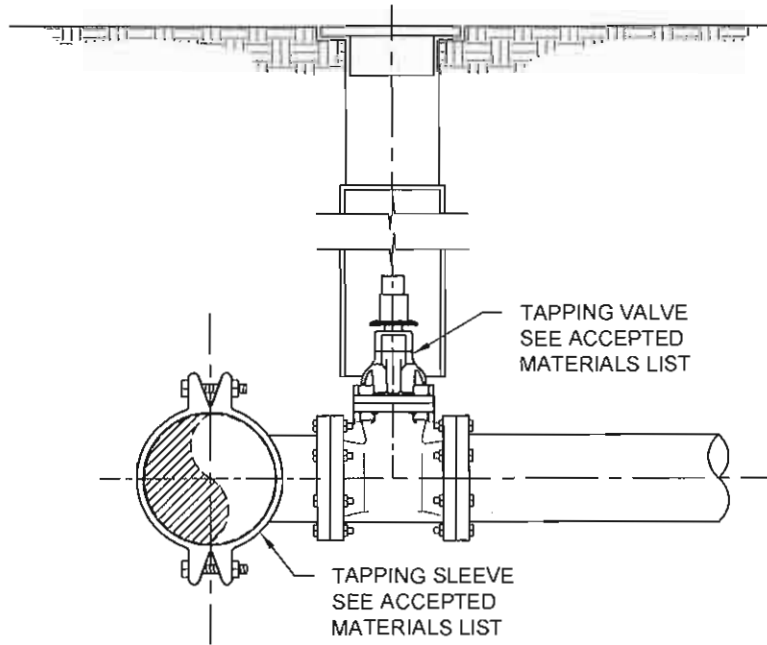
**PIPELINE MARKER POST  
 INSTALLATION**

STD. DWG. NO.

**W-28**



**PLAN**



**SIDE VIEW**

**NOTES:**

1. TAPPING SLEEVE TO BE STAINLESS STEEL PER ACCEPTED MATERIALS LIST.
2. TAPPING SLEEVE AND VALVE ARE TO BE COMPLETELY WRAPPED WITH 8 MIL POLYETHYLENE ENCASEMENT.
3. TAPPING SLEEVE SHALL BE TESTED AT A MINIMUM OF 150 PSI FOR A MINIMUM OF 15 MINUTES WITH NO VISIBLE LEAKAGE.
4. TAPPING SLEEVE SHALL HAVE A FULL LENGTH & WIDTH GASKET. O-RING GASKETS ARE NOT ACCEPTABLE.
5. DIAMETER OF THE HOT TAP SHALL NOT EXCEED 75% OF MAIN LINE DIAMETER.
6. HOT TAPPING MAY ONLY BE USED UPON WRITTEN AUTHORIZATION BY DISTRICT.
7. TAPPING VALVE SHALL HAVE A FLANGE INSULATION KIT BETWEEN DUCTILE IRON VALVE AND STAINLESS STEEL TAPPING SLEEVE

REVISION	BY	APPR	DATE

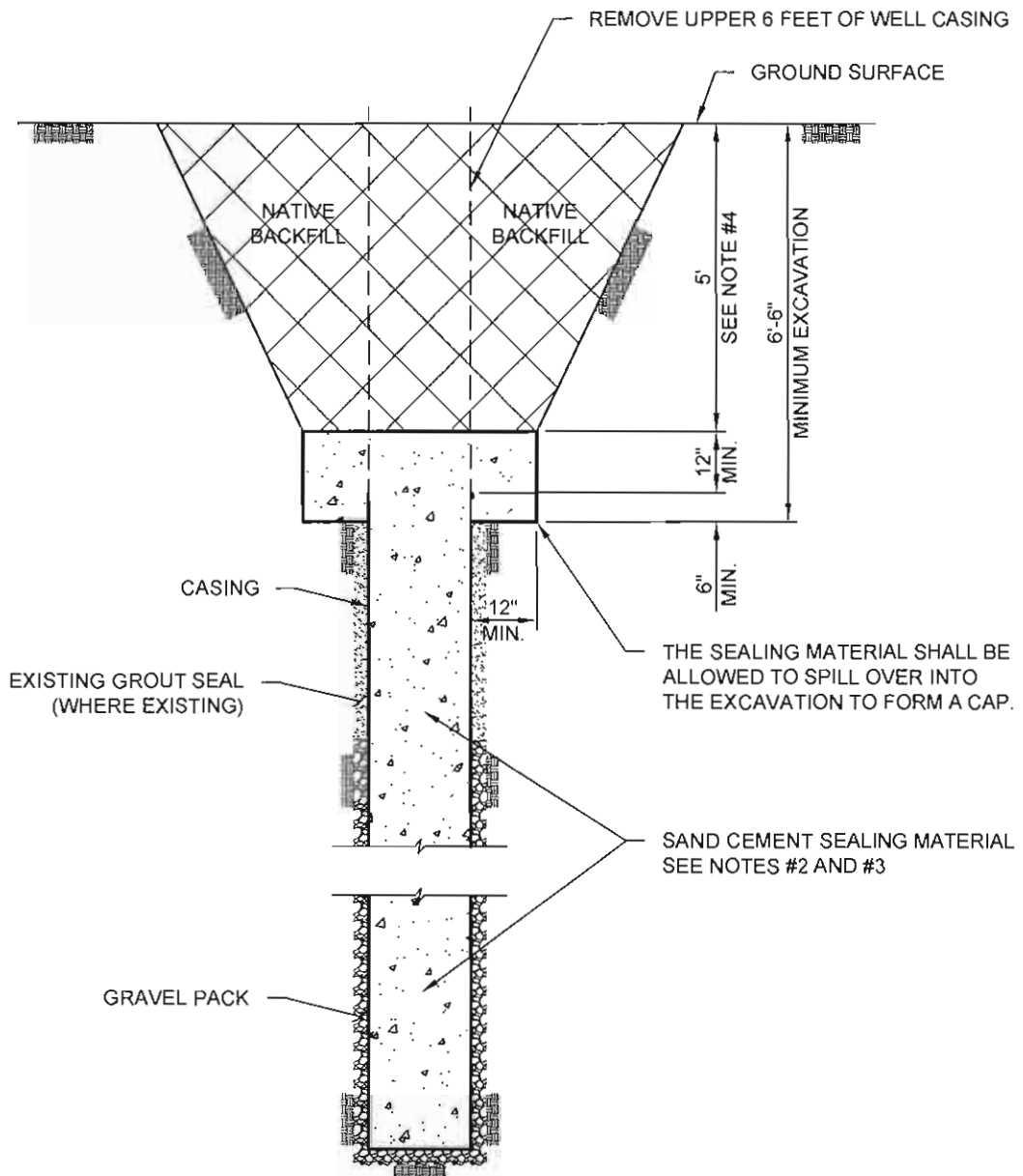


El Dorado Valley Municipal Water District  
*Paul S. Carver* 11/7/12  
 Paul S. Carver R.C.E. 31518 DATE

**TAPPING SLEEVE AND VALVE  
 DETAIL**

STD. DWG. NO.

**W-29**



**NOTE:**

1. THE WELL SHALL BE CLEANED, AS NEEDED, SO THAT ALL UNDESIRABLE MATERIALS, INCLUDING OBSTRUCTIONS TO FILLING AND SEALING DEBRIS, OIL FROM OIL-LUBRICATED PUMPS, OR POLLUTANTS AND CONTAMINANTS THAT COULD INTERFERE WITH WELL DESTRUCTION ARE REMOVED FOR DISPOSAL.
2. SAND-CEMENT SHALL BE MIXED AT A RATIO OF NOT MORE THAN 188 POUNDS OF SAND TO ONE 94 POUND SACK OF PORTLAND CEMENT (2 PARTS SAND TO 1 PART CEMENT, BY WEIGHT) AND ABOUT 7 GALLONS OF CLEAN WATER, WHERE TYPE I OR TYPE II PORTLAND CEMENT IS USED. THIS IS EQUIVALENT TO A "10.3 SACK MIX". LESS WATER SHALL BE USED IF LESS SAND THAN 2 PARTS SAND PER CEMENT BY WEIGHT IS USED. ADDITIONAL WATER MAY MAY BE REQUIRED WHEN SPECIAL ADDITIVES, SUCH AS BENONITE, OR "ACCELERATORS" OR "RETARDANTS" ARE USED.
3. SAND-CEMENT SHALL BE Poured IN ONE CONTINUOUS OPERATION UTILIZING A TERMIE.
4. BACKFILL AND COMPACT THE EXCAVATION ONLY AFTER SUFFICIENT TIME HAS BEEN ALLOWED FOR SEALING MATERIAL TO SET.

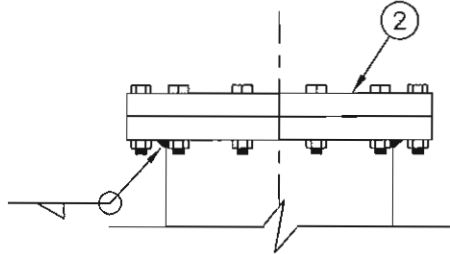
REVISION	BY	APPR	DATE

**EVMSD**  
 Elsinore Valley Municipal Water District  
*Paul S. Carver* 11/7/12  
 Paul S. Carver R.C.E. 31516 DATE

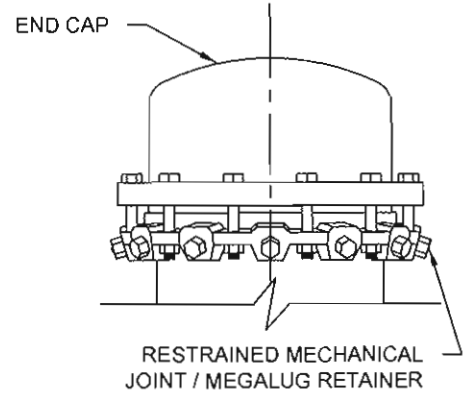
**WATER WELL  
 ABANDONMENT**

STD. DWG. NO.

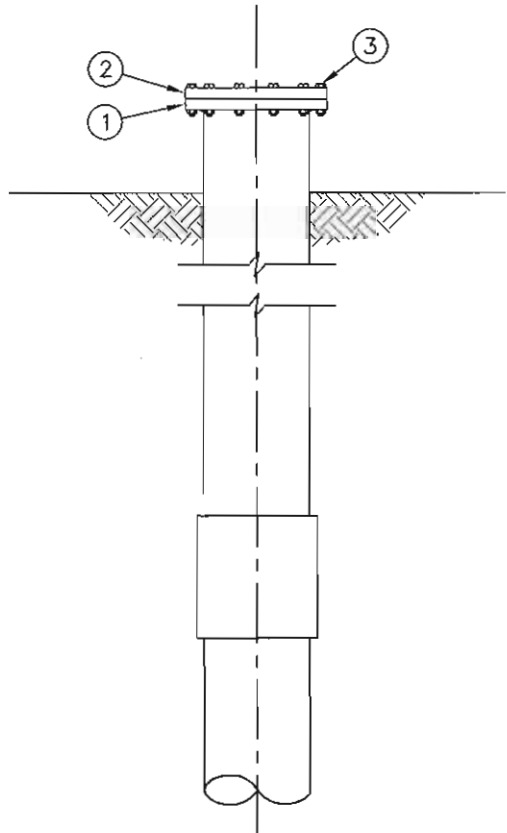
**W-30**



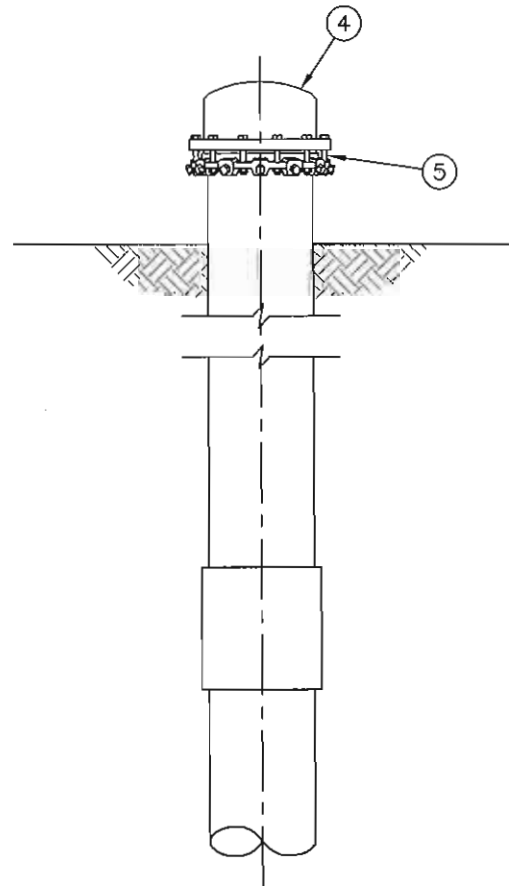
DETAIL



DETAIL



STEEL WELL CASING



DIP / PVC WELL CASING

ITEM	DESCRIPTION
①	IF CASING IS STEEL, WELD FLANGE, SEE DETAIL HEREON
②	BLIND FLANGE
③	BOLTS AND NUTS
④	IF CASING IS DIP OR PVC, INSTALL PVC WELL CAP, SEE DETAIL HEREON
⑤	MEGALUG RETAINER

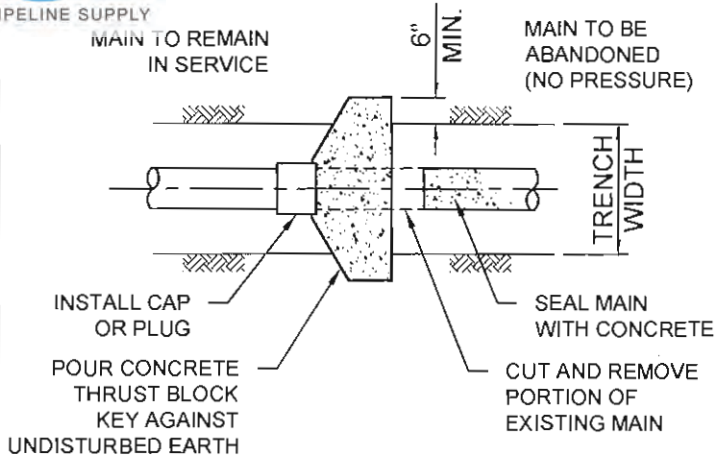
REVISION	BY	APPR	DATE

**EMWD**  
 El Dorado County Municipal Water District  
*Paul S. Carver* 11/21/12  
 Paul S. Carver R.C.E. 31516 DATE

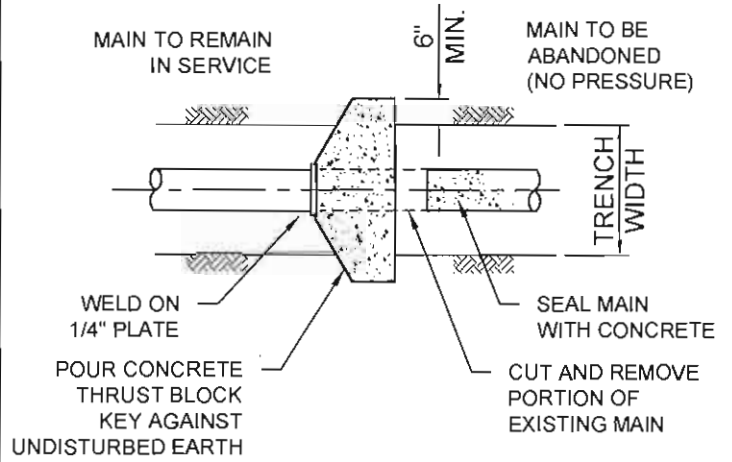
PRIVATE WATER WELL  
 CAP DETAIL

STD. DWG. NO.  
**W-31**

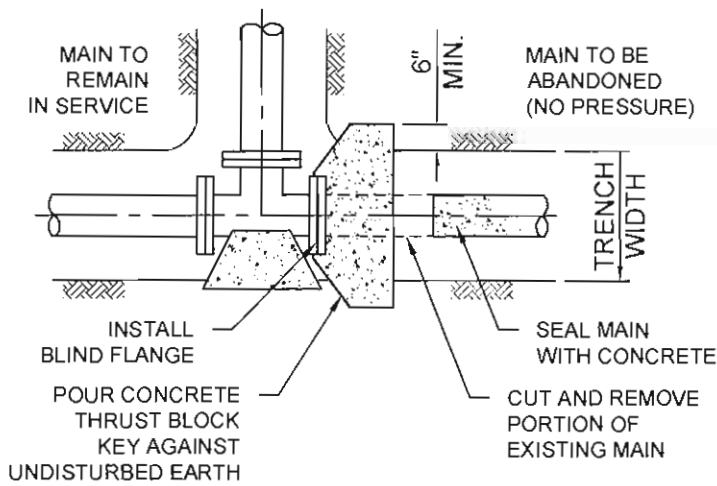




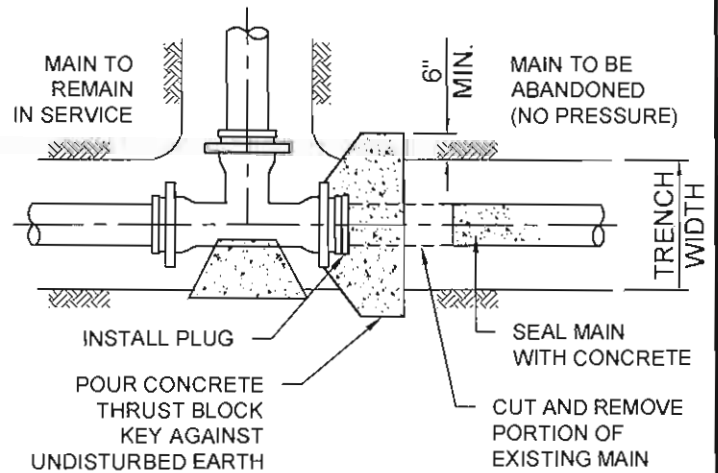
**CONDITION "A"**  
 EXISTING A.C., PVC OR C.I. MAINS



**CONDITION "B"**  
 EXISTING STEEL MAINS



**CONDITION "C"**  
 EXISTING FLANGED FITTING OR VALVE



**CONDITION "D"**  
 EXISTING HUB END FITTING OR VALVE

**NOTES:**

1. BEARING AREA AGAINST UNDISTURBED SOIL SHALL BE SAME AS FOR DEAD-ENDS.
2. WHEN CALLED OUT ON PLANS, INSTALL BLOW-OFF.
3. THRUST BLOCKS SHALL BE CLASS 560-C-3250 CONCRETE, UNLESS OTHERWISE SPECIFIED.
4. ALL BURIED BOLTS SHALL BE COATED WITH "DEVWRAP 142S".

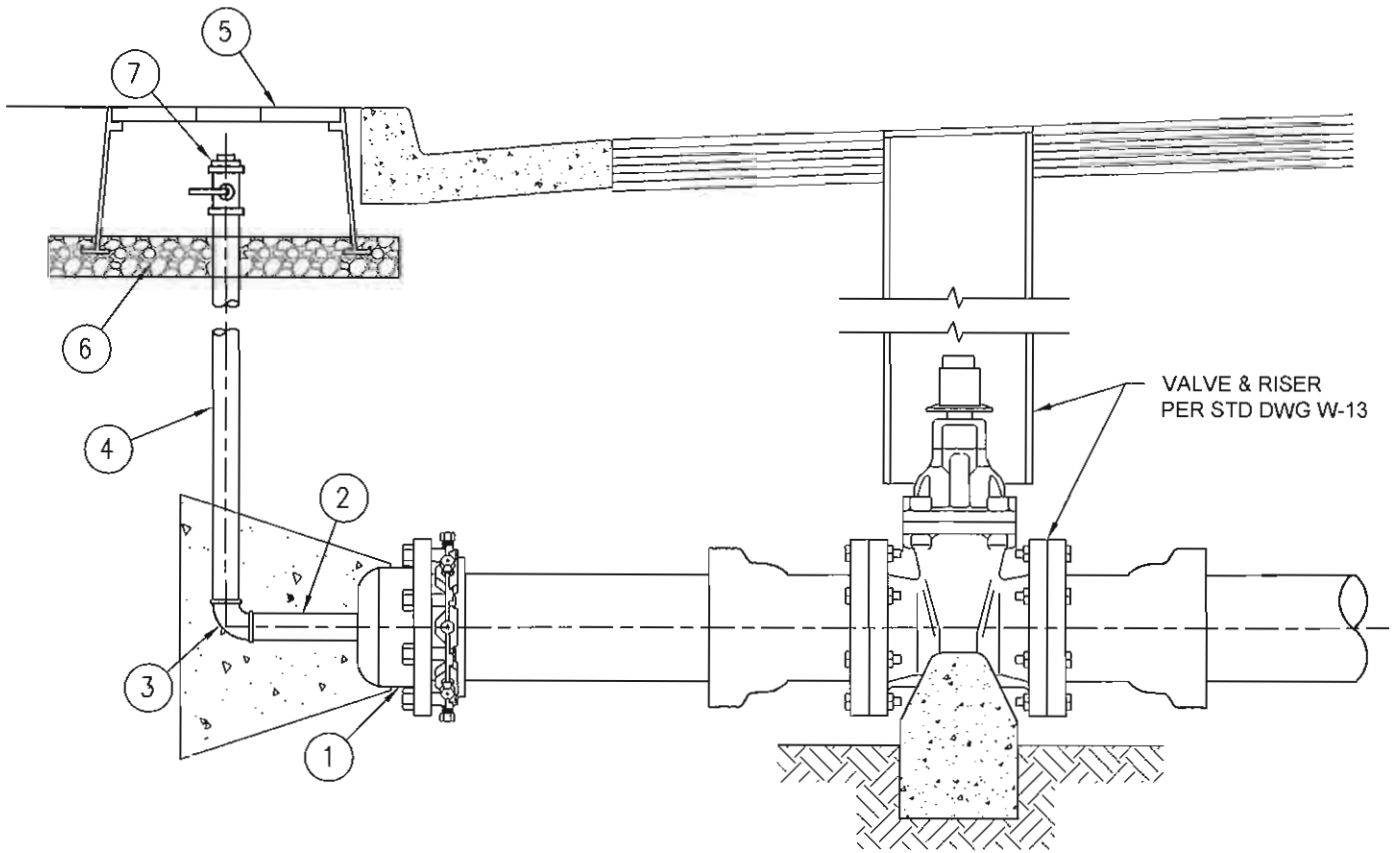
REVISION	BY	APPR	DATE

**EVMS**  
 Elmore Valley Municipal Water District  
*Paul S. Carver* 11/2/12  
 Paul S. Carver R.C.E. 31518 DATE

**CUTTING & PLUGGING  
 WATERMAINS**

STD. DWG. NO.

**W-32**




NOTES:

1. METER BOX FOR BALL VALVE TO BE LOCATED ADJACENT TO AND BEHIND CURB, UNLESS OTHERWISE NOTED ON PLANS.
2. IF END OF MAIN IS IN STREET, INSTALL 2" BRASS PIPE LEVEL TO BEHIND CURB. USE ADDITIONAL 2" 90° BRASS ELBOW.
3. WHEN BLOW-OFF IS LOCATED BEHIND A ROLLED CURB & GUTTER, OR WHERE NO CURB EXISTS USE TRAFFIC STYLE BOX AND LID.

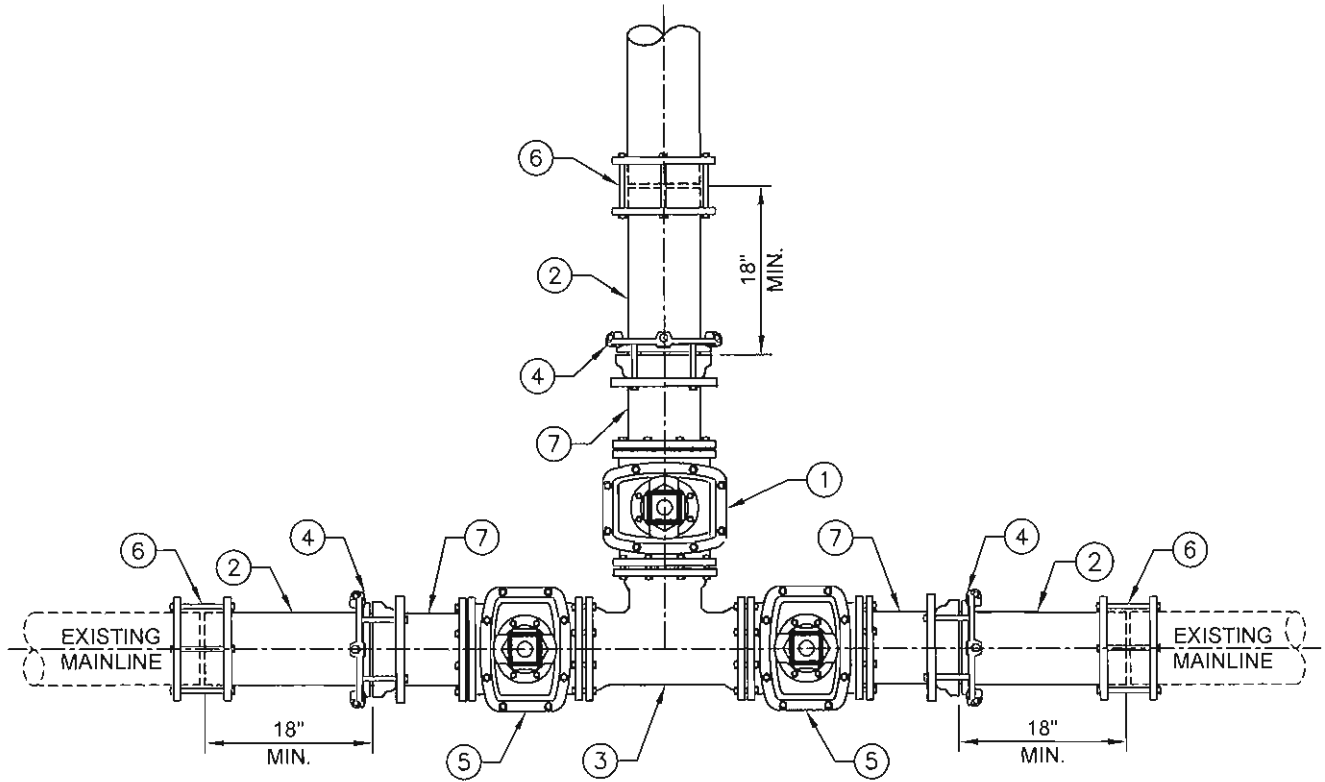
ITEM	DESCRIPTION
①	MAIN x 2" MJ TAPPED END CAP
②	2" x 6" BRASS NIPPLE
③	2" 90° BRASS ELBOW
④	2" BRASS PIPE
⑤	METER BOX PER STANDARD DETAIL W-11
⑥	2" BALL VALVE PER ACCEPTED MATERIALS GUIDELINE
⑦	2" BRASS PLUG

REVISION	BY	APPR	DATE

  
 Elsinore Valley Municipal Water District  
*Paul S. Carver* 11/7/12  
 Paul S. Carver R.C.E. 31516 DATE


**2" BLOW-OFF ASSEMBLY**

STD. DWG. NO.  
**W-33**



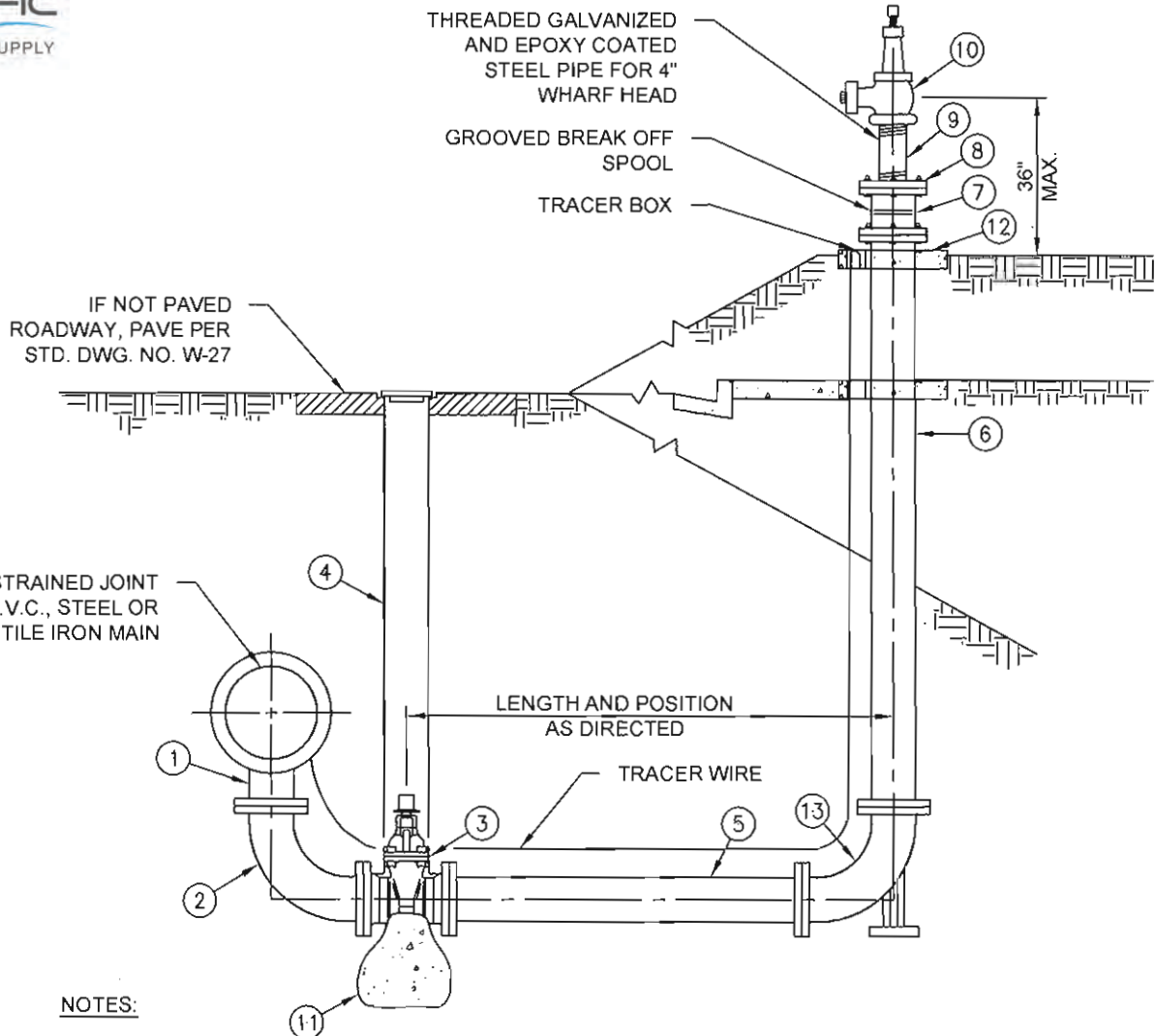
ITEM	DESCRIPTION
①	MJ GATE VALVE PER ACCEPTED MATERIALS GUIDELINE
②	C900 PVC PIPE PER ACCEPTED MATERIALS GUIDELINE
③	MJ DIP TEE PER ACCEPTED MATERIALS GUIDELINE
④	JOINT RESTRAINT ASSEMBLY PER ACCEPTED MATERIAL GUIDLINE
⑤	MJ GATE VALVE TO BE INSTALLED UNLESS OTHERWISE DIRECTED
⑥	FLEXIBLE COUPLING PER ACCEPTED MATERIALS GUIDELINE
⑦	FLANGE x MECHANICAL JOINT ADAPTER PER ACCEPTED MATERIALS GUIDELINE

REVISION	BY	APPR	DATE

  
**EVMWD**  
 Elsinore Valley Municipal Water District  
*Paul S. Carver* 11/7/12  
 Paul S. Carver R.C.E. 31516 DATE

CUT-IN TEE  
DETAIL

STD. DWG. NO.  
**W-34**



**NOTES:**

1. RESTRAINED JOINTS ARE REQUIRED.
2. BLOW-OFF (WHARF HEAD BODY) TO BE PAINTED "PANTONE PURPLE" DESCRIPTION

ITEM	EACH	DESCRIPTION	SPEC.	REMARKS
①	1	STD. 6" TEE BRANCH	D.I. FLG ON 6" BRANCH	SET VERTICALLY DOWN
②	1	6" 90° LONG RADIUS BEND	D.I. 6" LONG RADIUS, FLxFL	
③	1	6" GATE VALVE	SEE W-13 AND W-14	RESILIENT WEDGE, FLGxMJ/PO/FLG
④	1	8" VALVE WELL AND CAP	SEE W-13 (LABELED RECYCLED WATER)	PAINTED PANTONE PURPLE
⑤	1	6" PIPE BLOWOFF RUN	STD. DWG. W-7	RESTRAINED JOINT
⑥	1	6" STD. FIRE HYDRANT BURY	STD. DWG. W-7	6 HOLE FLG OR FLG x RESTRAINED MJ (VARIABLE HEIGHT)
⑦	1	6" GROOVED BREAK OFF SPOOL	6", 6 HOLE, FLxFL, SEE W-7	SPOOL ABOVE SURFACE, PAINTED, NUTS ON TOP OF FLANGE, DAMAGE 2 OPPOSITE FACING. THREADED ENDS TO ENSURE INABILITY OF REMOVAL
⑧	1	6"x4" COMPANION FLANGE	6", 6 HOLE, FLxFL	BLACK IRON COMPANION FLANGE, PAINTED
⑨	1	4" PIPE	GALVANIZED, 4" M.I.P. x M.I.P.	PAINTED PANTONE PURPLE
⑩	1	4" ANGLE FIRE PLUG VALVE	4" x 2 1/2" JAMES JONES J-344 H.P.	PAINTED PANTONE PURPLE (WHARF HEAD)
⑪	-	VALVE SUPPORT BLOCK	STD. DWG. W-15	
⑫	1	560 C3250 CONCRETE PAD	4'x4'x4"DEEP	
⑬	1	6" DIA. 90° BASE ELBOW, SHORT RADIUS	FLxFL OR FLxMJ	

REVISION	BY	APPR	DATE

**EMWD**  
 Elkhorn Valley Municipal Water District  
*Paul S. Carver* 11/7/12  
 Paul S. Carver R.C.E. 31518 DATE

**RECYCLED WATER BLOW-OFF  
 ASSEMBLY**

STD. DWG. NO.

**RW-1**

4"



8"

SHOWN: "DAS" CURB MARKER  
 PART NUMBER CM-EL SIN

SPECIFICATIONS

SIZE: 4"x8"

MATERIAL: "DURACAST" PLASTIC WITH NO-SLIP SURFACE.

COLOR: PURPLE (PANTONE 512) WITH WHITE LETTERS AND SYMBOL.

PLACEMENT: SURFACE MOUNT ON CONCRETE CURB OR SIDEWALK  
 USING ADHESIVE. FOLLOW MANUFACTURER'S SPECIFICATIONS  
 FOR APPLICATION OF ADHESIVE.

COATING: 1160 A ANTI-GRAFFITI FILM OR EQUAL.

REVISION	BY	APPR	DATE

**EVMWD**  
 Etowah Valley Municipal Water District  
*Paul S. Carver* 11/2/12  
 Paul S. Carver R.C.E. 31516 DATE

RECYCLED WATER SIGN  
 SPECIFICATIONS

STD. DWG. NO.

RW-2




ACTUAL SIZE

SHOWN: T. CHRISTY ENTERPRISES, INC.  
 PART #ID-MAX-P2RC007

SPECIFICATIONS:

1. THE TAG SHALL BE WEATHERPROOF PLASTIC 3"x4", RECYCLED WATER PURPLE COLOR WITH PERMANENT BLACK STAMPED LETTERING.
2. ADDITIONAL NUMBERING, SYMBOLS OR WORDING MAY BE USED WITH PRIOR WRITTEN APPROVAL. HOWEVER, THE ABOVE WORDING AND SYMBOL MUST BE USED.
3. THE TAG SHOULD BE ATTACHED TO THE VALVE STEM OR SOLENOID WIRE DIRECTLY, OR USING SELF-LOCKING PLASTIC TIE.

REVISION	BY	APPR	DATE

  
 Elsinore Valley Municipal Water District  
*Paul S. Carver* 11/7/12  
 Paul S. Carver R.C.E. 31516 DATE

RECYCLED WATER VALVE TAG  
 SPECIFICATION

STD. DWG. NO.

RW-3



MANUFACTURER: TRAFFIC CONTROL SYSTEMS

SPECIFICATIONS

SIZE: 18"x18" WITH STANDARD RADIUS CORNERS.

MATERIAL: 0.063 ALUMINUM WITH 3M ENG. GRADE REFLECTIVE SHEETING AND ANTI-GRAFFITI PROTECTIVE COATING.

COLOR: PURPLE (PANTONE 512) WITH WHITE LETTERS AND BLACK SYMBOL.

PLACEMENT: INSTALL AT A MINIMUM OF 7' FROM BOTTOM OF SIGN TO GRADE. INSTALL USING 2" SQ. METAL POSTS OR ATTACH TO LIGHT POSTS. FOLLOW ALL LOCAL CODES FOR SIGN PLACEMENT AND INSTALLATION.

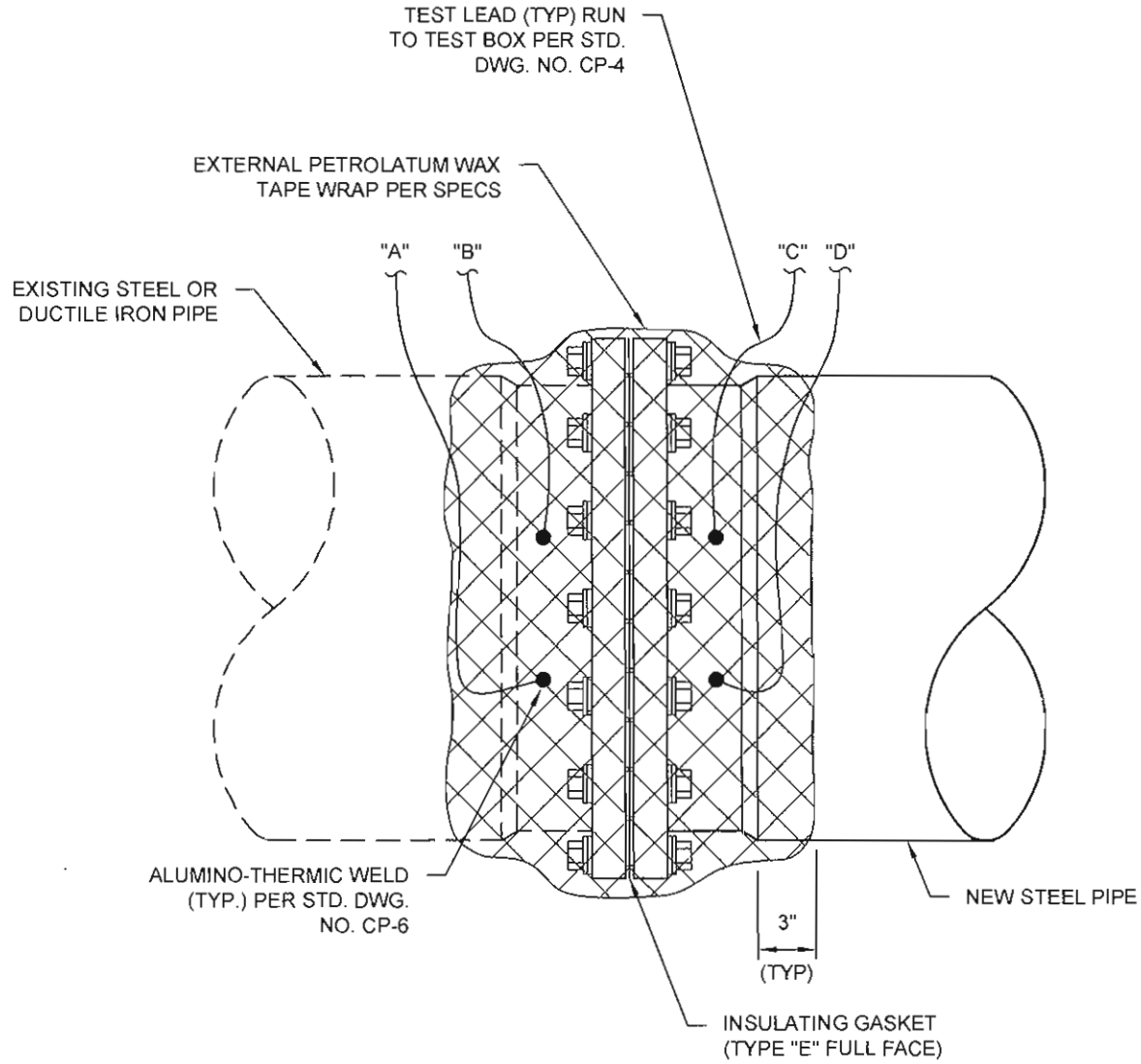
COATING: 1160 A ANTI-GRAFFITI FILM OR EQUAL.

REVISION	BY	APPR	DATE

**EVMWD**  
 Evanora Valley Municipal Water District  
*Paul S. Carver* 11/7/12  
 Paul S. Carver R.C.E. 31516 DATE

RECYCLED WATER SIGN  
 SPECIFICATIONS

STD. DWG. NO.  
 RW-4



**NOTES:**

1. FULL LENGTH INSULATING SLEEVES REQUIRED AT ALL THRU-FLANGE BOLTS OR STUDS. HALF LENGTH SLEEVES REQUIRED AT THREADED BOLT HOLES AT VALVE BONNET AND BASE.
2. NO TEST STATION REQUIRED ON BLOW-OFF INSULATORS.

REVISION	BY	APPR	DATE



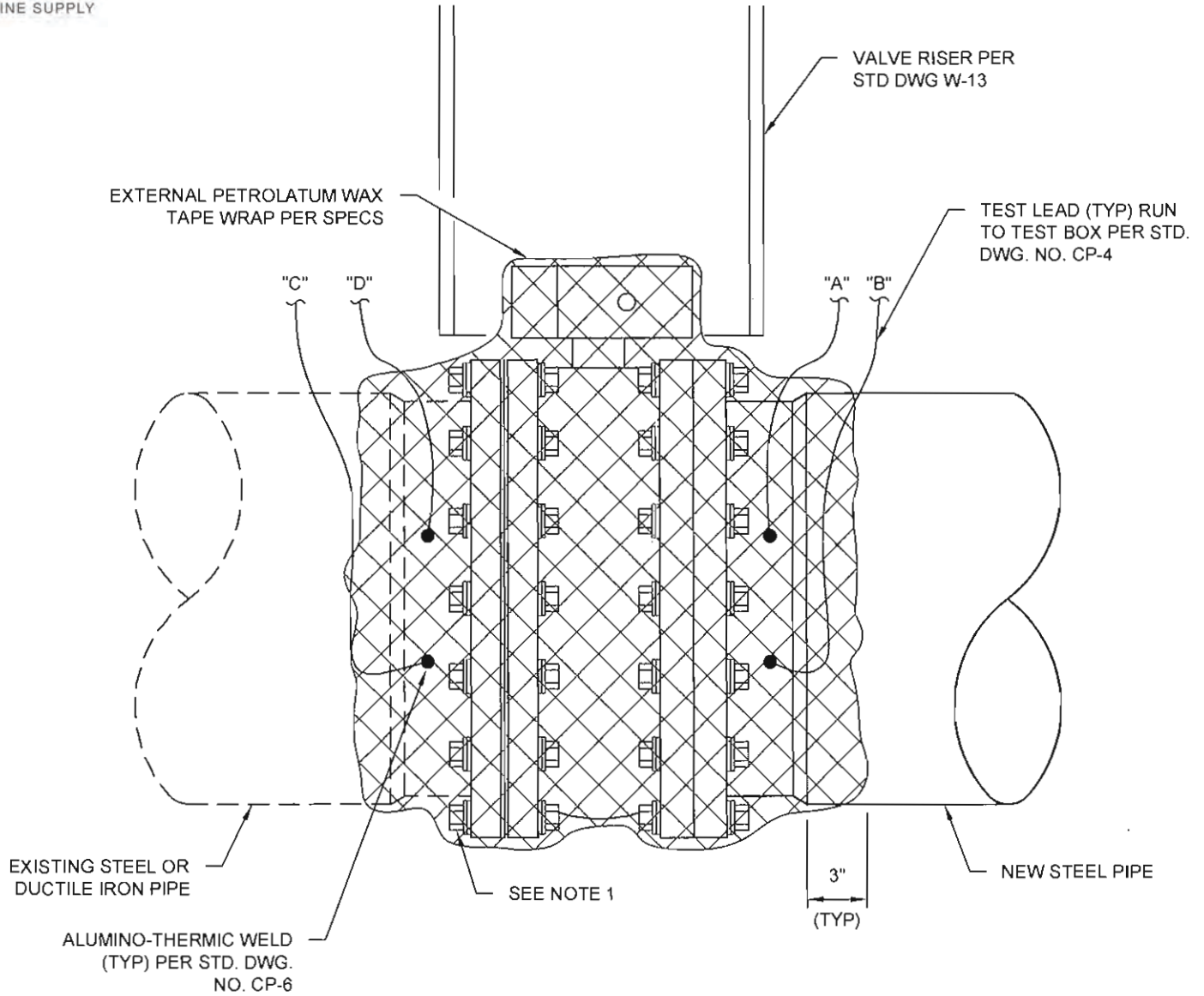
*Paul S. Carver* 11/2/12  
 Paul S. Carver R.C.E. 31516 DATE

**BURIED INSULATING FLANGE**

STD. DWG. NO.

**CP-1**





**NOTES:**

1. FULL LENGTH INSULATING SLEEVES REQUIRED AT ALL THRU-FLANGE BOLTS OR STUDS. HALF LENGTH SLEEVES REQUIRED AT THREADED BOLT HOLES AT VALVE BONNET AND BASE.
2. NO TEST STATION REQUIRED ON BLOW-OFF INSULATORS.

REVISION	BY	APPR	DATE

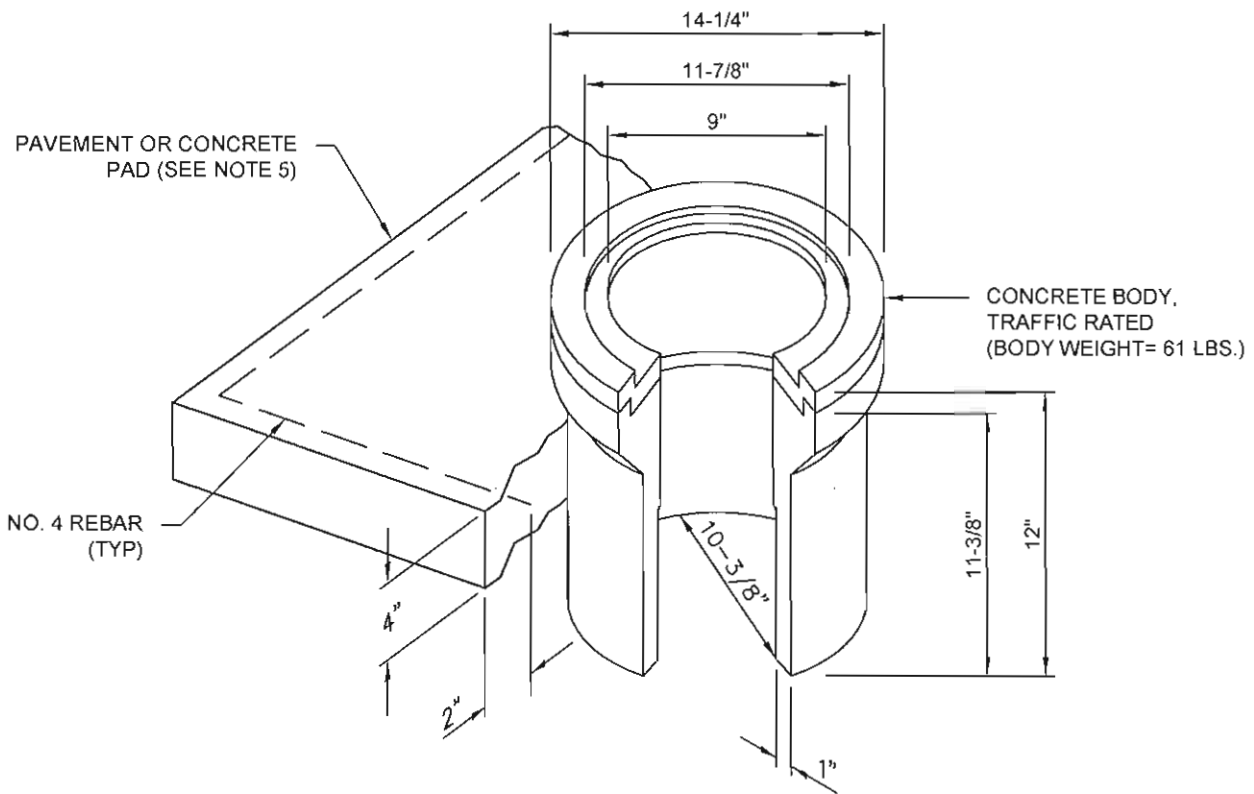
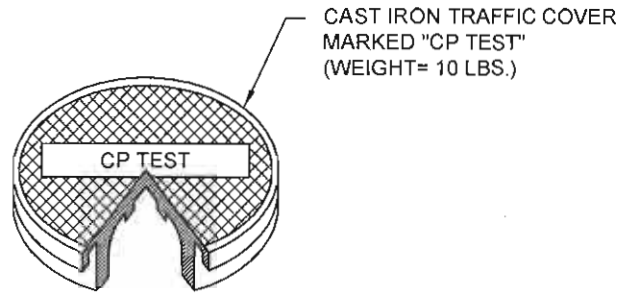


*Paul S. Carver* 11/7/12  
 Paul S. Carver R.C.E. 31516 OATE

**BURIED INSULATING FLANGE  
 AT VALVE**

STD. DWG. NO.


**CP-2**



**NOTES:**

1. CONCRETE BODY, OCCASIONAL TRAFFIC RATED - CHRISTY NO. G5.
2. ALL WIRES SHALL HAVE 18" MIN. SLACK IN BOX.
3. BOTTOM OF TEST BOX SHALL BE NATIVE SOIL. DO NOT PLACE ROCK, GRAVEL OR SAND IN TEST BOX.
4. TEST BOX SHALL BE LOCATED IN SIDEWALK STRIP.
5. PROVIDE 24"x24"x4" THICK REINFORCED SQUARE CONCRETE PAD AROUND TEST BOXES AT UNPAVED SITES.

REVISION	BY	APPR	DATE

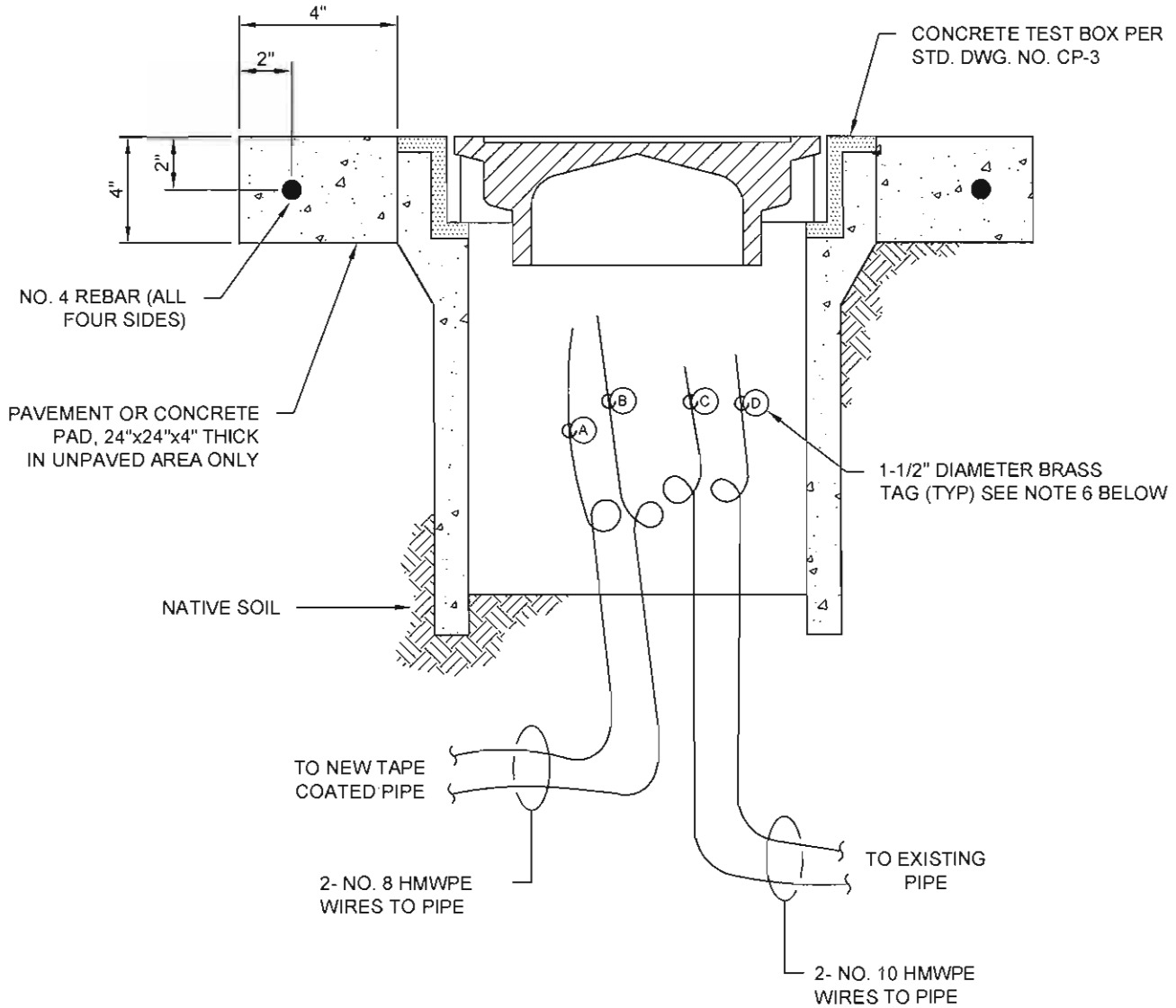


**EVMWD**  
 Elsinore Valley Municipal Water District  
*Paul S. Carver* 11/2/12  
 Paul S. Carver R.C.E. 31516 OATE

**AT-GRADE TEST BOX**

STD. DWG. NO.

**CP-3**



**NOTES:**

1. TOP OF TEST BOX SHALL BE SET FLUSH WITH GRADE.
2. ALL WIRES SHALL HAVE 18" MIN. SLACK IN BOX.
3. BOTTOM OF TEST BOX SHALL BE NATIVE SOIL. DO NOT PLACE ROCK, GRAVEL OR SAND IN TEST BOX.
4. TEST BOX SHALL BE LOCATED IN SIDEWALK STRIP.
5. PROVIDE 24"x24"x4" THICK REINFORCED SQUARE CONCRETE PAD AROUND TEST BOXES AT UNPAVED SITES.
6. BRASS TAGS SHALL BE STAMPED WITH 1/4" HIGH CHARACTERS AND SHALL IDENTIFY PIPE SIZE, MATERIAL, SERVICE AND DIRECTION.

REVISION	BY	APPR	DATE

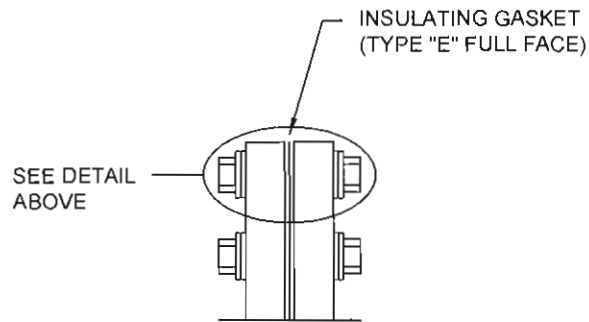
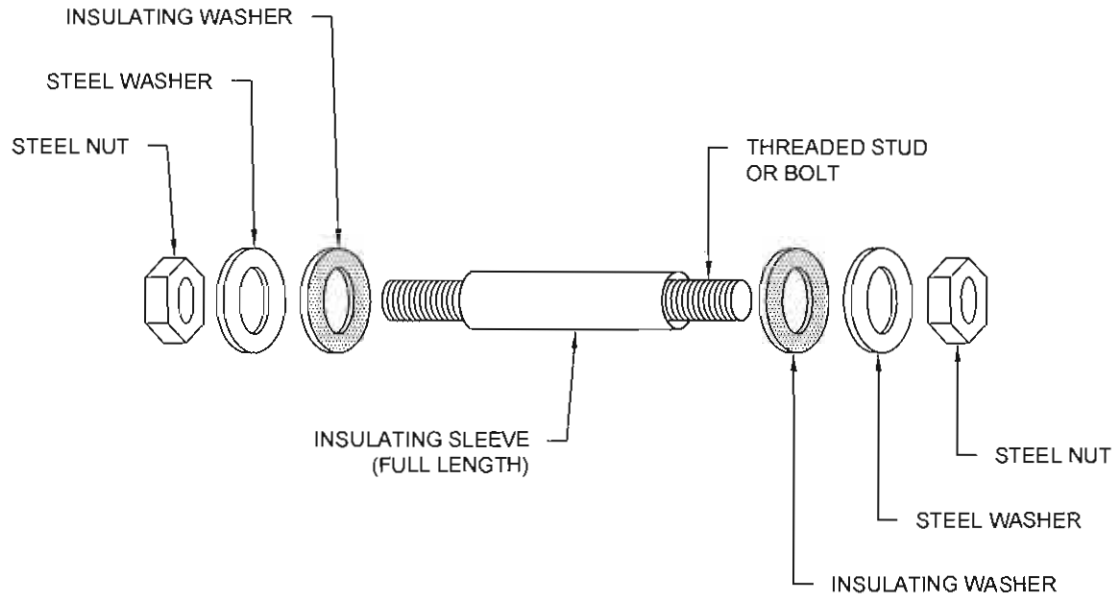


*Paul S. Carver* 11/7/12  
 Paul S. Carver R.C.E. 31516 DATE

**INSULATING FLANGE TEST STATION**

STD. DWG. NO.

**CP-4**



**NOTES:**

1. GASKET SHALL BE TYPE "E" FULL FACE PHENOLIC WITH O-RING.
2. SLEEVE SHALL BE G10 CLASS.
3. WASHERS SHALL BE G10 CLASS.

REVISION	BY	APPR	DATE

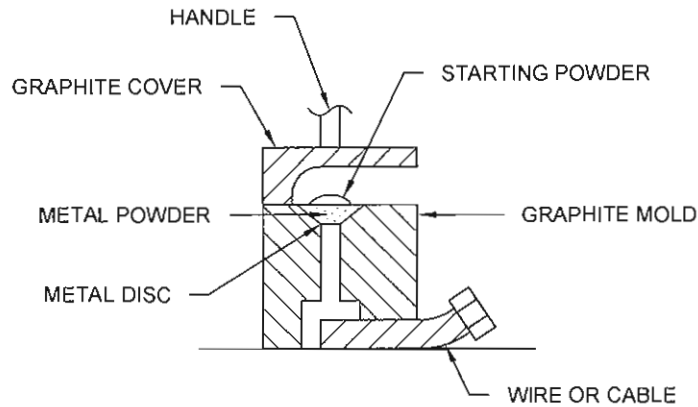
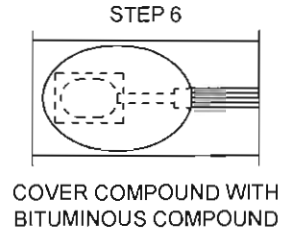
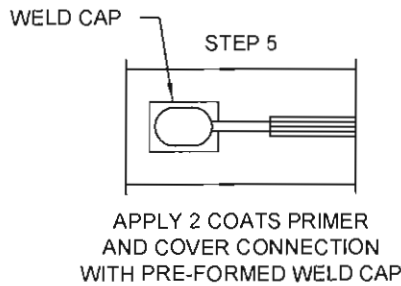
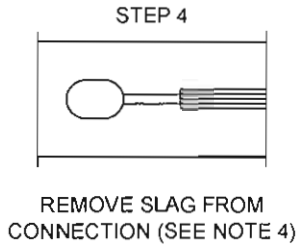
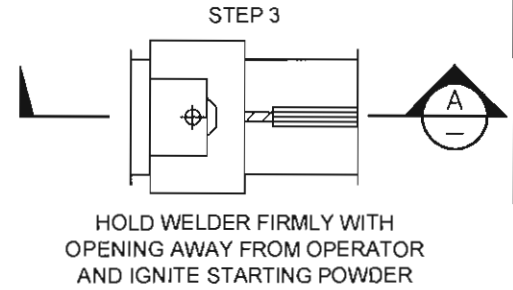
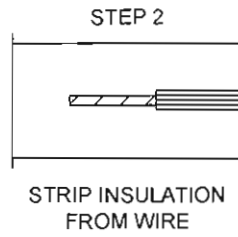
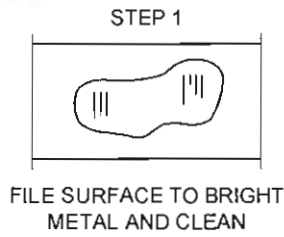


*Paul S. Carver* 11/7/12  
 Paul S. Carver R.C.E. 31516 DATE

**INSULATING FLANGE KIT  
 MATERIALS**

STD. DWG. NO.

**CP-5**



WELDER SECTION A-A

NOTES:

1. WELDER SHOWN IS FOR HORIZONTAL SURFACES. FOR VERTICAL SURFACES, SIDEWELDER IS REQUIRED.
2. ATTACH ONE (1) WIRE PER WELD. ALL WIRE WELDS SHALL BE 3" APART MINIMUM.
3. ALL EXPOSED METAL (STRUCTURE, WIRE AND WELD) SHALL BE COVERED WITH TWO (2) COATS OF PRIMER AND AN ELASTOMERIC WELD CAP, THEN OVER-COATED WITH BITUMINOUS COMPOUND OVERLAPPING PIPE COATING BY 2" MINIMUM.
4. ALL WELDS SHALL BE TESTED BY STRIKING THE WELD WITH A TWO (2) POUND HAMMER WHILE PULLING FIRMLY ON THE WIRE. ANY WELDS BROKEN OR LOOSENED SHALL BE RE-WELDED AND RE-TESTED. THE SURFACE MUST BE RE-GROUND AND CLEAN BEFORE RE-WELDING. ALL WELD SLAG SHALL BE REMOVED FROM THE WELD.

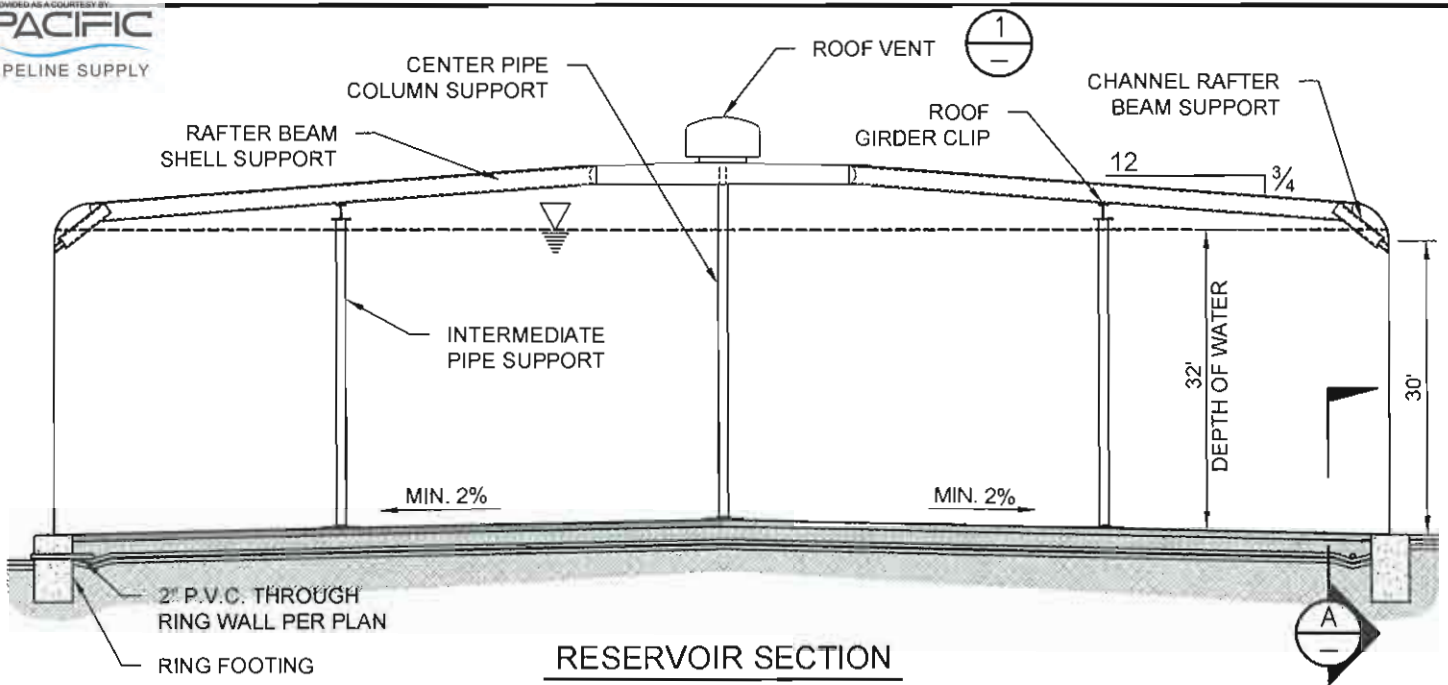
REVISION	BY	APPR	DATE

**EVMSD**  
 Elmore Valley Municipal Water District  
*Paul S. Carver* 11/27/12  
 Paul S. Carver R.C.E. 31516 DATE

ALUMINO-THERMIC WELD

STD. DWG. NO.

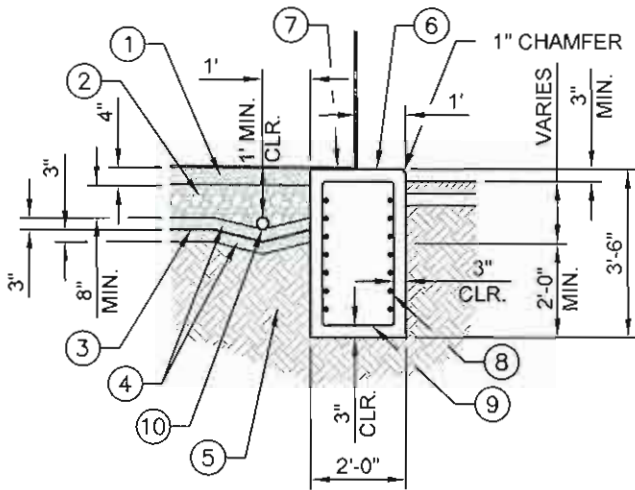
CP-6



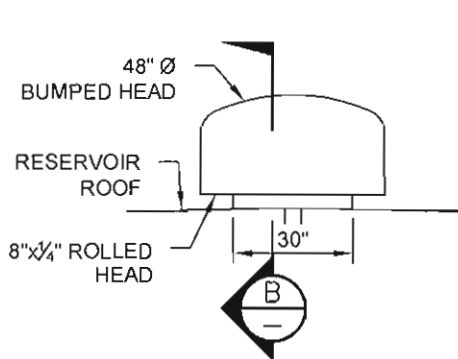
**RESERVOIR SECTION**

**LIST OF MATERIALS**

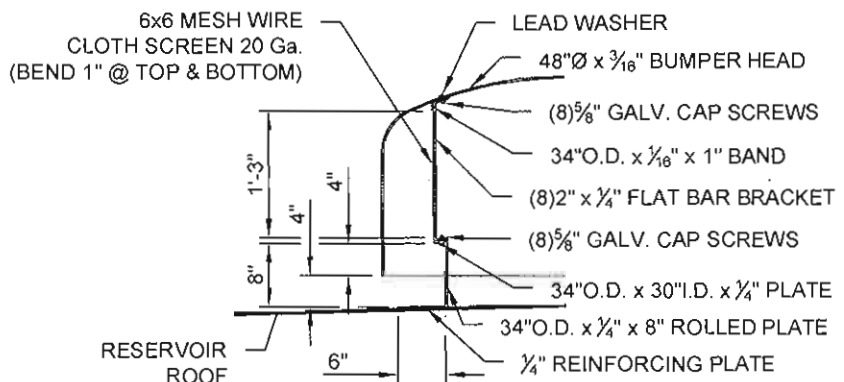
- ① — COMPACTED OIL SAND w/6 - 8 lbs. OF SC-800 LIQUID ASPHALT PER 100 lbs. OF SAND
- ② — 3/8" DRAIN ROCK
- ③ — IMPERMEABLE MEMBRANE (1% MIN. SLOPE TO LEAK DETECTION DRAIN; LAP A MIN. OF 3" ON CONC. FOOTING)
- ④ — SAND (SE 30)
- ⑤ — SELECT GRANULAR MATERIAL PER SOILS ENGINEER RECOMMENDATIONS
- ⑥ — STEEL TROWEL FINISH TOP (TO BE LEVEL WITHIN 1/8" IN ANY 30' & 1/4" OVERALL)
- ⑦ — CONTINUOUS CANE FIBER JOINT FILLER
- ⑧ — #8 BAR (@ EACH FACE; LAP 5' STAGGERED)
- ⑨ — #5 BAR (@ 18" O.C.)
- ⑩ — 2" SCH 40 PVC, PERFORATED AND WRAPPED IN FILTER FABRIC



**A RING FOOTING SECTION**  
 NOT TO SCALE



**1 ROOF VENT**  
 NOT TO SCALE



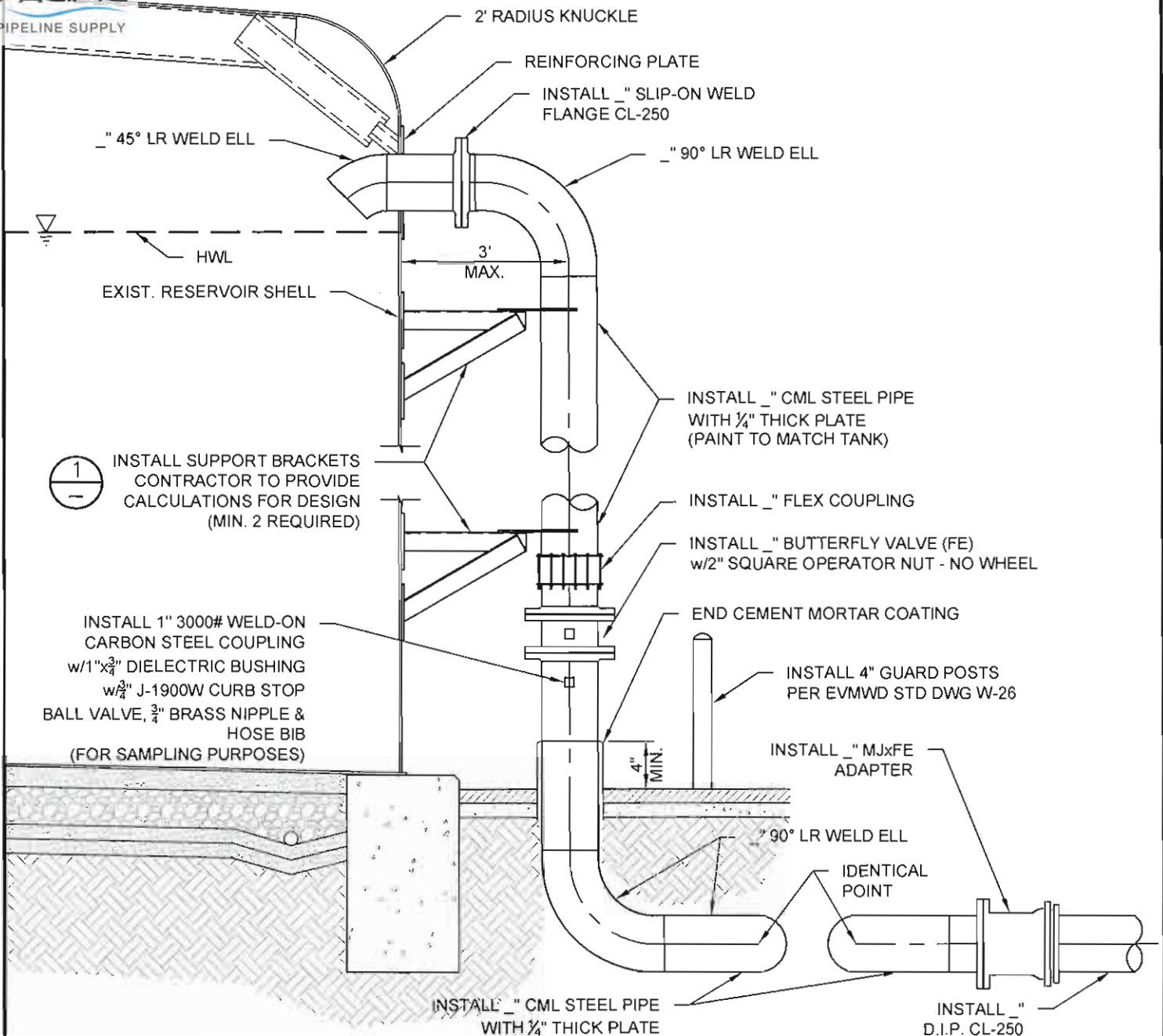
**B ROOF VENT SECTION**  
 NOT TO SCALE

REVISION	BY	APPR	DATE

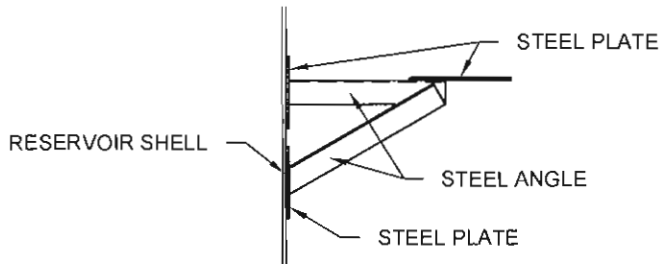
**EMWD**  
 Elsinore Valley Municipal Water District  
*Paul S. Carver* 11/21/12  
 Paul S. Carver R.C.E. 31518 DATE

**WELDED STEEL RESERVOIR  
 TYPICAL SECTION VIEW**

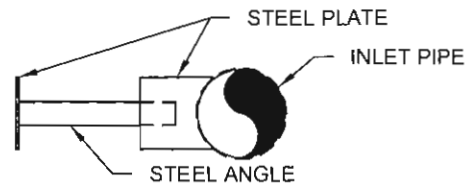
STD. DWG. NO.  
**T-1**



**INLET CONNECTION**



**ELEVATION**



**PLAN**

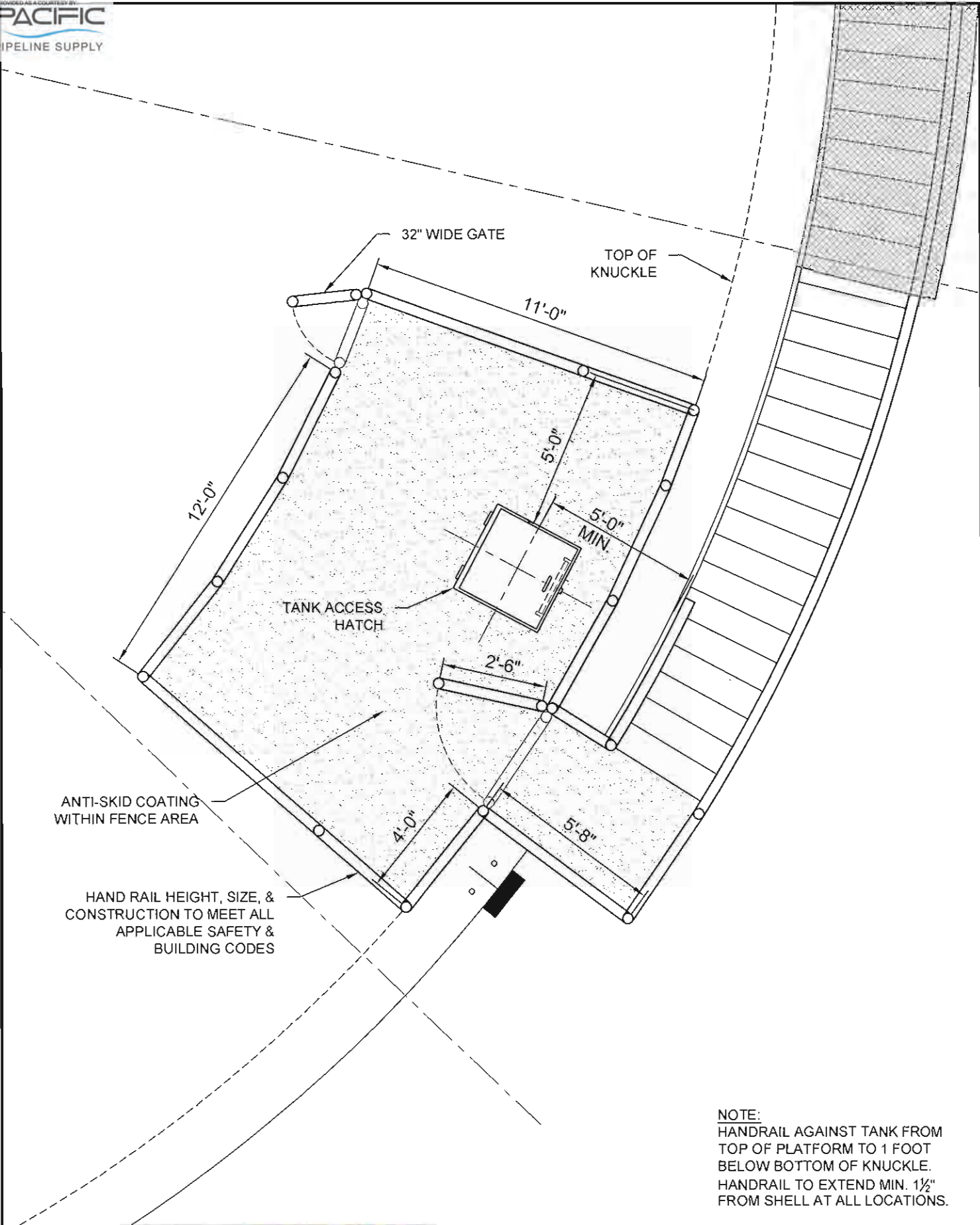
① **SUPPORT BRACKET**  
 NOT TO SCALE

REVISION	BY	APPR	DATE

**EVMWD**  
 Elginore Valley Municipal Water District  
*Paul S. Carver* 11/7/12  
 Paul S. Carver R.C.E. 31516 DATE

**STEEL RESERVOIR  
 INLET CONNECTION**

STD. DWG. NO.  
**T-2**



REVISION	BY	APPR	DATE

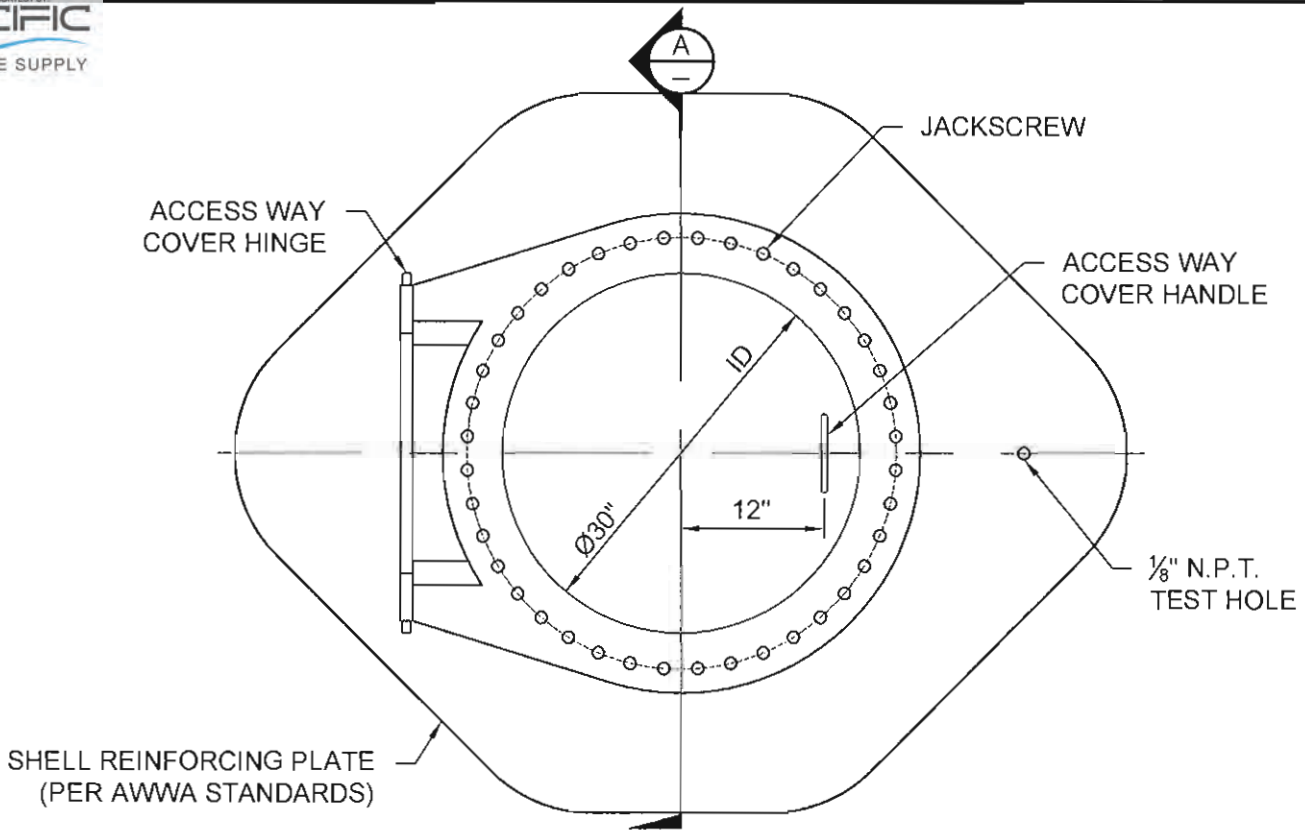
**EVMSD**  
 Elsinore Valley Municipal Water District  
*Paul S. Carver* 11/7/12  
 Paul S. Carver R.C.E. 31518 DATE

**WELDED STEEL RESERVOIR  
 STAIRWAY AND ROOF HANDRAIL**

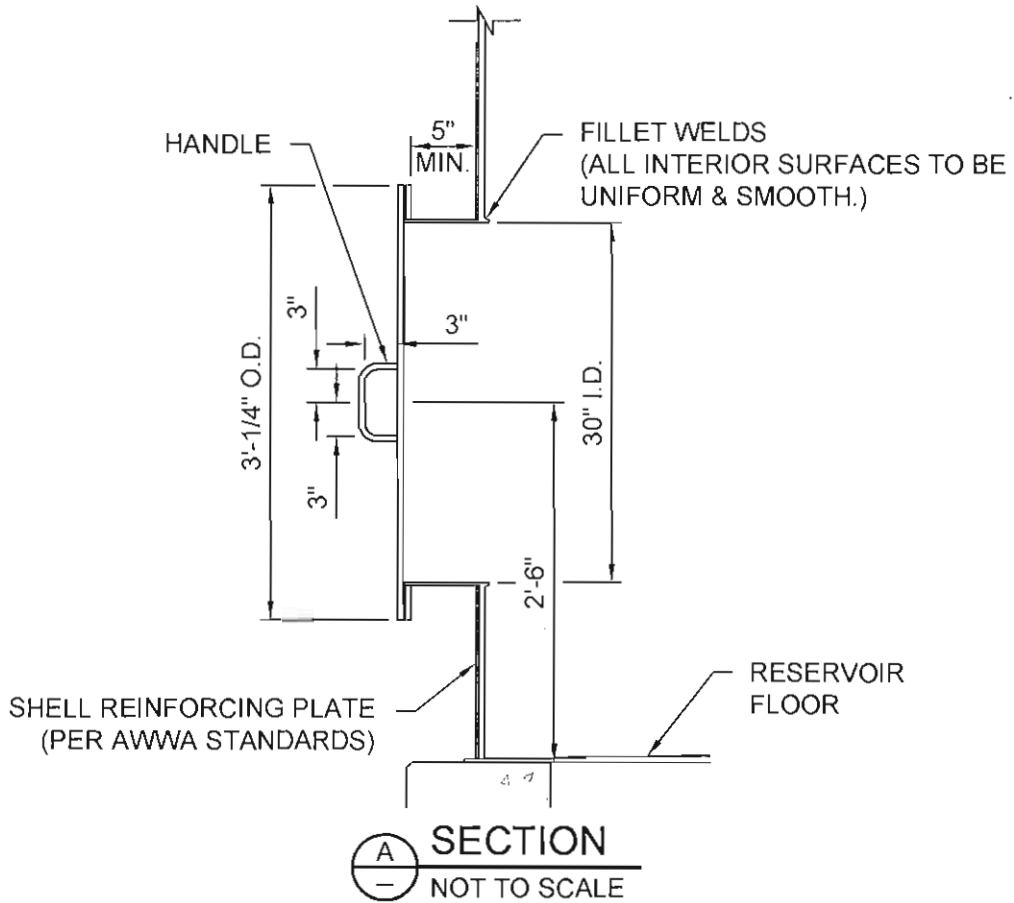
STD. DWG. NO.

T-3





**30" HINGED ACCESS WAY DETAIL**



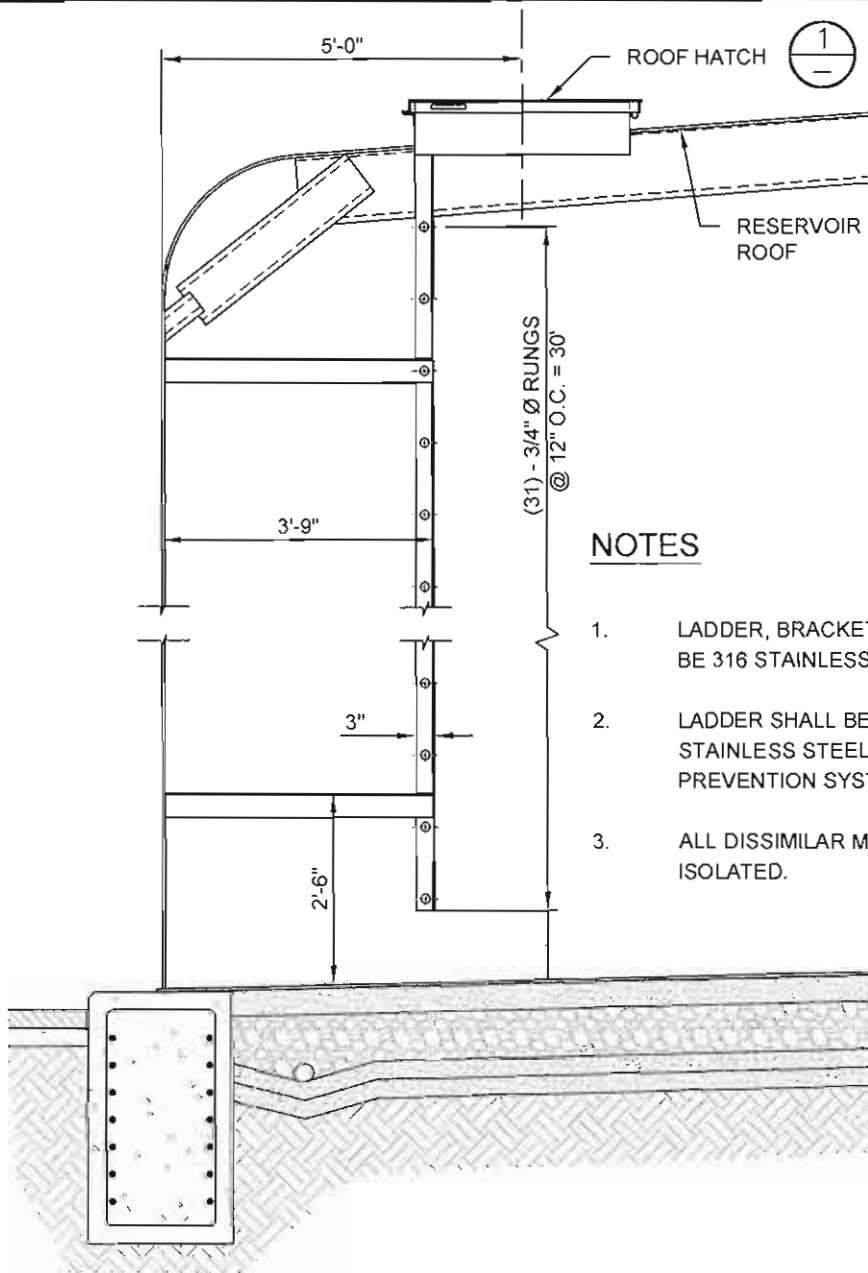
REVISION	BY	APPR	DATE

**EMWD**  
 Elsinore Valley Municipal Water District  
*Paul S. Carver* 11/7/12  
 Paul S. Carver R.C.E. 31516 DATE

**30" HINGED ACCESS WAY  
 DETAIL & SECTION VIEW**

STD. DWG. NO.

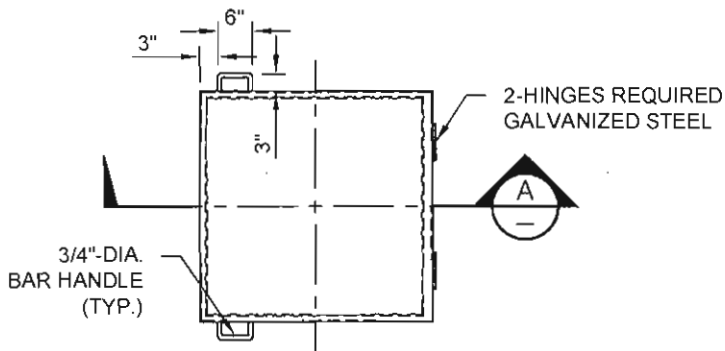
T-4



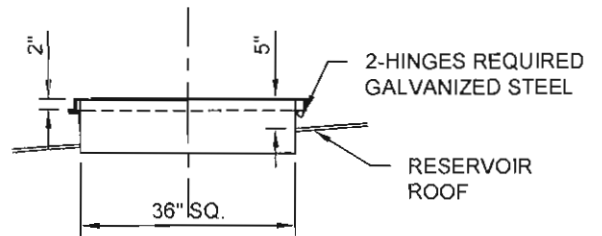
**NOTES**

1. LADDER, BRACKETS, & HARDWARE SHALL BE 316 STAINLESS STEEL.
2. LADDER SHALL BE EQUIPPED WITH 316 STAINLESS STEEL SAF-T-CLIMB FALL PREVENTION SYSTEM.
3. ALL DISSIMILAR METALS SHALL BE ISOLATED.

**INTERNAL LADDER**  
 NOT TO SCALE



**36" HINGED ROOF HATCH**  
 NOT TO SCALE



**ROOF HATCH SECTION**  
 NOT TO SCALE

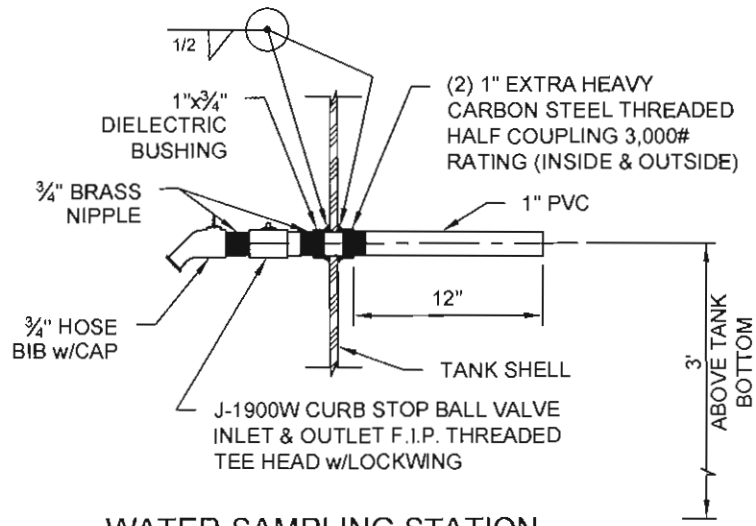
REVISION	BY	APPR	DATE

**EMWD**  
 Elmore Valley Municipal Water District  
*Paul S. Carver* 11/7/12  
 Paul S. Carver R.C.E. 31518 DATE

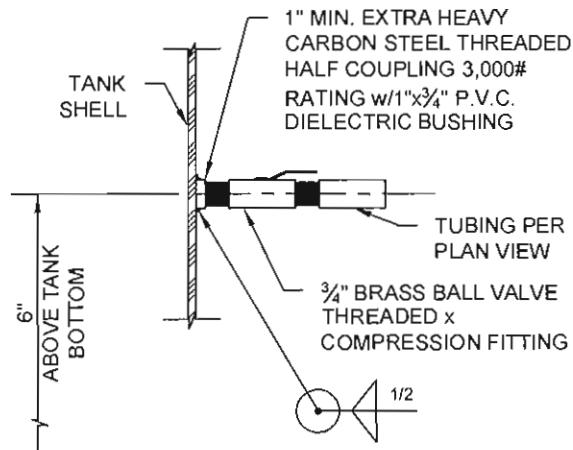
**WELDED STEEL RESERVOIR  
 LADDER AND ROOF HATCH**

STD. DWG. NO.

T-5



**WATER SAMPLING STATION**  
 NOT TO SCALE



**SENSING LINE CONNECTION**  
 NOT TO SCALE

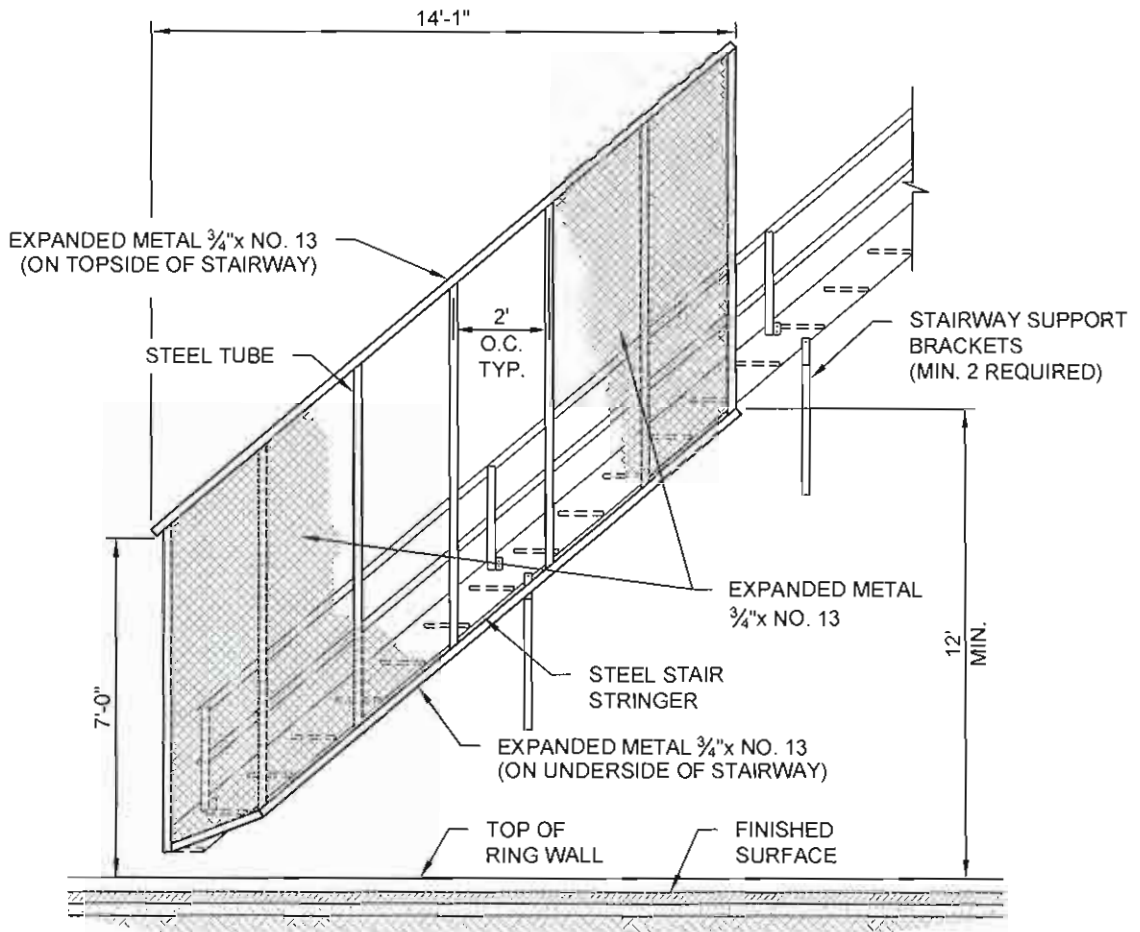
REVISION	BY	APPR	DATE

**EMWD**  
 Eastern Valley Municipal Water District  
*Paul S. Carver* 11/12  
 Paul S. Carver R.C.E. 31516 DATE

**WELDED STEEL RESERVOIR  
 WATER SAMPLING STATION  
 SENSING LINE CONNECTION**

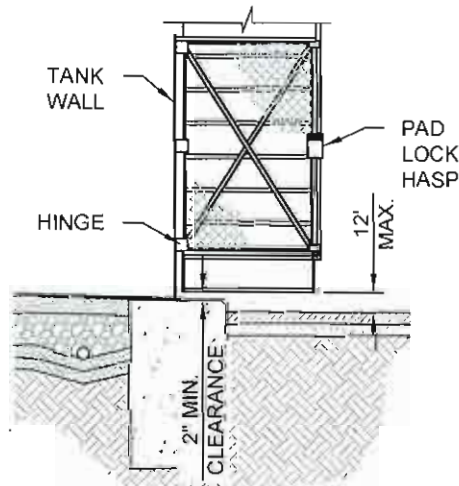
STD. DWG. NO.

**T-6**



**ANTI-CLIMB STAIRWAY CAGE**

NOT TO SCALE



**ANTI-CLIMB STAIRWAY GATE**

NOT TO SCALE

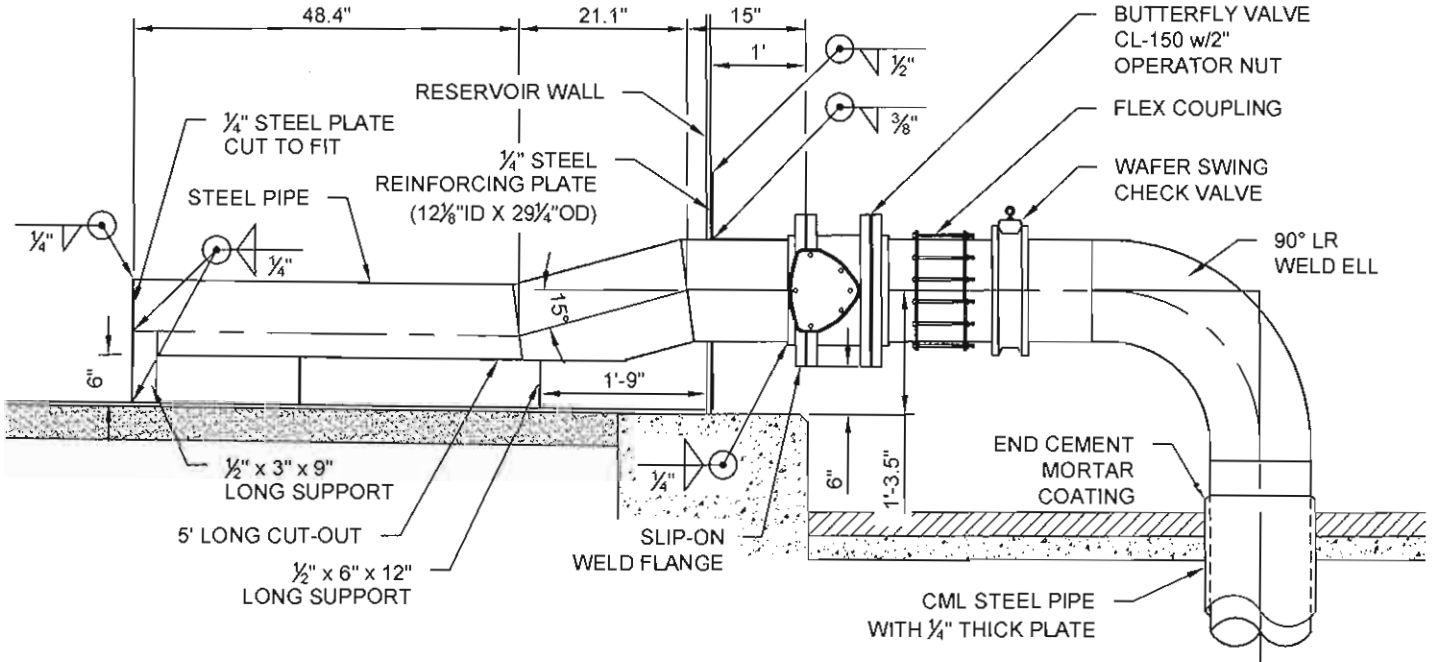
REVISION	BY	APPR	DATE

**EMWD**  
 Eugene-Wasco Municipal Water District  
*Paul S. Carver* 11/7/12  
 Paul S. Carver R.C.E. 31516 DATE

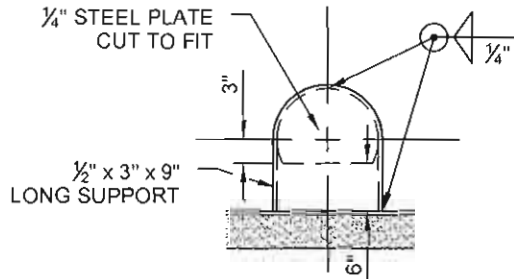
**WELDED STEEL RESERVOIR  
 STAIRWAY & ANTI-CLIMB CAGE**

STD. DWG. NO.

T-7



**OUTLET CONNECTION**  
 NOT TO SCALE



**OUTLET CONNECTION END VIEW**  
 NOT TO SCALE

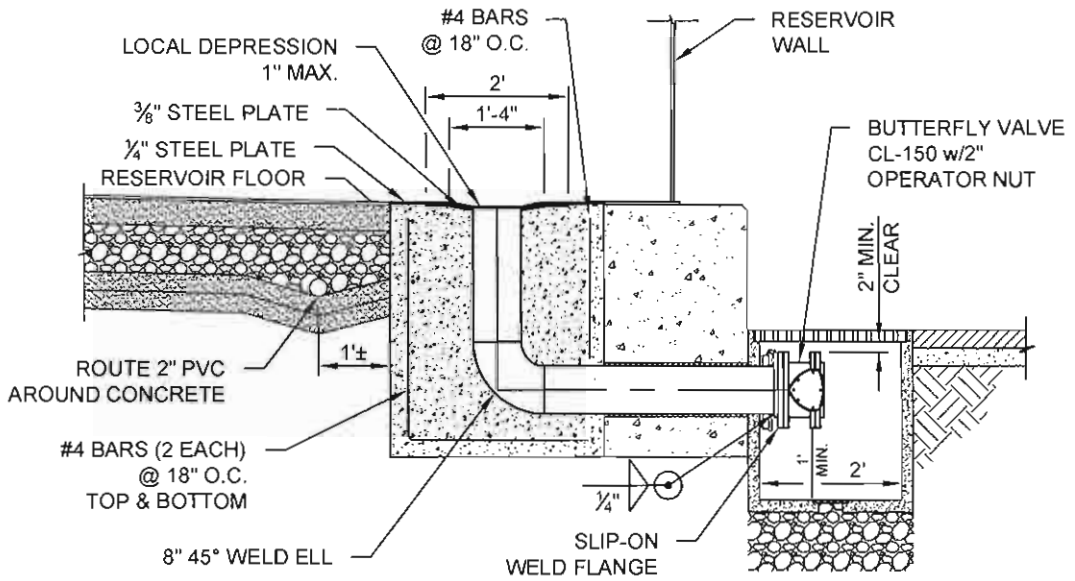
REVISION	BY	APPR	DATE

**EVMS**  
 Elsinora Valley Municipal Water District  
*Paul S. Carver* 11/7/12  
 Paul S. Carver R.C.E. 31518 DATE

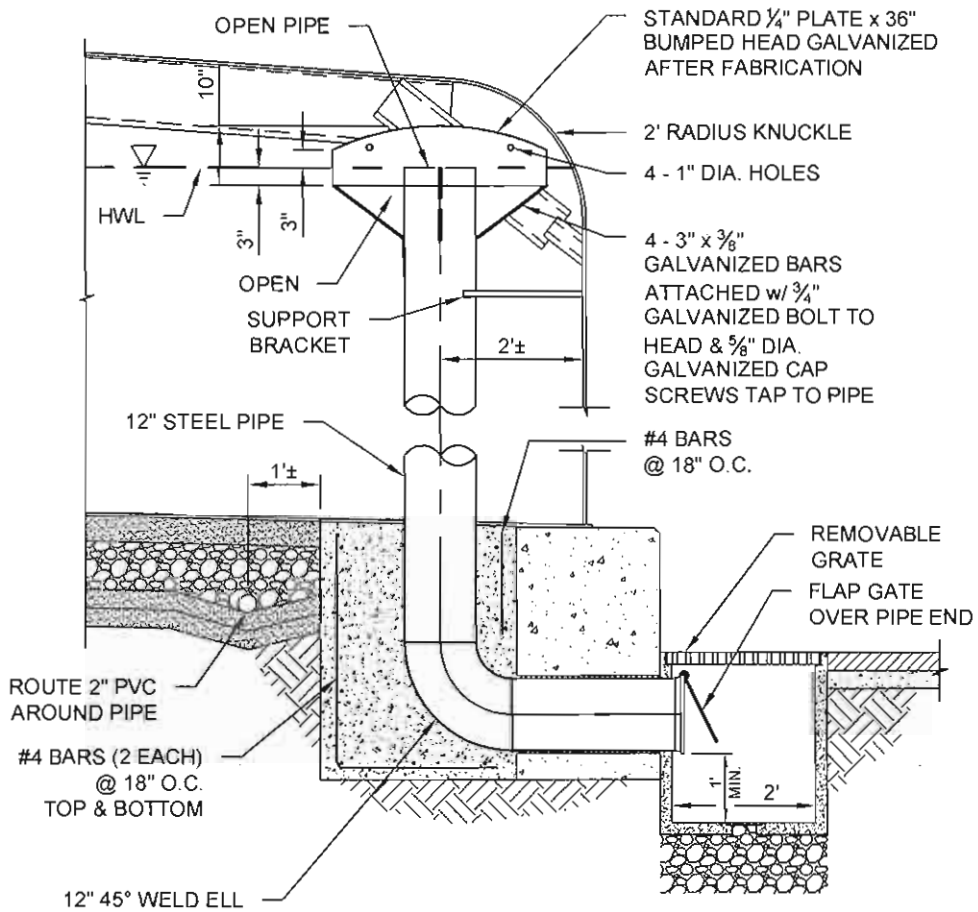
**WELDED STEEL RESERVOIR  
 OUTLET CONNECTION**

STD. DWG. NO.

T-8



**DRAIN THRU FOOTING**  
 NOT TO SCALE



**OVERFLOW PIPE**  
 NOT TO SCALE

REVISION	BY	APPR	DATE

**EMWD**  
 Elginore Valley Municipal Water District  
*Paul S. Carver* 11/7/12  
 Paul S. Carver R.C.E. 31516 DATE

**WELDED STEEL RESERVOIR  
 FLOOR DRAIN  
 & OVERFLOW PIPE**

STD. DWG. NO.  
**T-9**

# PART IV

# APPENDICIES

**AGREEMENT BETWEEN ELSINORE VALLEY MUNICIPAL  
WATER DISTRICT AND [INSERT NAME OF APPLICANT/OWNER]  
FOR [INSERT PROJECT/DEVELOPMENT]**

This Agreement is made effective as of this \_\_\_ day of \_\_\_\_\_ (year)\_\_\_ by and between Elsinore Valley Municipal Water District (the “District”) and \_\_\_\_\_ [insert name of applicant/owner] (“Applicant”) and all parties are collectively referred to herein as the Parties.

**RECITALS**

A. The District is, and at all times mentioned herein was, a municipal water district organized and operating within Riverside County, California pursuant to section 71000 et. seq. of the California Water Code.

B. Applicant is a \_\_\_\_\_ [individual/LLC/Corporation, etc.] who has made an application for District service or who hereby agrees to construct and install facilities, which after acceptance, will become part of the District’s system.

C. The District and the Applicant have commenced discussions about the facilities to be installed and the District’s requirements regarding these facilities. Since final documents dedicating these facilities and the associated easements cannot be prepared until conclusion of the design and approval process, the parties hereby enter into the following Agreement.

**AGREEMENT**

In consideration of the foregoing Recitals, the mutual understandings contained in this Agreement and other good, valuable and sufficient consideration, the parties hereto agree as follows:

1. Design Standards. The applicant agrees to follow the procedures and requirements found in the most recent version of the District’s Standard Specifications (currently EVMWD 04-2004).

2. Compliance with Administrative Code and Payment of All Fees. The Applicant agrees to comply with all provisions of, and to pay all applicable fees and deposits, as set forth in the District’s Administrative Code, including all requirements related to annexation.

3. Easements. The Applicant agrees to provide the District all required water, recycled water and/or sewer easement documents which will be prepared by the Applicant’s Private Engineer on forms provided by the District, and delivered to the District for recording, with the County Recorder.



4. Irrevocable Offer of Dedication. The Applicant will provide executed Irrevocable Offers of Dedication to the District containing the proper legal description of the facilities to be dedicated, prepared by the Applicant's Private Engineer, and on forms provided by the District.

5. Acceptance of Irrevocable Offer of Dedication. Upon completion of construction and acceptance of the facilities by the District, the District may, at its sole discretion, file an Acceptance of the Irrevocable Offer of Dedication.

6. Indemnity and Hold Harmless. Applicant shall indemnify District and its Board members, directors, officers, employees, agents and authorized volunteers against and will hold and save them and each of them harmless from any and all actions, claims, damages to persons or property, penalties, obligations or liabilities that may be asserted or claimed by any person, firm entity, corporation, political subdivision or other organization arising out of or in connection with Developer's project, operation or activities of Developer, its agents, employees, architects, engineers, contractors, subcontractors or invitees, provided for herein, whether or not there is concurrent passive or active negligence on the part of District, or its Board members, directors, officers, employees, agents and authorized volunteers, to the full extent permitted by law.

7. Agreement Binding on Successors. It is agreed that this Agreement, together with all easements and dedications shall be binding upon and inure to the benefit of the heirs, executors, administrators, personal representatives, successors in interest and assigns of the respective parties hereto.

ELSINORE VALLEY MUNICIPAL WATER  
DISTRICT

BY: \_\_\_\_\_

Its: \_\_\_\_\_  
General Manager

[INSERT NAME OF APPLICANT]

BY: \_\_\_\_\_

Its: \_\_\_\_\_

**RECORDING REQUESTED BY:**

Elsinore Valley Municipal Water District

**AFTER RECORDING MAIL TO:**

District Clerk  
Elsinore Valley Municipal  
Water District

---

ABOVE SPACE FOR RECORDER'S USE

**IRREVOCABLE OFFER OF DEDICATION**

THIS DOCUMENT IS RECORDED AS A BENEFIT TO THE  
ELSINORE VALLEY MUNICIPAL WATER DISTRICT AND IS EXEMPT  
FROM RECORDING FEE PURSUANT TO SECTION 6103 OF  
CALIFORNIA GOVERNMENT CODE.

DOCUMENTARY TRANSFER TAX DUE \$ 0

\_\_\_\_\_  
General Manager or his Designee

ASSESSOR'S PARCEL NO. \_\_\_\_\_

PROJECT NO. \_\_\_\_\_

\_\_\_\_\_  
**[INSERT OWNER/APPLICANT NAME]**

hereinafter designated Grantor(s), represent that \_\_\_\_\_ are the owner(s) of the hereinafter described real property, and for a valuable consideration, receipt of which is hereby acknowledged, hereby make(s) an Irrevocable Offer of Dedication, to Elsinore Valley Municipal Water District, in the County of Riverside, State of California, hereinafter designated Grantee, for the following public purpose:

The real property referred to above is situated in the incorporated area of the **[INSERT LOCATION]**, State of California, and is more particularly described as follows:

LEGAL DESCRIPTION:

(See Exhibits – “A” and “B” Attached)

The Grantor hereby further offers to the Grantee the privilege and right to

---

**[DESCRIBE FACILITIES OR ATTACH DESCRIPTION  
OF FACILITIES] .**

The Grantor hereby further offers to Grantee all [**include all appurtenances or other things granted**] within said right-of-way, together with the right to use the same in such manner as said Grantee may deem proper, needful or necessary, in the construction, reconstruction, improvement or maintenance of said facility.

The Grantor, for himself, his successors and assigns, hereby waives any claim for any and all damages to the Grantor's remaining property contiguous to the right-of-way hereby conveyed by reason of the location, construction, landscaping or maintenance of said facility.

This Offer of Dedication is made in a manner consistent with Section 7050 of the Government Code of the State of California and may be accepted at any time by the General Manager or his designee of Elsinore Valley Municipal Water District.

This Offer of Dedication may be terminated and the right to accept such offer abandoned in the same manner as prescribed for the vacation of streets or highways by Part 3 of Division 9 of Streets and Highways Code of the State of California. Such termination and abandonment may be made by the Board of Elsinore Valley Municipal Water District.

This Offer of Dedication shall be irrevocable and shall be binding on the Grantor(s) heirs, executors, administrators, successors and assigns.

WITNESS WHEREOF, the Grantor(s) has/have caused this Irrevocable Offer of Dedication to be executed this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_\_.

OWNERS:

By: \_\_\_\_\_  
(sign here)

By: \_\_\_\_\_  
(sign here)

\_\_\_\_\_  
(print name here)

\_\_\_\_\_  
(print name here)

\_\_\_\_\_  
(title of signatory)

\_\_\_\_\_  
(title of signatory)

(All OWNERS must sign)

(Proper notarial acknowledgment of execution by OWNER must be attached.)

(President or vice-president **and** secretary or assistant secretary must sign for corporations. If only one officer signs, the corporation must attach a resolution certified by the secretary or assistant secretary under corporate seal empowering that officer to bind the corporation.)

(Attach appropriate Subordination Agreements as applicable)

**ELSINORE VALLEY MUNICIPAL WATER DISTRICT  
CERTIFICATE OF ACCEPTANCE FOR RECORDATION  
OF  
IRREVOCABLE OFFER OF DEDICATION OF REAL PROPERTY**

This is to certify the Irrevocable Offer of Dedication dated \_\_\_\_\_ from \_\_\_\_\_ to Elsinore Valley Municipal Water District, is hereby accepted by the undersigned officers on behalf of the District.

Date: \_\_\_\_\_

By: \_\_\_\_\_

DISTRICT CLERK'S OFFICE:

STATE OF CALIFORNIA )  
COUNTY OF \_\_\_\_\_ ) ss.  
ELSINORE VALLEY )  
MUNICIPAL WATER )  
DISTRICT )

On \_\_\_\_\_, before me, the undersigned District Clerk, personally appeared \_\_\_\_\_, personally known to me to be the person whose name is subscribed to the within instrument and he acknowledged to me that he executed the same in his authorized capacity as \_\_\_\_\_, and that by his signature on the instrument he executed the instrument on behalf of the Elsinore Valley Municipal Water District pursuant to authority granted by Resolution No. \_\_\_\_\_ of the Elsinore Valley Municipal Water District Board adopted on \_\_\_\_\_.

WITNESS my hand and official seal.

\_\_\_\_\_



**ELSINORE VALLEY MUNICIPAL WATER DISTRICT  
CERTIFICATE OF ACCEPTANCE FOR RECORDATION  
OF  
IRREVOCABLE OFFER OF DEDICATION OF REAL PROPERTY**

This is to certify the Irrevocable Offer of Dedication dated \_\_\_\_\_ from **INSERT OWNER/APPLICANT NAME** to Elsinore Valley Municipal Water District a public agency organized pursuant to section 71000 et. seq. of the California Water Code, is hereby accepted for future recordation by the undersigned officers on behalf of the District.

The interest in real property conveyed by the Offer of Dedication is made in a manner consistent with Section 7050 of the Government Code of the State of California and shall remain open and may be accepted at any time and at the sole discretion of the General Manager of Elsinore Valley Municipal Water District or his designee.

Date: \_\_\_\_\_ By: \_\_\_\_\_

**DISTRICT CLERK'S OFFICE:**

STATE OF CALIFORNIA            )  
COUNTY OF \_\_\_\_\_        ) ss.  
ELSINORE VALLEY MUNICIPAL )  
WATER DISTRICT                )

On \_\_\_\_\_, before me, the undersigned District Clerk, personally appeared \_\_\_\_\_, personally known to me to be the person whose name is subscribed to the within instrument and he acknowledged to me that he executed the same in his authorized capacity as \_\_\_\_\_, and that by his signature on the instrument he executed the instrument on behalf of Elsinore Valley Municipal Water District pursuant to authority granted by Resolution No. \_\_\_\_\_ of Elsinore Valley Municipal Water District Board of Directors adopted on \_\_\_\_\_.

WITNESS my hand and official seal.  
  
\_\_\_\_\_

**RECORDING REQUESTED BY:**

Elsinore Valley Municipal Water District

**AFTER RECORDING MAIL TO:**

District Clerk  
Elsinore Valley Municipal  
Water District

\_\_\_\_\_  
ABOVE SPACE FOR RECORDER'S USE

**ACCEPTANCE OF IRREVOCABLE OFFER OF DEDICATION**

THIS DOCUMENT IS RECORDED AS A BENEFIT TO  
ELSINORE VALLEY MUNICIPAL WATER DISTRICT AND IS  
EXEMPT FROM RECORDING FEE PURSUANT TO  
SECTION 6103 OF CALIFORNIA GOVERNMENT CODE.

DOCUMENTARY TRANSFER TAX DUE   \$ 0  

\_\_\_\_\_  
General Manager or his Designee

ASSESSOR'S PARCEL NO. \_\_\_\_\_ PROJECT NO. \_\_\_\_\_

This is to certify the dedication of real property from  
**[Insert Owner/Applicant Name]** to Elsinore Valley Municipal Water District, a public  
agency organized pursuant to \_\_\_\_\_, is hereby accepted by the undersigned  
officers on behalf of Elsinore Valley Municipal Water District.

**LEGAL DESCRIPTION:**

All that real property conveyed to Elsinore Valley Municipal Water  
District for **[DESCRIBED FACILITIES]** by Irrevocable Offer of  
Dedication recorded **[INSERT RECORDATION DATE]** as File No.  
\_\_\_\_\_ of Official Records of the County of **[INSERT  
PROPER COUNTY]**.

ACCEPTED ON BEHALF OF ELSINORE VALLEY MUNICIPAL WATER DISTRICT

By: \_\_\_\_\_ Date: \_\_\_\_\_

DISTRICT CLERK'S OFFICE:

STATE OF CALIFORNIA )  
COUNTY OF RIVERSIDE ) ss.  
CITY OF LAKE ELSINORE )

On \_\_\_\_\_, before me, the undersigned District Clerk, personally appeared \_\_\_\_\_, personally known to me to be the person whose name is subscribed to the within instrument and he acknowledged to me that he executed the same in his authorized capacity as \_\_\_\_\_, and that by his signature on the instrument he executed the instrument on behalf of the Elsinore Valley Municipal Water District pursuant to authority granted by Resolution No. \_\_\_\_\_ of the Elsinore Valley Municipal Water District Board of Directors adopted on \_\_\_\_\_.

WITNESS my hand and official seal.

\_\_\_\_\_



**PART V**  
**ACCEPTED MATERIALS**  
**GUIDELINE**

**ELSINORE VALLEY MUNICIPAL WATER DISTRICT  
ACCEPTED MATERIALS GUIDELINE  
FOR USE ON NEW CONSTRUCTION OF  
POTABLE AND RECYCLED WATER FACILITIES**

<u>ITEMS</u>	<u>DESCRIPTION</u>	<u>MANUFACTURER</u>
<b>ADAPTER, FLANGE COUPLING</b>	4" and larger, mechanical x flange. Steel or Ductile Iron construction without anchor pins, epoxy coated, 304 stainless steel bolts and nuts	Ford FFCA Style Romac FCA501, FC400 Smith-Blair 912, 913 Uni-Flange JCM 301, 303
<b>AIR/VACUUM VALVE ENCLOSURE</b>	12 Gauge Steel, Clam Shell Hinged Construction, Use Enclosure Size As Indicated Below. 1" and 2" Air Vac Sizes Use: 16" x 24" 4" and 6" Air Vac Sizes Use: 24" x 36" Powder Polyester Coated: Safety Yellow for Potable Water OSHA Safety Purple for Recycled Water	Pipeline Products-VCDD 1624, VCDD 2436, VCAS 1424-BL
<b>BACKFLOW PREVENTER</b>	Reduced Pressure Principal Type Assemblies as Approved by the State of California, Department of health Services.	Febco 826 YD, (RPDA) Febco 860, 880V, 880 Febco 856, 825YA, 825Y Watts 709 Wilkins 950 DA, 450 DA, 975XLSE, 975XL, 975XLV, 375, 975, 375DA, 975DA
<b>CASING END SEAL</b>	1/4" Thick Styrene Butadiene Rubber Sheet End Seal. Use 1" Wide Stainless Steel Bands.	Advances Products & Systems Cascade Water Works Calpico CCI Products
<b>CASING SPACER</b>	Polyethylene Casing Spacer, Center Restrained, Position Type with PVC Liner and Non- metallic Anti-friction Runners	Advances Products & Systems Cascade Water Works Calpico CCI Products
<b>COATING, MASTIC</b>	Cold Applied Coal Tar or Epoxy Based Single Component, Self-Priming, Heavy duty Protective Exterior Coating for Buried Metal	Carboline Bitumastic 50 Devoe Devtar 5A Tnemec HB Tnemecol 46-465, HB Tneme-Tar 46H-413

**ELSINORE VALLEY MUNICIPAL WATER DISTRICT**  
**ACCEPTED MATERIALS GUIDELINE**  
**FOR USE ON NEW CONSTRUCTION OF**  
**POTABLE AND RECYCLED WATER FACILITIES**

<u>ITEMS</u>	<u>DESCRIPTION</u>	<u>MANUFACTURER</u>
<b>COATING, WATERPROOF</b>	Epoxy Resin Based Cementitious Trowel Grade Protective Waterproofing for Concrete	Sika Top Seal 107 STO CR 241
<b>COATINGS, WELDED STEEL RESERVOIR</b>	Interior Prime Coat	Tnemec Pota-Pox 80, Red Devoe Bar-Rust 233H Stripe Coat - Buff Primer Coat - White
	Interior Intermediate Coat	Tnemec Pota-Pox 80, Beige Devoe Bar-Rust 233H Stripe Coat - White Intermediate Coat - Buff
	Interior Finish Coat	Tnemec Pota-Pox, White Devoe Bar-Rust 233H, White
	Exterior Prime Coat	Tnemec Series 91 Hydro-Zinc Bar-Rust 233H
	Intermediate Coat, Color Selected by District	Tnemec Hi-Build Epoxiline Series 66 Devthane 378H
	Finish Coat, Color Selected by District	Tnemec Endura-Shield III Devthane 378H
<b>CORPORATION STOP, MIP X COMPRESSION</b>	Bronze MIP x Compression thread Ball Valve (T-Head only) 1" and 2" Full Opening	Ford FI100-4, FI100-7 Jones J-1935 A. Y. McDonald Mueller Cambridge 301NL
<b>COUPLING</b>	Three Part Compression Coupling (Both Ends) for 1" and 2" Copper Pipe	Ford C44-G Series A. Y. McDonald Jones Smith Blair Cambridge 119NL

**ELSINORE VALLEY MUNICIPAL WATER DISTRICT  
ACCEPTED MATERIALS GUIDELINE  
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<u>ITEMS</u>	<u>DESCRIPTION</u>	<u>MANUFACTURER</u>
<b>COUPLING, C900 PVC DEFLECTION</b>	4" through 12" Solid PVC for Obtaining Deflection Only. Provides 5 Degree Maximum Deflection	Any AWWA Compliant
<b>UNIVERSAL BRASS COUPLING</b>	3/4", 1", 1"x3/4" Brass, Compression x Compression	Cambridge 119NL U Series
<b>COUPLING, C900 PVC CLOSURE OR REPAIR</b>	4" through 12" Solid PVC for Closure or Repair	Multi Certainteed Iplex Any AWWA Compliant
<b>COUPLING, C905 PVC CLOSURE OR REPAIR</b>	16" through 36" Solid PVC for Closure or Repair	Multi Certainteed Iplex Nyloplast Any AWWA Compliant
<b>COUPLING, INSULATED, COMPRESSION X</b>	Three Part Compression Insulated Coupling (Both Ends) for 1" Copper Pipe	A. Y. McDonald 4755DBT Mueller N-35403 Ford Jones
<b>COMPRESSION COUPLING, STRAIGHT FLEXIBLE</b>	4" and Larger, Ductile Iron Construction, Slip x Slip, Epoxy Coated with 304 or 316 Stainless Steel Bolts and Nuts. For Use on PVC, DI, or Steel Pipe.	Ford FCI (DI) Romac 501 (DI) Smith-Blair 411(Stl.), 441 (DI) 442, 461, 462 JCM 210, 215, 241, 242
<b>COUPLING, TRANSITION FLEXIBLE</b>	4" and Larger, Ductile Iron Construction, Slip x Slip, Epoxy Coated with 304 or 316 Stainless Steel Bolts and Nuts. For Use on AC, PVC, DI, or Steel Pipe	Ford FC2A (DI) Romac 501 (DI) Smith-Blair 413 (Sti.), 411 (DI) 441, 442, 461, 462 JCM 212, 241, 242

**ELSINORE VALLEY MUNICIPAL WATER DISTRICT  
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POTABLE AND RECYCLED WATER FACILITIES**

<u>ITEMS</u>	<u>DESCRIPTION</u>	<u>MANUFACTURER</u>
<b>DISMANTLING JOINT</b>	4" and Larger Stell Spigot ASTM A283 Grade C, Flange Adaptor Steel or Ductile Iron ASTM A536 Grade 65-45-12.	Viking Johnson Smith-Blair 975 JCM 309
<b>ELL, FIRE HYDRANT BURY, DUCTILE IRON</b>	6" Ductile Iron Bury Ells, Long Radius, F1g x MJ/PO	Clow South Bay Foundry Star Pipe Products Sigma
<b>ELL, COMPRESSION TYPE</b>	1" and 2" Bronze Ell Compression x Compression for Copper Pipe	Ford L44-Q Series Jones J-2611 Cambridge 105NL
<b>FIRE HYDRANT, 200 PSI</b>	6" Standard 200 PSI Wet Barrel Ductile Iron Fire Hydrant. Epoxy coated interior, shop primed and painted exterior with Six-hole Bolt Pattern.	Jones J4040D, J4060D Clow 850, 860
<b>FITTING, DUCTILE IRON</b>	Flanged, Mechanical, Joint or Push-on Tees, Bends, Crosses, Reducers, Adapters, etc., for Water Lines 4" and Larger. Manufactured per AWWA C100, C111, C153. Double Cement Mortar Lines.	Pipeline Components Tyler/Union U.S. Pipe Star Pipe Products Sigma
<b>GASKET</b>	1/8" Thick Full Ring Gasket Face Aramid Fiber Bound with Nitrile. No Asbestos Content	Calpico Johns-Manville Tripac 5000 APS
<b>GASKET, RUBBER RING</b>	1/8" Thick, Rubber Ring Type, 250 PSI Maximum. For 4 " Through 24" Pipe Flanges	Calpico Johns-Manville US Pipe APS

**ELSINORE VALLEY MUNICIPAL WATER DISTRICT  
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POTABLE AND RECYCLED WATER FACILITIES**

<u>ITEMS</u>	<u>DESCRIPTION</u>	<u>MANUFACTURER</u>
<b>JOINT RESTRAINT ASSEMBLY</b>	360 Degree Wedge Type Restraint System for Ductile Iron, C900 PVC, and steel Pipe, Size 6" through 24".	Ford Uniflange 1300 Series Ford Uniflange 1500 Series Romac EBAA Iron Smith-Blair Tyler/Union
<b>LUBRICANT, PIPE GASKET</b>	Rubber Gasket Pipe Lubricant for Use on PVC or Ductile Iron Pipe Joints, NSF Listing Required, and AWWA Compliant	EBAA Iron
<b>METER BOX</b>	19" x 25¾" Plastic Polymer or Concrete Meter Box and Cover for 1" Water Services.	Carson Industries 1320B-15D J &R Concrete Applied Engineering Products DFW Plastics
<b>METER BOX</b>	27 ¼" x 40 ½" Plastic Polymer or Concrete Meter Box with 2-Piece Lid for 2" and 3" Water Services.	Carson Industries 1730B-P15L J &R Concrete Applied Engineering Products DFW Plastics
<b>METER BOX, TRAFFIC LID REINFORCED FIBERGLASS</b>	1" 2"	J&R Concrete
<b>METER STOP, ANGLE COMPRESSION X METER</b>	1" Bronze Angle Meter Stop (Ball Valve) with 90 Degree Lock Wing, Inlet 110 Style Compression x Outlet Swivel Meter Nut	Ford BA43-444W-Q Jones J-1963W Mueller B24258-1 A. Y. McDonald Cambridge 210NL
<b>METER STOP, ANGLE COMPRESSION X METER</b>	2" Bronze Angle Meter Stop (Ball Valve) with 90 Degree Lock Wing, Inlet 110 Style Compression x Flange	Ford BFA43-777W-Q Jones J-1975WSG Mueller B-24276 A. Y. McDonald Cambridge 210NL
<b>METER, WATER</b>		District to Supply

**ELSINORE VALLEY MUNICIPAL WATER DISTRICT  
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<u>ITEMS</u>	<u>DESCRIPTION</u>	<u>MANUFACTURER</u>
<b>MORTAR, REPAIR</b>	Two Component, Lot Shrinkage, Cement Based with High Compressive and Bonding Strength	Sika top 122,123 STO CR 735, CR 740
<b>PIPE, COPPER TUBING</b>	1" and 2" type K Soft Seamless Tubing	Mueller Lee
<b>PIPE, DUCTILE IRON</b>	For Water Lines 4" and Larger Manufactured per AWWA C111, C115, C150, C151. Double Cement Mortar Lined.	American Pipe Pacific States U.S. Pipe
<b>PIPE, PVC C900</b>	For Water Lines 4" through 12" and 8" Gate Wells. Class 150 Minimum, and any AWWA Compliant.	Vinyletech North American Pipe
<b>PIPE, STEEL CEMENT MORTAR LINED AND COATED (CML&amp;C)</b>	Steel Cylinder, Per A W W A M11 and Section 15061. 10 Gage Minimum Wall Thickness (special approval required for other fabricators based on experience and quality history).	Ameron Northwest
<b>POLYETHYLENE ENCASEMENT</b>	8-mil Thick Polyethylene Encasement Sleeve for Ductile Iron Pipe (DIP) per AWWA C 105 and Recycled PVC, CML&C, or DIP Non-Purple Water Pipe.	PE encasement by US Pipe Blue for Potable Water Purple for Recycled Water
<b>PUMP, VERTICAL TURBINE</b>		ITT Goulds Pumps Peerless Pump Company Peabody Floway
<b>SERVICE SADDLE FOR ACP</b>	Cast Brass ASTM B62 Body with Silicone Bronze Double or Stainless Steel Straps, Outlet Sizes 1" and 2"	Ford 202B Jones J-979 Smith-Blair 323 Mueller Cambridge 810

**ELSINORE VALLEY MUNICIPAL WATER DISTRICT  
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<u>ITEMS</u>	<u>DESCRIPTION</u>	<u>MANUFACTURER</u>
<b>SERVICE SADDLE FOR PVC C900 AND DI PIPE</b>	Bronze or Brass Saddle with Stainless Steel four Bolt Strap(s), Thread Outlet for Sizes 1" and 2" for Pipe Sizes 4" through 12"	Ford 202BS Jones J-969 Mueller BR2S Series Smith Blair Romac 202BS AY McDonald 3846 Cambridge 812
<b>SERVICE SADDLE AND DI PIPE</b>	Stainless Steel Saddle with Stained Steel Six Bolt Strap, Thread Outlet for Sizes 1" and 2" for Pipe Sizes 16" and Larger	Ford FS202 Romac 305 JCM 438
<b>TAPE, WARNING/ IDENTIFICATION</b>	6" Wide, Warning/Identification (Non-Metallic) Marking Tape for Buried Facilities.	Calpico, Type 1 Line-Tec, Type B Terra Tape, Standard 250
<b>TAPPING SLEEVE FOR ACP, CI, DI, AND PVC PIPE</b>	Fabricated Stainless Steel Tapping Sleeve for 4" through 12" Hot Taps. Stainless Steel Bolts and Nuts and Full Mat Gasket.	Romac SST III Power Seal Smith-Blair 664/665 JCM 432
<b>TRACER BOX</b>		Copperhead or approved equal
<b>VALVE, AIR RELEASE AND VACUUM RELIEF</b>	Pressure Air Release and Vacuum Relief Valve, Reinforced Nylon/Cast Iron Body, Stainless Steel Float, Bronze Plug	APCO, Cla Val, Valmatic, ARI
<b>VALVE, BALL</b>	Bronze, Straight, Compression x Compression for 1" and 2" Valves (Threaded, both male & female)	Ford B44-444-Q, B44-777-Q Jones J-1949SG Mueller B-25209 Cambridge 202NL
<b>VALVE, BALL</b>	Keyed MIP x MIP	



**ELSINORE VALLEY MUNICIPAL WATER DISTRICT  
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<u>ITEMS</u>	<u>DESCRIPTION</u>	<u>MANUFACTURER</u>
<b>VALVE, BALL WITH LOCKING TABS (Meter Customer Valve)</b>	2" Bronze, Straight, Compression x Compression with Locking Tabs and Brass Handle (Threaded both male & female, no locking tabs, S.H.)	Ford B44- 777 –QW Jones J-1949SGW Mueller B-25146 AY McDonald 6100 MW Cambridge 212NL
<b>VALVE, BALL (Meter Customer Valve)</b>	1" Bronze, Straight, Meter Swivel, MIP x MIP (Purple Handle for Recycled Water)	Ford HB 34S Jones J-1908W Mueller B-24351-1 AY McDonald HB6101M Cambridge 212NL
<b>VALVE, BREAK-OFF CHECK</b>	Break-off check valve for fire hydrants. Use when indicated on Approved Plans.	Long Beach LB 400
<b>VALVE, BUTTERFLY</b>	16" and Larger, A WW A C504, Class B. Thermosetting for Fusion Bonded Epoxy Coated and Lined (150 psi Max), Seat in the body.	Mueller Lineasal III Pratt Groundhog DeZurik BAW
<b>VALVE, DETECTOR CHECK</b>	Fire Detector Check	AMES 3000 SS Febco 806YD Wilkins 350DA, 950 DA
<b>VALVE, GATE, RESILIENT WEDGE (RWGV)</b>	4" through 12" Non-Rising Low Zinc Bronze or Stainless Steel Stem, Ductile or Cast Iron Body and Bonnet, Encapsulated Wedge per AWWA C509 or C515 with Epoxy Coated Interior. Manufactured to AWWA C509 or C515	American FC, Series 2500 Clow M&H Mueller (Compliant w/C509 or C515)
<b>VALVE, INSULATED BALL</b>	1" Bronze, Straight, Compression X Compression, Insulated Type	Mueller N-35209 Cambridge 301NL-M4HI4

**ELSINORE VALLEY MUNICIPAL WATER DISTRICT  
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<u>ITEMS</u>	<u>DESCRIPTION</u>	<u>MANUFACTURER</u>
<b>VALVE, LOCKABLE BALL</b>	3/4" and 1" Bronze Customer Shut-off(Ball Valve), Inlet FIP x Compression, Lockable Tabs, with Lever Handle	Ford B13-332W w/ HT34 B13-444W w/ HT34 Jones J-1908W Cambridge 212NLH
<b>VALVE, LOCKABLE BALL</b>	1-1/2" and 2" Bronze Customer Shut-off(Ball Valve), Inlet FIP x Compression, Lockable Tabs, with Lever Handle	Ford BF13-666W w/ HB-67S, BF13- 777W w/HB-67S Jones J-1913W Cambridge 212NLH
<b>VALVE, PRESSURE REDUCING</b>	For Water Main Pressure Reducing, 4" through 16"	Cla- Val 90G-01
<b>VALVE, PRESSURE REGULATING</b>	For Service Connections, 3/4" / 1"	Wilkins Watts Febco
<b>VALVE, WELL LID</b>	Ductile Iron Machined Frame with Ductile Iron Lid. See Standard Drawings for Markings	South Bay
<b>WATER TEST STATION ENCLOSURE</b>	12 Gauge Steel 8" x 36", Single Lockable Door, Powder Polyester Coated Potable Water Color: Safety Yellow Recycled Water Color: OSHA Safety Purple	Pipeline Products WTS-ELSI
<b>WARNING/ID TAPE</b>		Calpico, Type 1 Line-Tec, Type 1 T. Christy Enterprises, Type 1 Northtown DOT Sales
<b>WIRE, TRACER</b>	#10 AWG Solid Copper UF Type Wire, with Cross Linked Polyethylene Insulation. Blue in Color	Cosberg Industries Paige Baron Copperhead Industries Regency Wire & Cable

## ELSINORE VALLEY MUNICIPAL WATER DISTRICT ACCEPTED MATERIALS GUIDELINE FOR USE ON NEW CONSTRUCTION OF SEWER FACILITIES

<u>ITEM</u>	<u>DESCRIPTION</u>	<u>MANUFACTURER</u>
<b>CASING, END SEAL</b>	1/4" Thick Styrene Butadiene Rubber Sheet End Seal. Use 1" Wide Stainless Steel Bands.	Advanced Products & Systems Cascade Water Works Calpico CCI Products
<b>CASING, SPACER</b>	Polyethylene Casing Spacer Center Restrained Position Type with PVC Liner and Non-Metallic Anti-Friction Runners	Advanced Products & Systems, Inc (APS) Cascade Water Works Pipeline Seal & Insulator, Inc. (PSI) CCI Products
<b>DAMP-PROOFING</b>	Coating Systems used on the Exterior Surface of Manholes at and below Water Table	Kop-Coat, Bitumastic Super Service Black
<b>FLOWMETER</b>	Magnetic Flowmeter	Krohne Enviromag
<b>LINER SYSTEM</b>	PVC T -Shaped Liner System for Lining of Precast Manholes and Concrete Sewer Pipe	Ameron, T-Lok
<b>MANHOLE, FRAME AND COVER</b>	30" Nominal Diameter Cast Iron frame and Covers per ASTM A48, Class 30, with Machined Seats.	Alhambra Foundry Neenah South Bay Foundry
<b>MANHOLE, COATING</b>	Epoxy coating of manholes	Sancon Engineering Inc.
<b>MANHOLE, JOINT SEALANT</b>	Pre-formed, Cold Applied, Adhesive, Rope-Like, Butyl Rubber Gasket to form a Water Tight Seal Between Manhole Sections	Ramnek
<b>MANHOLE, PIPE CONNECTOR</b>	Rubber O-Ring Type Gasket for Pipe to Manhole Connection for Cast-In-Place Manholes and Cemented-In-Place Connections (for existing manholes)	Indiana Seal Company Fernco Press Seal GPK

## ELSINORE VALLEY MUNICIPAL WATER DISTRICT ACCEPTED MATERIALS GUIDELINE FOR USE ON NEW CONSTRUCTION OF SEWER FACILITIES

<u>ITEM</u>	<u>DESCRIPTION</u>	<u>MANUFACTURER</u>
<b>MANHOLE, PIPE CONNECTOR</b>	Rubber flexible Type Connector for Pipe to Manhole Connection for Precast Manholes	J-M Pipe PW Pipe
<b>MANHOLE, PRECAST CONCRETE</b>	Access Manholes for Sewer Mains (Grade Rings, Cones, Risers, and Bases) designed for H-20 Highway Loading	Old Castle Southwest Jensen JR Concrete Manhole Builders
<b>MANHOLE, T-LOCK LINED PRECAST CONCRETE</b>	PVC lined cones and riser for manholes	Old Castle RLS Solutions
<b>PIPE, PVC</b>	4" through 18" ASTM D 3034, SDR 35 21" through 54" ASTM D-1784 Sewer Pipe	Vinyltech Lamson Vylon North American Pipe
<b>PUMPS, SUBMERSIBLE</b>	Vortex or Non-Clog with 460 Volt, 3-Phase, 60 Hz Premium Efficiency Motor	ESSCO
<b>SADDLE</b>	4" and 6" Wye and Tee Connections for Sewer Line Installations	Certainfeed Inserta Tee J-M Pipe
<b>VALVE, AIR RELEASE</b>	Pressure Air Release and Vacuum Valve, Stainless Steel Body and Internal Metal Parts	Vent-o-Mat
<b>VALVE, BACKWATER</b>	4" Extendable ABS Valve	Clean Check, Inc. Mainline Backflow Products Inc.
<b>WARNING/IDENTIFICATION TAPE</b>	Warning/identification Tape 6" Wide, Colored Green, with Continuous Warning "CAUTION: SEWER LINE BURIED BELOW"	Calpico, Type I Line-Tec, Type B Thor, Elast Tec Northtown Dot Sales