CONSTRUCTION MANUAL
2022

STANDARD DRAWINGS AND SPECIFICATIONS FOR THE CONSTRUCTION OF POTABLE AND RECYCLED WATER FACILITIES

SANTA CLARITA VALLEY WATER AGENCY
ENGINEERING SERVICES SECTION
CONSTRUCTION MANUAL

STANDARD DRAWINGS AND SPECIFICATIONS FOR THE CONSTRUCTION OF POTABLE AND RECYCLED WATER FACILITIES

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7/20/2022

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Date

PREFACE

The General Notes, Specifications and Standard Drawings, Approved Materials List contained herein, set minimum standards for working relationships, workmanship, and quality. These documents are provided as construction standards for proposed improvements or additions to the Santa Clarita Valley Water Agency (SCVWA) potable and recycled water systems. The use of these documents should not be construed as a substitute for engineering each individual project. Each project will have calculations, specifications and drawings prepared by an appropriately State of California licensed engineer.

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GENERAL WATER NOTES

The following general water notes shown HEREON shall be on all water plans. The Applicant shall contact the engineering services section for the latest general water notes. The notes may change at any time with or without notice and it is the sole responsibility of the Applicant to verify and check with the Agency on the latest General Water Notes.

Updated as of July 2022

1. ALL WORK AND MATERIALS SHALL BE APPROVED BY SCVWA AND SHALL BE IN ACCORDANCE WITH WATER ORDINANCE RULES AND REGULATIONS INCLUDING THE MOST CURRENT STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION (SSPWC) "GREENBOOK", LATEST EDITION SCVWA STANDARD SPECIFICATIONS AND DRAWINGS, CAL-OSHA REQUIREMENTS, NSF 61, AWWA STANDARDS, REGULATIONS STATED IN CALIFORNIA HEALTH LAWS RELATED TO BOTH POTABLE AND RECYCLED WATER (CALIFORNIA HEALTH AND SAFETY CODE AND TITLES 17 AND 22 OF THE CALIFORNIA CODE OF REGULATIONS), RULES AND REGULATIONS SET FORTH BY THE DEPARTMENT OF INDUSTRIAL RELATIONS (DIR), TITLE 28 OF THE LOS ANGELES COUNTY CODE OF ORDINANCES, THE STATE WATER RESOURCES CONTROL BOARD RECYCLED WATER POLICY AND REGULATIONS, AND ANY OTHER STANDARDS OR REGULATIONS THAT SCVWA WILL INVOKE FROM TIME TO TIME.

2. PIPE STORAGE, HANDLING, LAYING AND JOINTING SHALL BE PERFORMED IN ACCORDANCE WITH AWWA STANDARDS AND THE PIPE MANUFACTURER'S PUBLISHED INSTALLATION INSTRUCTIONS UNLESS OTHERWISE INDICATED ON THE PLANS OR BY SCVWA. THE CONTRACTOR SHALL ONLY USE THE PROPER MEANS, METHODS, AND TOOLS FOR PIPE INSTALLATION.

3. STORED MATERIAL SHALL BE KEPT SAFE FROM DAMAGE. THE INTERIOR OF ALL PIPE, FITTINGS, AND OTHER APPURTENANCES SHALL BE KEPT FREE OF DIRT AND FOREIGN MATTER. MATERIALS SHALL BE PLACED ONTO WOOD TIMBERS OR OTHER SUITABLE SUPPORTS ON LEVEL GROUND, AVOIDING IMPACT. SEE AWWA M41 11.2.3 AND AWWA C600 6.1.4 FOR REFERENCE. SCVWA RESERVES THE RIGHT TO REJECT ANY MATERIAL AT ANY TIME FOR ANY CAUSE.

4. ALL APPROVED PIPE AND MATERIALS SHALL NOT BE STORED WITH ANYTHING THAT IS NOT NSF 60/61 APPROVED FOR DRINKING WATER, OR ANY CHLORINE AGENTS.

5. THE CONTRACTOR AND DEVELOPER SHALL ALWAYS HAVE A DESIGNATED EMPLOYEE RESPONSIBLE FOR ACCESSING/UPDATING PROCORE ON THE JOB SITE.

6. IT IS THE CONTRACTOR'S RESPONSIBILITY TO HAVE A PERSON TRAINED AND IDENTIFIED AS A COMPETENT PERSON IN CAL-OSHA'S EXCAVATION STANDARD ON-SITE DURING ALL EXCAVATION AND CONSTRUCTION ACTIVITIES.

7. IT IS THE OWNER'S AND/OR DEVELOPER'S RESPONSIBILITY TO DETERMINE THAT THE REQUIRED FIRE FLOW IS AVAILABLE. QUESTIONS RELATING TO FIRE FLOW CAN BE SUBMITTED TO FIREFLOW@SCVWA.ORG.

8. PRIOR TO COMMENCING ANY WORK, THE DEVELOPER/CONTRACTOR SHALL SUPPLY A FULL PROJECT SCHEDULE IN AN APPROVED FORMAT, A TESTING PLAN, HAVE ALL SUBMITTALS APPROVED, AND HAVE COMPLETED A PRE-CONSTRUCTION MEETING WITH SCVWA. IT IS THE DEVELOPER/CONTRACTOR'S RESPONSIBILITY TO UPDATE AND RESUBMIT THE SCHEDULE AS NEEDED OR AS REQUESTED BY SCVWA TO MAINTAIN A CURRENT STATUS.

9. CONTRACTOR IS RESPONSIBLE FOR ACQUIRING ALL NECESSARY PERMITS BEFORE ANY WORK BEGINS.

10. PRIOR TO COMMENCING ANY WORK, THE CONTRACTOR SHALL OBTAIN A VALID USA DIG ALERT TICKET NUMBER AND FOLLOW ALL APPLICABLE DIG ALERT LAWS. A VALID USA DIG ALERT TICKET NUMBER MUST BE MAINTAINED THROUGHOUT THE DURATION OF WORK.

11. THE CONTRACTOR IS RESPONSIBLE FOR POTHOLING, SURVEYING, FIELD VERIFYING AND PROVIDING DOCUMENTED MEASUREMENTS AND LOCATION OF ALL CONNECTION POINTS, UTILITIES, STRUCTURES, AND CROSSINGS PRIOR TO THE START OF CONSTRUCTION AT NO ADDITIONAL COST TO SCVWA. IT IS THE CONTRACTOR'S RESPONSIBILITY TO PROTECT ALL KNOWN AND MARKED EXISTING FACILITIES FROM DAMAGE DURING CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DAMAGE TO KNOWN UTILITIES AND RELATED EQUIPMENT, STRUCTURES, AND IMPROVEMENTS AS A RESULT OF ITS OPERATIONS AND WILL BE REQUIRED TO REPAIR OR REPLACE SAME TO THE SATISFACTION OF, AND AS DIRECTED BY, THE ENGINEER AND/OR SCVWA.

12. THE CONTRACTOR SHALL REQUEST INSPECTION IN PROCORE FROM SCVWA AT LEAST 7 SCVWA BUSINESS DAYS BEFORE STARTING WORK. THE CONTRACTOR SHALL MAKE ARRANGEMENTS FOR INSPECTION EACH DAY AT LEAST ONE FULL SCVWA BUSINESS DAY IN ADVANCE. IF THE CONTRACTOR CANCELS WORK FOR LONGER THAN 3 SCVWA BUSINESS DAYS, A NEW RESTART REQUEST WITH A MINIMUM 7 SCVWA BUSINESS DAY NOTICE MUST BE SUBMITTED IN PROCORE.

13. CONTRACTOR SHALL NOTIFY AND SUBMIT A TESTING SCHEDULE IN PROCORE 5 SCVWA BUSINESS DAYS IN ADVANCE FOR REVIEW AND RESPONSE.

14. PRIOR TO PERFORMING ANY INTERCONNECTION WORK, THE CONTRACTOR SHALL SUBMIT A WORKING SCHEDULE AND PROCESS IN PROCORE TO BE APPROVED BY THE AGENCY.

15. CONTRACTOR SHALL NOTIFY SCVWA A MINIMUM OF FOURTEEN (14) SCVWA BUSINESS DAYS PRIOR TO INTERRUPTION OF WATER SERVICE AND OPERATION OF ISOLATION VALVES. VALVES SHALL BE OPERATED BY OR UNDER THE SUPERVISION OF SCVWA PERSONNEL.

16. IF REQUIRED, DEVELOPER/CONTRACTOR WILL APPLY WITH SCVWA (661 294-0828/ CONSTRUCTIONMETERFLANGED@SCVWA.ORG) FOR A TEMPORARY METER AND COMPLY WITH SCVWA SPECIFICATIONS REGARDING CONSTRUCTION OF TEMPORARY WATER SERVICE. ALL TEMPORARY CONNECTIONS WILL REQUIRE INSTALLATION OF APPROVED BACKFLOW PREVENTION ASSEMBLY.

17. POTABLE AND RECYCLED WATER METER LINES SHALL BE INSTALLED PERPENDICULAR TO WATER MAINS AT PROPERTY LINES AND SHALL NOT TO BE LOCATED IN DRIVEWAYS AND/OR CUSTOMER'S WALKWAYS OR HARDSCAPE. POTABLE WATER METER LINES SHALL HAVE A MINIMUM PARALLEL DISTANCE OF 5-FEET AND 1-FOOT VERTICAL CLEARANCE FROM ANY NON-POTABLE WET UTILITY.

18. DEVELOPER/OWNER SHALL BE RESPONSIBLE TO PROVIDE SURVEY STAKES TO CORRECTLY LOCATE THE WATER FACILITIES. SURVEY STAKES SHALL PROVIDE GRADE, ALIGNMENT, AND NON-POTABLE WET UTILITY CROSSINGS. CUT SHEETS MAY BE REQUIRED. ALL WORK SHALL HAVE SURVEY LOCATIONS PROVIDED PRIOR TO INSTALLATION.

19. FITTINGS SUBJECT TO THRUST SHALL BE INSTALLED WITH CONCRETE THRUST BLOCK RESTRAINTS POURED AGAINST UNDISTURBED SOIL AND CURE PER DESIGN ENGINEER SPECIFICATIONS.

20. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING CERTIFIED COMPACTION TEST RESULTS AT A MINIMUM OF 100 LINEAR FEET INTERVALS FOR THE TRENCH BACKFILL AND TRENCH BOTTOM AT 95 PERCENT. TEST SHALL BE CONDUCTED FOR SUBBASE AND AT GRADE IN ACCORDANCE WITH SCVWA STANDARD SPECIFICATIONS AND SECTION 211 OF SSPWC. THE AGENCY RESERVES THE RIGHT TO REQUIRE ADDITIONAL TEST AS DETERMINED BY THE PROJECT ENGINEER OR INSPECTOR.

21. ALL PIPE, FITTING, AND VALVE JOINTS SHALL BE RESTRAINED PER DIPRA AND DESIGN STANDARDS. IF BENDS, VALVES OR OTHER FITTINGS NOT SHOWN ON THE PLANS, ARE PROPOSED TO BE INCORPORATED DURING CONSTRUCTION, CONSULT WITH THE ENGINEER FOR PROPER RESTRAINT DISTANCES.

22. CONTRACTOR SHALL PERFORM ELECTRICAL CONTINUITY TEST OF THE TRACER WIRE SYSTEM AND PROVIDE THE AGENCY WITH THE RESULTS VIA OFFICIAL LETTERHEAD DOCUMENTATION SUBMITTED IN PROCORE. CONTINUITY TEST SHALL BE PERFORMED AFTER FINAL PAVING.

23. ALL PIPES, FITTINGS, AND FIXTURES CONVEYING WATER SHALL BE "LEAD FREE" AS DEFINED BY AB 1953.

24. S.C.E. FACILITIES SHOWN ON THIS PLAN (IF APPLICABLE) ARE FOR BIDDING AND INFORMATIONAL PURPOSES ONLY. CONTRACTOR MUST REFER TO S.C.E. DRAWINGS FOR S.C.E. FACILITIES REQUIREMENTS AND INSTALLATION WORK.

25. TRAFFIC CONTROL SHALL BE IN ACCORDANCE WITH THE CURRENT STATE OF CALIFORNIA MANUAL OF TRAFFIC CONTROLS, OR PER LOCAL JURISDICTION REQUIREMENTS.

26. MINIMUM HORIZONTAL AND VERTICAL SEPARATION OF PROPOSED WATER PIPELINE FROM EXISTING FACILITIES SHALL BE IN ACCORDANCE WITH SECTION 64572, TITLE 22, CALIFORNIA CODE OF REGULATIONS (CCR) FOR SEPARATION REQUIREMENTS OR SCVWA REQUIREMENTS OF ONE (1) FOOT MINIMUM VERTICALLY, WHICHEVER IS MORE STRINGENT. ANY WAIVERS TO THE SEPARATION REQUIREMENTS SHALL BE APPROVED BY THE DIVISION OF DRINKING WATER (DDW) PRIOR TO THE START OF CONSTRUCTION IN ACCORDANCE WITH SECTION 645551.100, TITLE 22, CCR.

27. NO WATER METERS WILL BE ISSUED UNTIL ALL PUNCH LIST ITEMS HAVE BEEN SATISFIED.

28. FOR ANY NEW FACILITY CONSTRUCTED (I.E., TANK(S), PUMP STATION(S), WATER MAINS, ETC.) THE DEVELOPER MUST PROVIDE SCVWA WITH A RECORD OF SURVEY AND PROPER MONUMENTS MUST BE SET AT PROPERTY CORNERS, AND ALL EASEMENTS MUST BE STAKED BY A LICENSED LAND SURVEYOR.

29. ANY SURVEY MONUMENTS DESTROYED BECAUSE OF CONSTRUCTION ACTIVITIES SHALL BE RESTORED IN KIND BY A LICENSED LAND SURVEYOR, AND THE APPROPRIATE CORNER RECORD MUST BE FILED WITH THE COUNTY OF LOS ANGELES. IT IS THE CONTRACTOR’S RESPONSIBILITY TO NOTE ANY MONUMENTS DESTROYED DURING CONSTRUCTION ACTIVITIES.

30. CONTRACTOR SHALL RESTORE ALL PAINTED STREET MARKINGS IN KIND IF DISTURBED.

31. AT THE END OF THE CONSTRUCTION DAY, THE CONTRACTOR SHALL COVER THE END OF LINE "WATER PIPELINE" AND ANY WATER APPURTENANCES WITH PLASTIC WRAP AND TAPE. THE

CONTRACTOR SHALL TAKE ANY OTHER MEASURE NECESSARY TO PROTECT THE INTEGRITY, HEALTH AND SAFETY OF THE "WATER PIPELINE" BEING WORKED ON.

32. ALL WATER SYSTEM INSTALLATION MUST BE PERFORMED BY A CONTRACTOR POSSESSING A VALID CLASS "A" STATE OF CALIFORNIA CONTRACTOR'S LICENSE.

33. ALL WATER SERVICE CONNECTIONS (DOMESTIC, FIRE & IRRIGATION) MUST HAVE A USC APPROVED BACKFLOW PREVENTION ASSEMBLY FOR THE DEGREE OF HAZARD AS DETERMINED BY THE SCVWA CROSS CONNECTION CONTROL PROGRAM. BACKFLOW ASSEMBLIES MUST BE REGISTERED WITH SCVWA PRIOR TO TESTING. FOR ADDITIONAL INFORMATION ON BACKFLOWS VISIT THE SCVWA WEBSITE YOURSCVWATER.COM. FOR BACKFLOW REGISTRATION AND COORDINATION OF SITE SURVEYS AND TESTING, EMAIL BACKFLOW@SCVWA.ORG.

34. ENCASEMENTS SHALL BE ONE SACK SLURRY PER LATEST "GREENBOOK" STANDARD, UNLESS OTHERWISE DIRECTED.

35. AGENCY FACILITIES WITH DEPTH OF COVER OF 30” OR LESS SHALL BE ENCASED IN ONE SACK SLURRY AND ANY VALVES SHALL BE BUTTERFLY VALVES.

36. STATIONING IS BASED ON WATER PIPELINE CENTERLINE AND NOT STREET CENTERLINE UNLESS OTHERWISE NOTED ON THE PLANS.

37. THE PROJECT PLANS ARE DESIGNED AS TO NOT CONTAIN ANY REPAIRS PRIOR TO ANY SYSTEM TIE-IN AND ACTIVATION. SCVWA HAS THE RIGHT TO REJECT ANY REPAIRS COMPLETED WITHIN THE NEWLY DESIGNED PROJECT. SCVWA CAN REQUIRE THE PIPELINE, EITHER IN ITS ENTIRETY OR SECTIONS OF, TO BE REPLACED WITH ALL NEW MATERIALS WHICH MEET ALL THE PROJECT REQUIREMENTS AT ANY TIME FOR ANY CAUSE.

38. MUNICIPEX AND/OR ANY MATERIAL CONTAINING EPDM SHALL BE STORED OUT OF DIRECT SUNLIGHT AND PROTECTED FROM EXCESSIVE HEAT. MATERIALS THAT HAVE SUFFERED ADVERSE EFFECTS FROM EXCESSIVE HEAT AND/OR ULTRAVIOLET RADIATION EXPOSURE ARE SUBJECT TO REJECTION.

39. CONTRACTOR SHALL SUBMIT A FLUSHING, CHLORINATION, AND TEST PLATE LOCATION PLAN (PER AWWA STANDARDS) FOR APPROVAL PRIOR TO START OF CONSTRUCTION.

END OF GENERAL WATER NOTES

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PART I - STANDARD SPECIFICATIONS

SECTION 01: GENERAL PROVISIONS AND REQUIREMENTS

01100 GENERAL

These specifications are to be used to establish standards of work, materials, and construction procedures for improvements to the water system, potable and recycled, of the Santa Clarita Water Agency (Agency). These specifications are intended to establish general requirements and technical standards for all pipeline work within the Agency. Wherever there are differences between these standards and other county, state, or federal regulations, the most stringent requirement shall govern. The Agency reserves the right to make changes to these specifications at any time. The Chief Engineer or their designate shall decide all questions of interpretation of "good engineering practice" being guided by the various standards and manuals to include those published by the American Water Works Association (AWWA) and latest green book standards.

01101 SUPPLIMENTARY SPECIFICATIONS

Wherever reference is made within these documents to certain standard specifications, the reference shall be construed to mean the standards, with all subsequent amendments, changes, or additions as thereafter adopted and published that are in effect at the date of approval of the plans and specifications. Standard specifications and documents referenced herein, and their abbreviations include, without limitation, the following:

AASHTO	American Association of State Highway and Transportation Officials
ACI	American Concrete Institute
AI	The Asphalt Institute
AISC	American Institute of Steel Construction, Inc.
AISI	American Iron and Steel Institute
ANSI	American National Standards Institute (formerly USASI, USAS, ASA)
ASCE	American Society of Civil Engineers
ASME	American Society of Mechanical Engineers
ASTM	American Society for Testing and Materials
AWS	American Welding Society
AWWA	American Water Works Association
CALTRANS	California Department of Transportation
DDW	California Water Resources Control Board Division of Drinking Water
EPDM	Ethylene Propylene Diene Monomer Rubber
HMWPE	High Molecular Weight Polyethylene
LACDPW	Los Angeles County Department of Public Works
LADWP	Los Angeles Department of Water & Power
MIL	Military Specification (leading symbol)
NFPA	National Fire Protection Association

OSHA	Occupational Safety and Health Administration, U.S. Dept. of Labor
SSPC	Steel Structures Painting Council State
SSPWC	Standard Specification for Public Works Construction
SPEC.	California Standard Specifications, Department of Transportation, Division of Highways
UBC	Uniform Building Code
UL	Underwriters' Laboratories, Inc.
WATCH	Work Area Traffic Control Handbook

01102 DEFENITION OF TERMS

Whenever in these specifications or other documents where these specifications govern and the following terms are used, they shall be defined as follows (terms not shown here shall be defined as their common knowledge definition):

Acceptance

Shall mean that the water system has been installed to Agency specifications and the agency has issued a notice of completion and has accepted the facilities, starting the (2) year warranty period.

Agency

Santa Clarita Valley Water Agency.

Agent

A person authorized to act for the Agency or the Applicant through employment, by contract or apparent authority.

Agreement

The written Agreement between the Agency and the Applicant providing for the construction of the improvement by the Applicant or his Contractor.

Applicant

Shall mean any property owner, firm, or corporation who makes application for Agency service or enters into an Agreement with the Agency.

Approved (or equal)

Unless otherwise indicated, this shall mean approval by the Agency.

Backbone Pipeline

A main pipeline that delivers flow to a main section of the service area.

Board

The Board of Directors of the Santa Clarita Valley Water Agency.

City
City of Santa Clarita

Contract
A written agreement with specific terms between the Agency and the Applicant, the Agency, and its Agent, and/or the Applicant and its Agent.

Chief Engineer
A registered civil engineer employed by the Agency and designated by the board to act on Agency's behalf.

Deed (Grant Deed)
A written document which transfers title or an interest in real property to another between Applicant and/or Agency (grantor/grantee).

Dedication
The giving of land by an Applicant to the Agency.

Developer
An individual or organized group, partnership, corporation, etc., proposing to subdivide or improve land that will require water from the Agency's system.

Easement
The right to use real property of another for a specific purpose.

Equal
Alike: uniform; on the same level with respect to efficiency, worth, value and amount.

Competent Person
One who can identify existing and predictable hazards in the surrounding or working conditions which are unsanitary, hazardous, or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate them.

Contract
A written Agreement executed by and between the Applicant and the Contractor covering the performance of the work.

Convey
To transfer title of real property from one grantor to another grantee by a written deed.

Contractor
The individual, partnership, association, corporation, entity (public or private), or combination thereof, who has entered a Contract with the Applicant or into a Public Contract with the Agency for performance of the work pursuant to these specifications. Except as to Public Contracts, wherever reference is made to Contractor in the Specifications, such reference shall include the Contractor in his own capacity and in his capacity as authorized agent and representative of the Applicant. Accordingly, where the Specifications require the Contractor to perform certain acts, or hold the Contractor responsible for certain costs, expenses or liabilities, or the like, such requirements and responsibilities shall be equally applicable to and binding upon the Applicant.

County
County of Los Angeles

Customer
Any person, owner, occupant, firm, partnership, corporation, municipality, cooperative organization, governmental agency, political entity, etc., provided with water service by water agency and is the party billed for payment of bills issued for use of utility service at a given premises. This definition is intended to create billing and payment responsibilities but does not limit the need to afford occupants other protection under this chapter (e.g., evictions, emergency).

Distribution Main
Water mains, which run along public streets or appropriate right of way and are used to distribute water to individual consumers.

Distribution System
Water mains, together with all associated and necessary valves, fire hydrants, meters, service laterals, and associated material and equipment, which carry and distribute water, both potable and recycled, to individual consumers.

Engineer
A registered civil engineer appointed by the Agency acting either directly or through his properly authorized agent, engineers, assistants, inspectors, and superintendents, unless otherwise qualified.

Final Completion
Shall mean the water system is complete and active, street improvements are complete and required title insurance policies for easements, if any, are provided. The Developer shall contact the Agency's Inspector and request a punch list.

Fire System Activation Letter

The letter informing Los Angeles County Fire Department that the water system and fire hydrants are available for protection. As-built drawings must be submitted, easement and/or deed documents must be recorded, and title insurance policies to said easements and/or deeds provided prior to issuance of letter. Also, pipe identification wires and compound meters shall be tested if included in the project.

Owner
See Applicant and Customer.

Inspector – Owner's Representative
The personal representative of the Agency. An employee or agent of the Agency engaged to observe and record field compliance with design criteria, plans and construction standards.

Lease
A written agreement in which the Applicant and/or Agency conveys land, property and/or services to another for a specific time as defined by the written agreement.

Lessee
Applicant and/or Agency that holds real or private property under lease.

Lessor
Applicant and/or Agency that transfer property by a contract.

Grantee
Applicant and/or Agency that receives tittle to real property from the Grantor by grant deed or quitclaim deed.

Grantor
Applicant and/or Agency who transfers tittle in real property to another by grant deed or quitclaim deed.

Plans
The official scale and full-size approved detail drawings, or exact reproductions thereof, which show location, character, dimensions, elevations, and details of the work water pipelines, tanks, pump stations, wells, pressure reducing stations, turnouts, wells, and valves.

Public Contract Work
Work done pursuant to a Contract between the Contractor and the Agency.

Private Engineer
A registered civil engineer employed by the Applicant.

Procore
Preferred Agency cloud-based platform used for construction management.

Quitclaim Deed
A real property deed which transfers (conveys) only that interest in the property in which the grantor has title.

Recycled Water Main
A distribution and/or transmission conveying recycled water.

Right-of-Way
The right to cross/pass over or through real property usually based upon an Easement and/or Deed (Grant or Quitclaim).

Specifications
The STANDARD SPECIFICATIONS FOR CONSTRUCTION published by Santa Clarita Valley Water Agency. Should other specifications used for public contracts conflict with said Standard Specifications, the job-specific specifications will govern.

Standard Drawings
The Standard Drawings, a part of the STANDARD SPECIFICATIONS FOR CONSTRUCTION published by Santa Clarita Valley Water Agency, unless otherwise qualified.

Transmission Main
Water main pipeline(s) receiving either potable or recycled water from a Trunk Line, pumping station, or reservoir, which delivers water to Distribution Mains or distributes it to individual consumers.

Water Main
A Distribution and/or Transmission conveying potable and/or recycled water.

Work
All labor, materials, equipment, transportation, supervision, or other facilities necessary to complete the improvement provided for in the Agreement.

Private Contract Work
Work done pursuant to a Contract between the Contractor and the Applicant.

Public Contract Work
Work done pursuant to a Contract between the Contractor and the Agency.

Private Engineer
A registered civil engineer employed by the Applicant.

Water Purveyor
Agency, district, or company supplying water.

Approved, Directed, Satisfactory, Proper, Acceptable, Required, Necessary and/or Equal
Shall be defined as considered approved, directed, satisfactory, proper, acceptable, required, necessary, or equal in the opinion of the Agency.

01103 ABBREVIATIONS

The abbreviations used in the plans and specifications are abbreviations the meanings of which are established by general usage through the industry.

01104 PLANS SUBMITTED BY PRIVATE ENGINEERS

First submittal of water improvement plans shall include a letter for Agency file and record purposes that transmits the following described documents, drawings, and material:

- A Conceptual Plan showing how the project will be served
- Two (2) prints of an approved tentative map
- One (1) copy of the conditions of approval of said tentative tract map
- Full name, address, and telephone number of the developer
- The name of the project engineer representing the firm on the subject project
- Two (2) prints of the tentative map on which the approved, preliminary water system, including required connections to sources of supply, are legibly shown
- A plan check deposit fee
- Copies of any other maps, plans, surveys, fire department requirements, improvements, tract, or parcel map and etc. that will help expedite the preliminary plan check and that will be required by Santa Clarita Valley Water Agency prior to approving plans.
- After final plan check is completed, submit a copy in digital format (PDF).

Note: In lieu of print copies, of plans and maps, and signatures the Agency is accepting digital copies.

01104.1 COMPLETE SET OF PLANS SHALL INLCUDE THE FOLLOWING:

01104.1A COVER SHEET SHALL INCLUDE THE FOLLOWING:

1. Benchmark (Two benchmarks must be referenced) and Basis of Bearings.
2. General Notes.
3. Typical street cross section with pavement section shown.

4. One (1) inch equal three hundred (300) feet index map showing entire tract boundary, lot lines, existing and proposed water mains, water main sizes, existing valves, proposed fire hydrant locations, and sheet numbers.
5. Vicinity map.
6. Full list of materials (size, length of pipe, number of domestic and irrigation services).
7. Name, address and telephone number of Engineer and Developer.
8. Approval and revision blocks.
9. Fire Department approval stamped on every page. Any previously approved fire department stamped drawings with revisions will not be accepted and will require reapproval from Fire Authority.
10. All reference standard drawings must be listed.

01104.1B PLAN AND PROFILE SHEET SHALL INCLUDE THE FOLLOWING:

1. Horizontal scale of one (1) inch equal forty (40) feet minimum.
2. Vertical scale of one (1) inch equal four (4) feet but not more than eight (8) feet.
3. Show all existing and proposed utilities.
4. Existing and proposed surface profiles.
5. Approval and revision blocks.
6. North arrow.
7. Curb, gutter, sidewalk, and driveway approaches.
8. Property lines, lot lines and tract boundaries.
9. Complete dimensioning for entire right-of-way of subject street and adjoining streets.
10. Waterline stationing of all fittings, appurtenances, curves, and intersections.
11. All proposed service lines and fire hydrants.
12. Side and Elevation profile view showing all sewer and utility crossings, the proposed water main, minimum cover, waterline stationing, and fittings for transitions and invert elevations of conflicting utilities.
13. Pipe curve data.
14. Line data.
15. Detail views as necessary for transitions, etc.
16. Label and dimensioning for proposed water main.
17. Show all easement and deeds to be dedicated to the Agency.
18. Show other utility easements that may affect design of water facilities.
19. Curbs, existing and/or proposed curbs shall be identified with dimensions from the street centerline shown.
20. Existing and proposed improvements shall be shown including but not limited to, curb and gutter, edge or pavement, power poles, driveways, sidewalks, and fences.
21. All submitted plans shall be civil engineering drawings scale not an architectural or landscape drawing scale.
22. Show pipe deflection calculations for each plan sheet.

01104.1C PLANS AND PROFILE SHEETS IN DIGITAL FORMAT SHALL INCLUDE THE FOLLOWING:

1. Be in NAD 1983 state plane zone 5 coordinates or current industry standard accepted by the Agency.
2. Be to actual scale.
3. In decimal degrees – not architectural units.
4. The main should not be broken for aesthetic purposes (i.e., gaps at valves, gaps for text) the main should be continuous and broken only at intersections.
5. Show entire lot outline on drawings.
6. Facility points (valves, fire hydrants, blow offs, etc.) should be snapped to the line or the end point of the main line.
7. The acceptable format for digital submissions shall be the latest edition of AutoCAD (DWG) and ESRI ArcGIS file types.

01104.1D DESIGN CRITERIA FOR NEW WATER SYSTEM IMPROVEMENTS SHALL INCLUDE THE FOLLOWING:

1. Water mains shall be min six (6) feet from face of curb, five (5) feet horizontal (min for sewer wye connections and ten (10) feet from sewer mains, measured from outer diameter to outer diameter of pipe), and one (1) foot vertical separation from other utilities. For sewer, see Standard Drawing Numbers WP-126 and WP-131.
2. Water main depths shall be 36” minimum to top of pipe, and 55” maximum depth to the bottom of the water main (flowline).
3. Water mains running parallel will have a minimum separation of 36” OD to OD (outside diameter).
4. Project shall have two (2) points of connection/sources of supply unless exceptional circumstances are approved by Agency.
5. All water mains must loop (no dead ends) if possible.
6. Valves shall be located at public right-of-way and property line prolongations.
7. High points shall have air/vacuum release valves.
8. Low points, end points of pipelines and edges of pressure of zones when are together shall have a blow off, and air release valve, see Standard Drawing Numbers WP-111, 112, 114, 115, 116 and 142.
9. All fittings and valves shall be restrained and have restrained joints; extend restrained joints per DIPRA and AWWA thrust restraining requirements on both sides of the fitting. Provide calculations for design reviews.
10. Per Los Angeles County Fire Department Regulations, fire hydrants are to be located on the same side of the street as the main wherever possible. Reflective blue dots to be placed six (6) inches from centerline toward the fire hydrant.
11. Hydrants and Fire Services, water service laterals 3-inch and later, shall be Ductile Iron Pipe and be fully restrained from valve to hydrant/backflow and/or end of fire service, See Standard Drawing Numbers WP-103 and 104.
12. Agency drain lines will be Green SDR 35 and any fitting

01104.2 ADDITIONAL SUBMITTAL NOTES

A plan layout shall also be provided in 300 scale index map per Section 01104.1A showing all property lines and approved water line locations.

Plans for private contract work shall be checked by the Agency and shall be approved by the Agency prior to starting work.

Plans submitted to the Agency for approval shall have thereon the name, phone and registration number of the private engineer who prepared the plans and the name and phone number of the engineering firm and the name, phone, and registration number of the private engineer under whose direction the plans were prepared and the name and phone number of the developer. Such plans shall be free of advertising, insignia, labels, emblems, seals, or other markings not relevant to the work. Plans are to be presented in a neat, concise, and professional condition.

Upon the approval of the plans, the original tracings, and a predetermined number of sets of the plans must be returned to the Agency. Approval of plans by the Agency will not relieve the Applicant or private engineer of any responsibility because of errors in the plans either by commission or omission. Such errors, when brought to the attention of the private engineer by the Agency, shall be promptly remedied as herein provided.

After plans have been approved and filed, changes may be made in the plans only upon approval of the Agency. To obtain such approval, the private engineer shall first submit one set of prints showing the proposed changes marked-up in red. After approval of changes, one set of paper plans and digital copies of the approved revised plans shall be submitted to the Agency.

If construction operations are not started within twelve (12) months of the date of approval, the plans must be re-submitted for plan check prior to construction. The re-submitted plans will be checked for conformance with the criteria current at the time of re-submittal. The cost of rechecking plans will be paid by the developer as determined in section 1.5.

The private engineer shall prepare "RECORD DRAWINGS" on prints of the latest revised plans clearly showing all changes in location and elevation of constructed improvement prior to the project being considered complete. These drawings shall show the configuration, manufacturer, and date of manufacture of all valves.

The private engineer shall submit the "RECORD DRAWINGS" to the Agency for final inspection and approval. Upon receipt of such approval, the private engineer shall correct and deliver the "as-built" drawings and digital plans to the Agency not later than thirty (30) days after receipt of such approval. If “as-built” drawings are not submitted to Agency by (30) days after receipt of such approval, no water services will be provided or activated by the Agency.

01105 EASEMENT/ROW DOCUMENTS REQUIREMENTS

All easement documents and closure calculations are to be prepared and submitted on the Agency's approved format and provided along with plans submitted for plan check review. See Appendix B.

Prior to the approval of water system plans, all easement documents must be approved by the Agency.

Grant deeds for easements are required to be executed by the grantor, resubmitted to the Agency, and have the Affidavit of Acceptance by the Agency attached to same prior to the testing and tie-in of the water system. See Appendix B.

All required easements will be recorded and a Title Insurance Policy for same in the minimum amount of $25,000.00 provided to the Agency prior to the testing and tie-in of the water system.

01106 COMPLIANCE WITH LAWS AND REGULATIONS

The Contractor shall keep himself informed of all laws, ordinances, and regulations in any manner affecting those employed on the work, or the materials used in the work, and of all orders and decrees of bodies or tribunals having any jurisdiction or authority over the same. The Contractor shall always and at no expense to the Agency observe and comply with, and shall require all his agents, employees, contractors, and subcontractors to observe and comply with all such applicable laws, ordinances, regulations, orders, and decrees in effect or which may become effective before completion of the work.

Unless otherwise explicitly provided in these specifications, all permits, and licenses required by other agencies necessary to the prosecution of the work shall be secured by the Agency.

01107 PROTECTION OF PERSONS AND PROPERTY

The Contractor shall provide for the protection of all persons and property as herein specified. Attention is called to "General Industry Safety Orders" and "Construction Safety Orders" of the California State Department of Industrial Relations, Division of Industrial Safety, to which the Contractor is required by law to conform. The Contractor shall provide himself with copies of these rules and orders. To the extent applicable, the Contractor shall also comply with the provisions of the Safety and Health Regulations for construction promulgated by the Secretary of Labor under Section 107 of the Contract Work Hours and Safety Standards Act, as set forth in Title 29 C.F.R.

The Contractor shall take all measures to protect the work and prevent accidents during the construction. The contractor shall provide and maintain sufficient night lights, barricades, guards, temporary sidewalks, temporary bridges, danger signals, watchmen, and necessary appliances and safeguards to safeguard life and property. The Contractor shall also protect all

excavations, equipment, and materials with barricades and danger signals so that the public will not be endangered.

The Contractor shall also take care of drainage water from the construction operations, and of storm water and wastewater reaching the right-of-way from any source, so that no damage will be done to the trench, pipe, or other structures. The Contractor shall be responsible for any damage to persons or property on or off the right-of-way due to such drainage water, or to the interruption or diversion of such storm or wastewater on account of the Contractor's operations.

The Contractor shall so conduct his operations as to offer the least possible obstruction and inconvenience to traffic and shall have under construction no greater amount of work then can be handled properly with due regard for the rights of the public. All traffic shall be permitted to pass through the work with as minor delay and inconvenience as possible unless otherwise authorized by the County of Los Angeles or the City of Santa Clarita.

Convenience of abutting property owners shall be provided for as far as practicable. Convenient access to mailboxes, driveways, houses, and buildings adjoining the work, as well as fire hydrants, shall be maintained and temporary approaches to intersections shall be provided and kept in good condition. When a section of surfacing, pavement or a structure has been completed, it shall be opened for use by traffic at the request of the Agency. In order that unnecessary delay to the traveling public may be avoided, the Contractor, when so ordered, shall provide competent flaggers whose sole duty shall consist of directing traffic either through or around the work.

Caution should be taken to preserve and protect all public and private property and facilities in and around the work site. The Contractor shall be liable for the complete cost of repairing or replacing all such property and facilities damaged or destroyed during the progress of the work.

The Contractor shall provide such dust control equipment and methods as may be required to protect adjacent property from annoyance or damage from dust caused by his operations. Failure to control such dust shall be cause for the Engineer (or a designated Representative) to stop the work until said dust is controlled, and the Contractor shall have no recourse to collect from the Agency for any loss of time or expense sustained by him due to such suspension of work.

No valve or other control on the Agency's existing water system shall be operated for any purpose by the Contractor unless said operation is under the direct supervision of Agency personnel. Any operation of Agency facilities without direct supervision of Agency personnel will be cause for the Agency to stop work on the project and will result in the issuance of an unauthorized use of water fine to the Contractor or Developer responsible. Any damage resulting from said operation will be repaired at the Contractor's expense. Otherwise, the

Agency will operate all valves, hydrants, blow-offs, and curb-stops on the existing water system. The Agency Inspector shall be notified (5) Agency working days prior to the construction of tie-ins to existing lines.

01108 PUBLIC NOTICE

01108.1 Notice of Starting Work:

The Contractor shall provide and distribute to all occupants along the streets of the proposed work, printed notices 8-1/2 inches x 11 inches in size, with wording like that showing on the following page.

01108.2 Notice of Temporary Shutdown:

Notice shall be given for temporary interruption of service to existing customers no later than forty-eight (48) hours prior to said interruption. Said note to be printed on 8-1/2 inches x 11 inches paper in format to be approved by the Agency prior to distribution.

NOTICE

WITHIN THE NEXT FEW DAYS, WORK WILL BE STARTED ON THE INSTALLATION OF A WATER SYSTEM IN YOUR STREET.

The work may cause some inconvenience but will be of permanent benefit.

We shall appreciate your cooperation in the following matters:

1) Please be alert when driving or walking in the construction area.

2) Tools, materials, and equipment are attractive to children. For the safety of children, please keep them away.

3) Please report all inconvenience to the Foreman on the job, or call the office at the number given below.

The work is being performed by:

(Insert firm name, superintendent's name, address, and telephone number in this space.)

We will endeavor to complete this work as rapidly as possible and with a minimum of inconvenience to you.

_____

(Signed) Name of Firm

01109 MATERIALS AND WORKMANSHIP

All materials incorporated in the work shall be new. Any unapproved material shall be removed from the job site immediately, or all work may be stopped by the Agency. All equipment, material and supplies shall be produced in a good and worker-like manner. Materials to be used within the scope of work on the project shall be those listed in the current Approved Materials List and be approved submittals in Procore. When the quality of a material, process, or article is not specifically set forth in the Approved Materials List, the Approved Plans, or the Specifications, the best available quality of the material, process, or article shall be provided to the Agency.

All workmanship shall be in conformance with the best trade practices. Particular attention shall be given to the appearance of exposed work. Any work or workmanship not conforming to the best practices and Agency standards will be rejected.

The Agency practices zero tolerance for graffiti, and it is the Contractor's responsibility to protect and ensure facilities are graffiti-free until acceptance.

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

The Contractor will designate a foreman to be always present on site. The foreman shall be a competent person who is thoroughly familiar with the specified requirements of work and who is completely trained and experienced in the construction skills necessary for satisfactory completion of the work shall be present at the site, directing the work, always.

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

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

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

01110 PROJECT CLEAN-UP

An orderly and secured jobsite shall always be maintained. Tools, rubbish, and materials shall always be picked up and stored in a worker-like manner. All material, etc., used during construction shall be removed from the vicinity of the completed work. Surfaces shall be returned to a condition acceptable to the Agency. All excess material shall be disposed of as directed by the Agency or removed from the work site.

01111 GUARANTEE

Every component of work shall be guaranteed against defective materials or workmanship and against settlement of backfill and any resulting damage to resurfacing for a period of two (2) years from the date of acceptance by the Agency.

The expiration of the one (2) year guarantee period does not limit the developer's liability for work, which is done contrary to the plans and specifications.

When such defect or settlement is discovered requiring repairs to be made under this guarantee, all such repair work shall be done at no expense to the Agency within ten (10) days after written notice has been given by the Agency. Should the Contractor or Applicant fail to repair the work as directed within ten (10) days thereafter, the Agency may make the necessary repairs and charge the Developer or Applicant with the actual cost of all labor and materials required.

In the event such defect or settlement is discovered requiring immediate corrective action to be taken in the opinion of the Agency, the Agency shall have the right to repair or replace same and to take whatever other action the Agency deems appropriate to correct same and to charge the Developer with the actual cost incurred by the Agency.

01112 LICENSE

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

A. Class A.
B. Associated Specialty Contactor License, for projects that involve specialized knowledge.

Any Contractor possessing a license other than a Class A must receive a written approval from the Agency prior to initiating the work. The work shall be completed by a General Contractor with an A Contractor license, all sub-specialty work to be completed under the supervision of the General Contractor.

General Contractor shall always provide a competent person at the job site during any construction. Any work on asbestos pipeline, or removal of asbestos shall be completed by certified Asbestos Cement Pipe Construction Craft Worker.

Contractors/developer shall not have any Cal-OSHA violations within the past 5-years from the date of the signed contract/agreement with the Agency.

01113 OPERATIONS IN PUBLIC RIGHT-OF-WAY

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

01114 STORM WATER POLLUTION PREVENTION PLAN (SWPPP) REQUIREMENTS

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

01115 ORDER OF PRECEDENCE

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

1. Technical Specifications (Standard Specifications Sections 01 through 07)

2. Appendices to the Standard Specifications

3. Standard Drawings

4. Approved Plans

5. Approved Materials Lists

6. General Specifications (Standard Specifications Section 01)

7. Reference Standards

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

01116 EXAMINATION OF APPROVED PLANS, SPECIFICATIONS, AND SITE

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

character, quality, and quantities of work to be furnished, and as to the requirements of the Approved Plans and these Standard Specifications. The Agency will not be liable for any loss sustained by the Contractor because of any variance between conditions as shown on the Approved Plans and the actual conditions revealed during the progress of the work or otherwise.

01117 MATERIALS

All materials shall be new and unused, of the quality defined in these Standard Specifications, selected from the Approved Materials List, and approved by the Agency. Materials not otherwise designated by detailed specifications shall be of the best commercial quality, suitable for the purpose intended and approved by the Agency prior to use. All materials to be used within a specific project and intended for equivalent uses shall be identical as to manufacturer and model number. Materials not identical as to manufacturer and model number to those approved by the Agency Engineer, materials that are damaged, or materials that are otherwise unacceptable to the Agency Engineer shall be rejected and immediately removed from the job site.

A. All materials shall be of the makes and models tested and approved for use. Selections shall be made from the current Approved Materials List. It is the Contractor's responsibility to verify that materials received for the job conform to the current Approved Materials List.

   Products on the Approved Materials List may be disqualified at any time if the quality of the product is no longer judged as acceptable by the Engineer or if a higher-quality product becomes available.

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

01118 SUBMITTALS

All project submittals shall be submitted to the Agency by the Applicant and/or Contractor on the Agency's construction management software (i.e., Procore).

The following shall be submitted to Agency prior to commencing any work and prior to the pre-construction conference as outlined in Section 01119.

If submitting material form the approved materials list as listed on Appendix A, the Applicant/Contractor shall submit the checked-off list of materials, as provided in Appendix A, and uploaded up to the construction management software for Agency review and approval.

If submitting material not on the approved materials list the contractor shall submit each individual material, component and/or item(s) on to the Agency's construction management software. All submittals cut sheets shall include the following:

1. The manufactured name
2. Manufactures part number and part/material/item selected
3. All dimensions necessary
4. All components that make up said part/material/item.
5. All certifications necessary for said material (i.e., NSF, AWWA, etc.)
6. Submittal shall be detailed and provide the agency with all necessary information, deemed necessary to provide approval.
7. Any submittal submitted in lieu of, shall clearly conform to, and meet the Agency requirements for said submittal.

Agency must approve all material and no material shall be purchased prior to Agency approval. The Agency does not take any responsibility for material that needs manufacturing without prior Agency approval.

The contractor assumes all responsibility for all material, parts, and/or items, ordered without the approval of the Agency.

01119 PRE-CONSTRUCTION CONFERENCE

The Developer shall request a Pre-Construction Conference with the Agency's Inspection Department at least five Agency working notice on Procore and no more than (10) days prior to beginning of any water or facility construction. As a minimum, the attendees at this conference shall include:

1. The Owner or a designee, who is to be the on-site representative of the Owner of the project.
2. The Contractor's Superintendent.
3. Contractor's Competent Person.
4. The Contractors Forman
5. The Soils Technician who is to verify backfill compaction.
6. The Agency Inspector.
7. Applicants/Contractors Surveyor

In addition, the following persons shall be invited to the Pre-Construction conference upon request of the Agency:

8. A representative of the Agency.
9. Representative(s) of other utility companies.
10. A representative of any other governing Agency.

The purpose of this meeting is to review the plans for the project relative to the requirements of the Agency's Standard Specifications, the Approved Plans, and the Approved Materials List. The Contractor shall be prepared to discuss, in detail, the project schedule, and shall provide the Agency with schedules, submittals, lists, permits, or other information required by the Agency, by these Standard Specifications or by the job specifications, all submitted into Procore

01120 SCHEDULES

The Contractor and/or Applicant shall submit to the Agency prior to the start of the pre-conference meeting (see section 01115) and construction the following scheduled.

1. Construction Schedule
2. Pipeline Insulation Schedule, (see section 03300.2)

The construction schedule shall be posted on the Agency's construction management software site.

At a minimum, the construction schedule shall consist of the following:

1. Material Inspection (2 Days Minimum for all new materials)
2. Date of Start of Construction (Occurs after material inspection)
3. Task(s) to be completed, which shall include stationing and/or sheets to be worked on based on the approved construction plans.
4. Date and
5. Hours of work, which shall include total hours to be worked and times.

Schedule may be submitted as a word, excel and/or Gantt chart in PDF format. The Agency understands the dynamic nature of construction and it is up to the Contractor and/or Applicant to stay up to date with the schedule and shall submit schedule updates as soon as possible and coordinate with the Inspector daily, see section 01121.

01121 INSPECTION

The Agency requires continuous inspection of all work related to the installation/ construction of all Agency facilities. Any work that is not thoroughly inspected during installation/construction will not be accepted. Shall the contractor proceed and fail to request timely inspection and proceeds to install any water related facilities without the presence of an Agency Inspector; the work will be rejected at the developer's expense. Application for inspection shall be made to the Agency's Engineering Services Section for approval and are subject to the following criteria:

- All inspection requests will be submitted to Procore.
- Normal Inspection Working hours (7AM to 3:30PM) require a (5) working day notice.
- Extended work shift hours require a 48-hour notice.

- Weekend inspections require a 72-hour notice.
- Night shift inspection lasting less than three days require a (14) working day notice.
- Night shift inspection lasting longer than three days require a (30) working day notice.

All appropriate permit(s) from the city, county, Caltrans, and/or any other governing agency shall be on the jobsite and shall be checked by the inspector at his/her discretion before starting construction. Failure to provide such permit(s) will result in the rejection of all work and no inspection shall proceed until proper permit(s) are obtained by the Contractor.

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

Inspectors shall be recognized as authorized Agents of the Agency, and their duties shall be to evaluate materials used and work performed. Instructions given by the Inspector shall be respected and executed by the Contractor.

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

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

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

Any work covered up or otherwise rendered inaccessible without approval or consent of the Agency must, if required by the Agency, be uncovered for examination at the Developer/Contractor's expense.

01122 SPECIALIZED TESTING OR INSPECTION SERVICES

The Developer shall engage testing firms to provide the various testing required for the project. Soils testing is required for all Agency projects, but concrete testing or other types of specialized testing and inspection may additionally be required. The testing/inspection firm shall provide a competent, on-site technician to perform the various testing or specialized inspection required for the project. All testing shall be performed at the direction of the technician or inspector in a manner submitted and approved by the Agency prior to the

commencement of work. Soils testing shall be performed in accordance with Section 02223 of these Standard Specifications.

Prior to the Agency's acceptance of the project, a report of all soil's tests taken shall be submitted to the Agency in accordance with Section 02223 of these Standard Specifications.

All other types of testing (i.e., concrete, welding, etc.) that may be required, shall be provided by the developer/contractor as agreed upon in the pre-construction meeting, and will be required prior to the facility being activated

01123 CONSTRUCTION STAKING AND PRESERVATION OF MONUMENTS

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

Additionally, cut sheets shall be provided to the Agency and it is the responsibly of the Surveyor, Developer, and/or contractor to identify any discrepancies and shall be addressed prior to commencement of pipeline installation.

The Contractor shall preserve all monuments, benchmarks, survey marks, and stakes. In case of their removal or destruction by Contractor or its employees, agents or subcontractors, the Contractor shall be liable for the cost of their replacement. Developer/Contractor shall complete a survey of record and install monuments per the Agency standard drawings, for all facilities given to the Agency including easements.

01124 ENVIRONMENTAL CONTROL

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

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

The Contractor shall anticipate and correct any erosion problem arising from its operations. The Developer/Contractor shall meet all state and local water discharge regulations when installing or working on Agency facilities. Developer/Contractor will be responsible for any violations and associated fees.

01125 PUBLIC SAFETY AND TRAFFIC CONTROL

The Contractor shall always conduct operations in a manner causing the minimum obstruction and inconvenience to public traffic. The Contractor shall not interfere with the normal operation of public transit vehicles unless otherwise authorized. Open trenches and excavations shall be provided with adequate barricades in accordance with the approved traffic control plan or the requirements of the agency of jurisdiction. At night, lights shall mark all open work and obstructions. The Contractor shall install and maintain all signs, lights, flares, barricades, traffic plates, railings, runways, stairs, bridges, and other equipment necessary to safeguard the public. Safety instructions received from governmental authorities shall be followed, but compliance with such instructions shall not diminish the Contractor's responsibility or liability for accidents to workers or damage or injury to persons or property. In accordance with generally accepted construction practices, the Contractor shall be solely and completely responsible for conditions of the job site, including safety of all persons and property during performance of the work, and the Contractor shall fully comply with all state, federal, and other laws, rules, regulations, and orders relating to the safety of workers and others.

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

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

The Contractor shall submit a traffic control plan to the agency having jurisdiction and shall obtain approval prior to starting the work.

01126 PROTECTION OF EXISTING FACILITIES

The Contractor's attention is directed to the possible existence of pipe and other underground improvements that may or may not be shown on the Approved Plans. Once discovered, the Contractor shall preserve and protect all such improvements whether shown on the Approved Plans or not. The Contractor shall provide and install suitable safeguards and shall be responsible for the care and protection of all existing sewer and water pipe, electrical and telephone conduits, gas mains, culverts, or other above-ground or below-ground facilities or structures which may be encountered in or near the area of work. It shall be the responsibility of the Contractor to notify each agency of jurisdiction and utility company the location of facilities prior to beginning construction. In the event of damage to existing facilities during the progress of the work, such facilities shall be replaced or restored to original condition, as determined by Agency, at the Contractor's expense.

The Contractor shall be responsible for determining in advance the location, elevation, alignment and pipe type and size of all existing pipelines to which connections are to be made.

Potholing to determine location will be allowed only after providing the Agency with three (5) day's written notice in Procore. The Contractor is required to contact Underground Service Alert (USA) at 1-800-227-2600 or 1-800-422-4133 to mark-out and identify all utilities within the vicinity of work.

If the Contractor, either before commencing work or during the work, finds any discrepancy between specifications or drawings and the physical conditions at the site of the work, Contractor shall promptly notify the Agency in writing on Procore of such discrepancy within 24 hours during normal Agency hours.

01127 PROTECTION OF LANDSCAPING

The Contractor shall be responsible for the protection of all trees, shrubs, fences, and other landscape items adjacent to or within the work area, unless specific removals are indicated on the Approved Plans.

In the event of damage to landscape items, including the thickness of topsoil, the Contractor shall replace the damaged items in kind, in a manner satisfactory to the Agency.

When pipelines are proposed within planted or otherwise improved areas in public or private easements, the Contractor shall restore such areas to original condition after completion of the work.

When pipelines are proposed within unimproved areas, the ground surface shall be dressed smooth to the contour of the original ground and left in a neat, presentable condition, free of cleared vegetation, rubbish, and other construction wastes. Rocks and clumps that cannot be readily covered by spreading shall be hauled away and disposed of by the Contractor.

Unimproved areas disturbed during construction of the pipeline shall be hydro seeded in accordance with these Standard Specifications.

01128 PUBLIC UTILITIES

In case it should be necessary to relocate or temporarily maintain the property of any public utility or any other property, and it is understood that the cost of such relocation or temporary maintenance is not required to be borne by the owner of the utility or property, the Contractor shall bear all expenses incidental to the removal or temporary maintenance of such property in a manner satisfactory to said owner. It is understood that in such cases, the utility or property owner has the option of doing such work with his or her own forces or permitting the work to be performed by the Contractor.

The right is reserved to the State, County, City, Agency, or utility owners to enter at any time upon any street, alley, right of way or easement for the purpose of making changes for maintenance or repairs to their property necessitated by the Contractor's work.

All utilities whether shown or not shown on the plans shall sign-off on the plans prior to Agency approving the plans. The Applicant shall verify with all other utilities and check for any potential conflicts with proposed Agency facilities.

01129 UTILITIES CROSSING WATER, RECYCLED WATER OR SEWER FACILITIES

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

01130 HORIZONTAL SEPARATION OF UTILITIES PARALLELING WATER, RECYCLED WATER OR SEWER FACILITIES

Wherever new utilities parallel water, recycled water or sewer facilities, the minimum horizontal separation shall be such that 900mm (36") of undisturbed soil separates adjacent trench edges, unless otherwise approved by the Agency Engineer.

01131 PROTECTION OF WORKERS AND AGENCY FACILITIES IN TRENCH EXCAVATIONS

Whenever work involves trench excavation, the Contractor shall provide all necessary shoring, bracing, sloping, or other provisions to be made for worker protection from hazard of caving ground during the excavation per Cal-OSHA if such plan varies from the shoring system standards established by the Construction Safety Orders of the Division of Industrial Safety, a Civil Engineer or Structural Engineer registered in the State of California shall prepare the plans. Agency facilities will be shored when excavations are plated or covered up. Trench plates will be non-slip and secured / pinned down when set.

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

01132 WORK WITHIN CONFINED SPACES

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

01133 CONSTRUCTION EQUIPMENT

The Contractor shall furnish appropriate construction equipment to perform the work in accordance with the Approved Plans and Specifications. Such equipment shall be in a good

state of repair and shall be maintained in such state during the progress of the work. In no case shall the manufacturer's rating or capacity limitations for any equipment be exceeded.

01134 STORAGE OF MATERIALS

All materials for use in the work shall be stored by the Contractor in such manner as to prevent damage from exposure to the elements, admixture of foreign materials, or from any other cause. The Contractor shall be entirely responsible for damage or loss by weather or other causes. The Material Safety Data Sheets (MSDS) for all products to be used in the work shall be kept on-site by the Contractor, and the material manufacturer's recommendations for proper storage of its products shall be strictly followed. All Pipe, fittings and valves will be covered. Any material with Animal feces or stored with non-NSF approved chemicals, will be automatically rejected and must be removed off site immediately.

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

01135 HOURS OF WORK

The normal hours of work shall be between the hours of 7:00 a.m. and 4:30 p.m., Monday through Friday, except Agency-recognized holidays. Alternate work hours may be arranged with the Agency to accommodate time-restricting schedules imposed on the Contractor by other agencies. The Agency shall receive written notice 5 days prior to any proposed change in work hours. In no case shall any work be performed outside of the normal working hours indicated above without prior approval by the Agency. See section 01121 for inspection hours.

01136 WATER AND POWER FOR CONSTRUCTION PURPOSES

Water for construction purposes:

A. All water used on the project shall be obtained from Agency's sources using a construction meter.
B. The construction meter and service connection shall be obtained from the Agency. The Contractor shall decide with the Agency for payment of the deposit and installation of the meter.
C. The Contractor shall pay for all construction water used in accordance with Agency's Rules and Regulations.
D. Damage caused to the meter will be charged to the Contractor.
E. Water for construction purposes outside the Agency's service area shall be obtained from the Agency within which the project lies.

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

01137 HOUSEKEEPING DURING CONSTRUCTION AND FINAL CLEAN-UP

A. The Contractor shall provide suitable drainage and shall erect such temporary structures as are necessary to protect the work or materials from damage. The Contractor shall rebuild, repair, restore, and make good all injuries, losses, or damages to any portion of the work or the materials occasioned by any cause before the acceptance of the work by Agency and shall bear the expense thereof.
B. The Contractor shall, always during the course of the work, maintain work areas and all adjacent properties and public access roads free from accumulations of waste, debris, rubbish or construction materials.
C. The Contractor shall conduct cleaning and disposal operations to comply with local ordinances and anti-pollution laws.
D. Dry materials and rubbish shall be moistened to prevent blowing dust. Loads of excavated materials leaving the site or being imported to the site shall be covered or moistened to prevent blowing dust.
E. Upon completion of the work, and before making application for acceptance of the work, the Contractor shall clean all rights-of-way, streets, borrow pits, and all other grounds occupied by him in connection with the work. All rubbish, excess materials, temporary structures, and equipment shall be removed. All parts of the work shall be left in a neat and presentable condition, as determined by the Engineer, prior to acceptance of the work by Agency.

01138 HAZARDOUS WASTE AND UNKNOWN PHYSICAL CONDITIONS

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

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

The Contractor shall promptly inform the Agency of any such conditions found during construction. The Agency shall investigate the conditions, and if it finds that the conditions do materially differ from those shown or expected, or do involve material that may be hazardous

waste, Contractor shall cease work in the impacted area. If material that may be hazardous waste is discovered, the Developer shall insure that the appropriate government agencies are contacted prior to any further work being performed and that a solution is implemented.

01139 WORK TO BE DONE

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

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

01140 CHANGES TO THE WORK

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

If such changes increase the cost of material, or work to be performed, the difference in cost shall be borne by the Developer. All changes so performed shall be at no cost to the Agency.

The Agency shall provide written authorization for all changes to the work.

The following procedure shall be followed for revisions or changes to the Approved Plans:

A. Prints showing proposed changes shall be submitted to the Agency for review and approval.
B. If the changes will require an increase in bond amount, plans will be held until a new estimate has been prepared and a new bond has been placed with the Agency.
C. If the changes do not affect the bonding amount, as determined by the Agency Engineer, the plans shall be reviewed and upon approval, the Private Engineer shall be notified to make the corrections on the original drawings. A print of the revised plan shall then be submitted to the Agency for final checking and approval. A signature block shall be added to the plans to indicate approval of changes made.

D. After these steps have been taken, the Contractor may proceed with the revised construction.

01140.1 RFI's

If the contractor, due to conditions that change during the progress of the work, determines it impractical for the contractor to strictly comply with the Approved Plans or the Standard Specifications, the Contractor may submit a documented RFI through the Agency's Preferred Management Software.

A. The Engineering Team (Design and Agency) shall review the RFI and provide a written response. After the engineering review is completed, an authorization for all changes and/or clarifications will be documented in written form within the RFI along with plan revision updates that will be attached to the RFI and uploaded on the Agency preferred construction management software.
B. For field conflicts with existing obstacles the contractor shall schedule the project assigned licensed surveyor (See Section 03302.2), at no cost to the Agency, to collect GPS location data of all the necessary items in the area for an engineering review and response. After the engineering review is completed, an authorization for all changes and/or clarifications will be documented in written form within the RFI along with plan revision updates that will be attached to the RFI and uploaded on the Agency preferred construction management software.
C. Following the Official Response from the engineer, the RFI will then be closed by the engineer.
D. After these steps have been taken, the Contractor may proceed with the revised construction.

01140.2 Field Directives

The Agency Inspector or Authorized representative may issue field directives to the Developer/Contractor, when changes may need to occur that do not impact the integrity of any water pipeline, appurtenances and/or engineering.

01142 PROJECT CLOSEOUT AND FINAL ACCEPTANCE

The project has been completed in accordance with the Approved Plans, the job specifications, and these Standard Specifications.

Final inspection has been performed by Agency. Any "punch list" items generated by preliminary inspection shall have been completed.

The designee shall be responsible for final acceptance of all projects. The following items of work shall be completed and submitted through the Agency's preferred construction management software and review with acceptable responses prior to final acceptance by Agency:

01142.1 Redline As-builts

During the work, the Contractor shall keep accurate and updated records of the changes made to the work. The changes may be dictated by field conditions, unknown obstructions, design oversight, or other circumstances determined to be in the best interest of the Agency. In addition to the field changes, the correct location of all utility services (water, storm drain, sewer, electric, gas, etc.) and driveway centerlines with stations shall be indicated. The latest electronic plan set with all approved revisions within the Construction management Software will have the As-Built Survey overlayed in a separate layer, note the plans as As-Builts and be packaged as a new submittal within the Agency's preferred Construction management Software. All project parties will be responsible for review and certification signoff.

01142.2 Final Survey As-builts

A Final Survey Report of all the required information listed herein shall be stamped and signed by the registered civil engineer or licensed land surveyor and shall be submitted through the Agency's preferred construction management software by the Contractor and approved by the Agency prior to the filing of the Notice of Completion by the Agency. The report shall document and certify that all work follows the Section 03302.2.5

01142.3 Record Drawings

A. Following the As-Built acceptance process the design engineer shall update all noted and installed information into a single layer, note the plans as Record Drawings and be packaged as a new submittal within the Agency's preferred Construction management Software for review and acceptance. All engineering project parties will be responsible for review and certification signoff.

B. The Private Engineer will provide the Agency with the following:
    1. Original plans if on Agency title block
    2. Electronic data per Agency requirements
C. Each sheet shall incorporate a "Record Drawing" box signed by the Engineer of Work.

01142.4 Final Specialized Inspection and Testing Reports

All tests and specialized inspections performed shall be stamped and signed by the firm's engineer and have been submitted through the Agency's preferred construction management software by the Contractor and approved by the Agency prior to the filing of the Notice of Completion. This includes but not limited to Geotechnical, Welding, Concrete, Structural, Electrical, etc. The reports shall document all required pertinent information of the sampling/testing of items along with the results of all tests performed and shall certify that all materials and workmanship meet all regulatory requirements.

01142.5 Other Necessary Conditions

As a necessary condition to, and prior to Agency recognition of final completion of the work, the Applicant shall submit in duplicate to the Agency:

A. Record drawings reflecting any changes to the project have been submitted to the Agency's Engineering Department in accordance with these Standard Specifications.

B. All costs and fees relevant to the work have been paid to Agency by the Developer. An itemized cost breakdown of the work including cost per foot, and total footage installed, for each size and type of pipe installed; cost per each and total number of fire hydrants installed; and cost per each and total number installed for each size of service lateral and meter installed.

C. A bill of sale conveying, at no cost, to the Agency all facilities installed

D. All easement documents recorded and title insurance policies issue. All aspects of the Construction Agreement have been completed to the satisfaction of the Agency.

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

01143 WARRANTY

A. The work shall be guaranteed against failure due to defective materials or workmanship for a period of two (2) years from the recording date of the Notice of Completion. The two-year warranty period shall not, in any way, affect the liability of any party for latent or patent defects allowed for under State law.

B. All repairs shall be made pursuant to the Agreement with the Agency and in accordance with the Agency's Rules and Regulations and current Standard Specifications.

01144 WARRANTY INSPECTION

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

01145 PROCORE

The Agency uses the cloud-based platform Procore for construction management and is the preferred method of communication.

SECTION 02: PIPELINE MATERIALS

02200 GENERAL

This section covers and defines the materials to be used for pipelines, fittings, joints, and appurtenances. No PVC material is allowed for potable or recycled water mains or fittings. PVC will only be allowed for Agency drain lines and valve stacking. All drain lines will be green SDR 35 with thrust blocks on all fittings. Potable valve stacking shall be 6-inch White Sch. 40 PVC. Recycled valve stacking shall be 6-inch Purple Class 200 (Sch. 40) PVC.

02201.1 Agency Approval

The standards and specifications of materials, shown hereon, require approval by the agency. Agency approval is used as means to ensure the quality of potable and recycled water systems. Contractor/developer will be required to use Procore (the Agency's preferred construction management software).

02200.2 Application

Pipeline materials shown hereon are for potable and recycled water systems for the Agency. The Applicant and Contractor shall use this section as guidance and application for materials to be used for pipeline installations.

02200.3 Submittals

No installation of may occur without proper material(s) submittal(s), which must be approved by the Agency prior a Pre-Construction meeting, per section 01118, 01119 and 01120.

Materials should be submitted as follows for the agency to review unless material from Appendix B is selected and submitted.

1. Pipeline Materials shall be submitted individually and divided up by material and manufacturer.
2. Fittings shall be submitted individually and divided up by material and manufacturer.
3. Joint Materials shall be submitted individually and divided up by material and manufacturer.
4. Appurtenances shall be submitted individually by appurtenance and manufacturer.
5. Submittals shall include lining, coating, and wall thickness/pressure class for all piping provided.

02200.4 Pipeline Material Schedule

The following pipeline material scheduled is provided as a means for determining what pipeline materials to use shall be furnished by the Applicant and/or Contractor.

Diameter	Domestic Water	Recycled Water
2-inch and smaller	Municipex (Blue)	Municipex (Purple)
*3-inch through 10-inch	DIP Class 350 DCL HDPE DR7(min.) (only for temporary purposes or as specified per plan/project)	DIP Class 350 DCL HDPE DR7(min.) (only for temporary purposes or as specified per plan/project)
12-inch through 24-inch	DIP Class 350 (min.) DCL	DIP Class 350 (min.) DCL
Above 24-inch through 36-inch	DIP Class 350 (min.) DCL CML&C Steel	DIP Class 350 (min.) DCL CML&C Steel
42-inch and larger	Special Design (Per Project)	Special Design (Per Project)
Notes: DIP- Ductile Iron Pipe per Section 02201 Copper Pipe per Section 05502.1 Municipex per Section 05502.2 CML&C- Cement Mortar Lined and Coated Pipe per section 02203 HDPE Pipe- High Density Polyethylene Pipe per section 02201 DCL: Double Cement Lining *All Potable water mains shall be sized to a minimum of 8-inches in diameter and all recycled water mains shall be sized to a minimum of 6-inches in diameter. No 4-inch diameter size water mains are allowed for potable and recycled systems.		

02201 DUCTILE-IRON PIPE (DIP)

AWWA Reference Standard

Ductile-iron pipe shall be manufactured in accordance with ANSI/AWWA C151/A-21.51 or the latest revision of said standard.

Manufacturers

Ductile-iron pipe shall be as manufactured by McWane Cast Iron Company, U.S. Pipe and Foundry Company, and/or American Cast Iron Pipe.

02201.1 Coating

Pipe shall have standard asphaltic pipe coating on the exterior and a double thickness cement mortar lining on the interior in accordance with ANSI/AWWA C104/A21.4, of latest revision. Manufacturers' certificates shall indicate that pipe has been double lined must be submitted with each pipe delivery/submittal.

All ductile-iron pipe, to be used, shall have a stamped, cast or labeled identifying the following (certification by the manufacturer indicating compliance with specification requirements):

1. Name of Manufacture
2. Pipe Diameter Size
3. Pressure Class
4. Joint type
5. Lining Information
6. Coating Information
7. NSF-61
8. Nominal Thickness
9. Net weight without lining
10. Country of Origin
11. The letters "DI" or "Ductile"
12. Length of pipe segment
13. Serial Number

02201.2 Pressure Class

All ductile-iron pipe shall be designed in accordance with ANSI/AWWA C151/A-21.51 or the latest revision of said standard for a minimum Class 53 DIP or class 350 (or per project requirements, whichever is greater) rated working pressure plus a 100-psi minimum surge allowance; a 2 to 1 factor of safety.

02201.3 Joints

Unless otherwise called out on the plans or elsewhere in the project specifications, push-on joints, such as Tyton or equal shall be used. The joint dimension and gasket shall be as specified in ANSI/AWWA C111/A-21.11. All rubber gaskets shall be EPDM, including binder rubber for non-asbestos gaskets, for flange joints. Restrained Joints, where called for on the plans, pipe and fittings shall be restrained. All rubber restrained gaskets shall be EPDM.

Restrained joints shall be on the following types:

- Flange Fittings
- Mechanical Joints with Mechanical Joint Restraints.
- Grooved Pipe and Fittings for above grade or in vaults.
- Push-On Bell Restraining Gaskets (Surestop, Fieldlok, Fastgrip) are only permitted on pipe bells within pipeline sections. No fittings, Valves, etc. are permitted. Refer to the following table:

PIPELINE MANUFACTURER	PUSH-ON JOINT TYPE	RESTRAINING GASKET
MCWANE	TYTON JOINT	SURESTOP 350
US PIPE	TYTON JOINT	FIELDLOK 350
AMERICAN	FASTITE	FASTGRIP

Note: Push-on joints manufactured by McWane Ductile, or U.S. Pipe are interchangeable, but neither is interchangeable with pipe manufactured by American.

02201.4 Fittings for ductile-iron pipe

Ductile iron fittings shall conform to the latest revisions of either ANSI/AWWA C110/A21.10 or ANSI/AWWA C153/A21.53 and to the Agency's General Notes. Fittings shall have a standard asphaltic coating on the exterior and a double thickness cement mortar lining on the interior in accordance with ANSI/AWWA C104/A21.4, of latest revision. All rubber gaskets shall be EPDM, including binder rubber for non-asbestos gaskets.

Restrained joints shall be provided at all fittings: tees, crosses, reducers, bends, caps, plugs, and valves such that the pipe is fully restrained per DIPRA guidelines, unless otherwise indicated on the plans. All rubber gaskets shall be EPDM, including binder rubber for non-asbestos gaskets. All 3" through 24" Mechanical Joint Ductile Iron Fittings shall be produced in accordance with all applicable terms and provision of ANSI/AWWA C153/A21.53 and ANSI/AWWA C111/A21.11.

All fittings and accessories shall be furnished with Mechanical Joints in accordance with ANSI/AWWA C111/A21.11, of latest revision. Restraining glands will be required on all M.J. fittings per this section. The design of all connections between ductile iron pipe and other types of pipes shall be submitted to the Agency for approval prior to ordering the connection materials.

Twist-off nuts, sized the same as the tee-head bolts, shall be used to ensure proper activating of restraining devices. The gland shall be manufactured of ductile iron conforming to ASTM A536-80. The retainer-gland shall have a pressure rating equal to that of the pipe on which it is used through 14" with a minimum safety factor of 2:1.

For depths greater than 60-inches and 30-inches or less all fittings shall be C110 as described in this section. Anything in between 31-inches and 60-inches, C153 fittings may be used.

02202 POLYVINYL CHLORIDE PIPE (PVC)

The Agency no longer allows the installation of polyvinyl chloride pipe or fittings for water mains. The only use of polyvinyl chloride pipe shall be for

1. Valve staking risers as shown on Standard Drawing Number WP-108A/B/C
    a. Potable – 6-inch Green SDR35,
    b. Recycled – 6-inch Purple Class 200 (Sch. 40) PVC
2. Ventilation purposes on concrete vaults as shown on Standard Drawing Number WP-125D
    a. Potable – White Sch. 40 PVC,
3. Agency drain lines
    a. Green SDR 35 with thrust blocks on all fittings.

02202.1 PVC Fittings

For PVC to be used for ventilation purposes the fittings shall be PVC Schedule 80, which include any elbows and caps. All fitting shall be slip-on (push-on) and shall be glued using a compatible PVC primer and Extra Heavy Body Cement which both shall be NSF61 approved.

02203 CEMENT MORTAR LINED AND COATED STEEL PIPE (CMLC PIPE)

Cement mortar lined and coated steel pipe (CMLC Pipe) and fittings shall be furnished and installed in accordance with the plans. Pipe, including special fittings and joints, shall be manufactured in accordance with AWWA C200, C205, C206, C208 and Fed. Spec. SS-P-385 except as further specified in these specifications.

The pipe shall consist of the following component parts: a welded sheet steel or plate steel cylinder with joints formed integrally with the steel cylinder or with the steel joint rings welded to the ends; a self-centering bell and spigot joint with a circular pre-formed EPDM rubber gasket so designed that the joint will be watertight under all conditions of service.

Steel for cylinders shall be hot-rolled low carbon steel sheets conforming to ASTM A-570 Gr 33 or 36. The minimum acceptable yield strength of the steel shall be 33,000 psi and the minimum wall thickness of any size pipe shall be 10 gauge. Above grade pipe or pipe in vaults shall be minimum standard weight thickness. Diameter indicated or specified shall be net inside diameter plus or minus one-quarter (1/4) inch after cement mortar-lining. Type II cement shall be used for all mortar-linings and coating.

For the following nominal inside diameters, the lining thickness and minimum cement mortar coating thickness shall be as follows:

	LINING		COATING	
Nominal Pipe Size (inches)	Thickness (inches)	Tolerance (inches)	Thickness (inches)	Tolerance (inches)
4 – 10	¼	-1/32+1/32	1/2	+1/8
12 – 18	3/8	-1/16+1/8	5/8	+1/8
20 – 44	½	-1/16+1/8	3/4	+1/8
45 – 58	¾	-1/16+1/8	1	+1/8
60 and over	¾	-1/16+1/8	1 1/4	+1/8

Cathodic protection for CMLC Pipe is required as specified, see Standard Drawing Number WP-136.

02203.1 Joints

Rubber gasket joints shall be EPDM and conform to Fed. Spec. SS-P-385 and made in accordance with Standard Drawing Number WP-139 and WP-140, for plain end pipe.
Lap Welded Field Joints. Where indicated on the drawings, lap joints shall comply with AWWA C206. Flanged Ends. Pipe section ends required to be fitted with flanges for special fittings and connections, as shown on the drawings, shall utilize flanges, which comply with the requirements of AWWA C207 Class "D" for steel hub flanges. Class "E" or "F" flanges shall be used when required by higher pressures. No plate flanges shall be used. All flanged spools shall be positioned and tack-welded in place prior to completing the weld. Flange bolts installed above ground shall be carbon steel. Flange bolts installed underground shall be carbon steel and coated in accordance with section 3.9. All submerged bolts shall be Zink Plated or hot Dipped galvanized. Gaskets for flanged joints shall be one sixteenth (1/16) inch thick for up to twenty (20) inch pipe, one eighth (1/8) inch thick for pipe larger than twenty (20) inches. Gaskets shall be either non-asbestos cloth gaskets with any rubber binding materials being EPDM or full EPDM Rubber Gaskets. Nuts and bolts shall have hex heads.

02203.2 Fittings for Steel pipe

All bends, elbows, tees, crosses, reducers, and other fittings for mains twelve (12) inches and smaller shall be steel. Flanged Fittings and shall conform to and shall be double cement mortar lined per AWWA Standard C104. Fittings for mains larger than twelve (12) inches may be fabricated in accordance with AWWA Standard C208. Alternate fittings and adapters may be

used where conditions restrict or make impractical the use of ductile iron fittings or adapters. The use of any alternative will require the prior approval of the Agency.

02203.3 Section Cathodic Protection

The developer's engineer shall design a cathodic protection system in accordance with the recommendations put forth in the project geotechnical investigations and these Standards and Drawings.

02203.4 Section Insulating Bushings and Unions

Pipe and fittings made of dissimilar metals may be required to be isolated by nylon insulating pipe bushings or unions as manufactured by Smith Blair, Corrosion Control Products, Co., or approved equal. Insulating unions or bushings shall meet the minimum pressure class of both pipe which they will be isolating.

02204 HIGH-DENSITY POLYETHYLENE PIPE (HDPE)

AWWA Reference Standard

Polyethylene (PE) pipe shall be in accordance with AWWA's latest M55 manual and C901 and C906.

HDPE pipe shall only be installed by Agency approval and under exceptional circumstances, see section 02200.4.

HDPE Pipe shall have a pipe dimension ratio of 7 (DR7) at a minimum for all potable and/or recycled water systems.

HDPE shall be used for temporary purposes only and shall be new. At the Agency discretion HDPE may be installed for permanent water system purposes.

02204.1 Joints

HDPE pipe shall be joined at joints using heat fusion joining, using the conventional butt fusion. Sidewall and socket fusion are also allowed for joint HDPE pipe at joints.

02204.2 Fittings

HDPE pipe fittings may be molded and fabricated in accordance with AWWA C901 or C906. Additionally, mechanical joining is allowed and shall include compression couplings, flanges, mechanical joint adapters, and transition fittings in accordance with AWWA C901 and C906.

02205 PIPELINE IDENTIFICATION MATERIALS

02205.1 Polyethylene Encasement

All polyethylene encasements shall comply with the latest revision of ANSI/AWWA C105 and DIPRA Standards.
Polyethylene encasement shall be installed per standard drawing number WP-101 and shall be installed on all ferrous pipe, valves, and fittings.

Potable water systems (ferrous pipe, valves, and fittings) shall be wrapped in one layer of DIPRA approved V-Bio polyethylene wrap in accordance with standard drawing WP-101.

Recycled water systems (ferrous pipe, valves and fittings) shall be wrapped in one layer of DIPRA approved V-Bio polyethylene wrap (under layer) and an outer layer of 8-mil purple polyethylene wrap labeled 'Recycled Water Do Not Drink" in accordance with standard drawing WP-101.

Less than (5) five small 1-2inch tears can be repaired with 10 mil-tape. Any more than that will require a new section of DIPRA approved V-Bio to be overlayed on the damaged section, to the satisfactory of the inspector.

02205.2 Tracer Wire

Tracer wire shall be installed in accordance with standard drawing WP-101. All underground pipe/conduit shall each have their own #12-gauge High Molecular Weight Polyethylene (HMWPE) solid stand.

Tracer wire color shall correspond to the pipe being installed and shall follow APWA Uniform Color Code.
Potable Water- Blue Color
Recycled Water- Purple Color
Sewer/Storm Drain- Green Color
Electric-Red Color
Fiber Optic-Orange Color
Other-Black Color

02205.3 Detectable ID Tape

Detectable identification tape shall be installed in accordance with standard drawing WP-101 and all underground pipe/conduit shall be installed with 3-inch wide, 5-mil thick identification tape.

Identification tape color shall correspond to the pipe being installed and shall follow APWA Uniform Color Code and shall be labeled as shown below.

Potable Water- Blue Color “CAUTION: DOMESTIC WATERLINE BURIED BELOW”
Recycled Water- Purple Color “CAUTION: RECYCLED WATER-DO NOT DRINK”
Sewer- Green Color “CAUTION: SEWER LINE BURIED BELOW”
Storm Drain-Green Color “CAUTION: STROM DRAIN LINE BURIED BELOW”
Electric-Red Color “CAUTION: (CATHODIC OR ELECTRIC) CABLE BURIED BELOW”
Fiber Optic-Orange Color “CAUTION: FIBER OPTIC CABLE BURIED BELOW”
Other-Yellow Color” CAUTION: BURIED PIPE BELOW”

SECTION 03: PIPELINE INSTALLATION

03300 GENERAL

This section covers the installation of pipelines and appurtenances, including trenching/excavation, laying, backfill, compaction, restoring of street surfaces, and clean-up.

03300.1 Submittals

No installation may occur without proper material(s) submittal(s), which must be approved by the Agency prior to a Pre-Construction meeting using Procore, per section 01118 and 01119.

03300.2 Pipeline Installation Schedule

An installation schedule, in addition to a construction schedule (see section 01120), shall be submitted and approved by the Agency in Procore, prior to the Preconstruction meeting. , which shall include:

1. Material Inspections (2 days minimum for all new materials)
2. Start of installation (Shall be after material inspections)
3. Order of installation.
4. Contractor must provide a detailed Testing Plan documenting all required items within Section 06. This Testing Plan shall be approved prior to the Pre-Construction meeting.
5. Shutdown Plan (i.e., water main(s), service(s), valve(s) shutdowns, etc.)
6. Punchlist and Close Out Items see Section 01142.
7. Proposals for alternate methods or materials, special conditions, or the like, require approval of the Agency; detailed shop, fabrication, or erection drawings shall be provided by the Contractor.
8. For steel pipe and fittings, the contractor shall submit material lists containing layout schedules, fabrication details, dimensions, and protective coatings to be used prior to pipe fabrication for the Agency’s approval. The contractor is responsible for field verifying dimensions and providing all make up pipe required to complete the work at no additional cost to the Agency.
9. Welder certifications and qualifications shall be submitted for any work that involves welding.

03300.4 Inspection

No installation may occur without the proper inspection of all materials to be used for pipeline installation, see section 01121.

03300.5 Responsibilities

The contractor shall maintain redline as-built documents of the installation and will be responsible for review and certification of redline drawings during the closeout process.

The contractor shall be responsible for determining in advance prior to start of construction/improvements the location of existing pipelines and utilities.

The contractor is also responsible for adhering and providing/furnishing proper materials, construction equipment, tools, and any other piece of equipment necessary for the proper installation of pipelines and associated appurtenances.

Contractor shall provide all required Personal Protection Equipment (PPE) for workers as required by the California Occupational Safety and Health Administration (Cal-OSHA).

03301 EXPLORATORY WORK

All underground utilities and structures that may interfere with construction shall be properly located and verified prior to start of construction.

Contractor shall request a Dig-Alert ticket by dialing 811. No work may commence without calling in a Dig-Alert or Survey.

03302 INSTALLATION

03302.1 Handling and Storing Materials

During storage, handling, and transporting, every precaution shall be taken to prevent damage to the pipe, which shall include the loading and unloading of pipe. Pipe shall be handled only by means of fabric slings or other approved methods for the pipe used. Under no circumstances shall forks or any other lifting equipment be inserted into any pipes.

Valves, fittings, hydrants, and other accessories shall be loaded and unloaded by lifting with hoist or skidding, to avoid shock or damage. Under no circumstances shall forks or any other lifting equipment be inserted into valves, fittings, or materials. Under no circumstances shall such materials be dropped. Any disapproved materials shall be removed from the job site immediately. In distributing the material at the site of work, each piece shall be unloaded opposite the place where it is to be laid in the trench. Steel and ductile iron pipe shall be so handled that the lining and coating will not be damaged. If, however, any part of the coating is damaged, repair shall be made by the Contractor at his expense to the manufacturer's specifications and to the satisfaction of the agency.

Shall any damage occur to any of the materials to be installed, the contractor shall repair (per manufacturer's specifications) or replace in kind to the satisfaction of the Agency. All materials must be free of defects prior to installation.

All material shall be sealed and stored in a proper, sanitary, and safe location and shall be protected from natural and unnatural elements such as animals, chemicals, people, weather, and/or any other element that compromises the integrity of all material to be installed.

Pipe shall never be dropped or dumped into trenches under any circumstances.
Internal pipe braces placed in steel pipes shall remain until backfilling and compaction are completed.

Plastic pipe caps placed over the ends of steel pipe shall not be removed until pipe is ready to be placed into the trench. Said caps may be opened from time to time temporarily to spray water for moisture control.

Before placing pipe in the trench, each pipe length shall be thoroughly cleaned from all foreign material and kept clean thereafter. Pipe shall be carefully examined for cracks and other defects prior to lowering into the trench for installation. Care shall be taken for bell ends and spigot ends and shall be examined prior to installing.

03302.2 Installing Pipe

03302.2.1 Pipeline Survey

Prior to the start of construction, survey stakes shall be set by a registered civil engineer or licensed land surveyor indicating line and grade and location of all items listed but not limited to proposed pipelines, fittings, valves, appurtenances, including all restraint/nonrestraint transitions, etc. and non-potable wet utilities.

At the discretion of SCVWA extra survey may be required, including but not limited to curb face, driveways, curb radius,' sidewalk, structures, other proposed or existing utilities, etc. Any additional costs shall be at the expense of the Contractor.

The maximum stake interval shall be fifty (50) feet.

03302.2.2 Pipeline Installation Coordination

The Contractor is required to coordinate all installation of the utilities so that the storm drains, and sewer are constructed prior to the water main installation.

All required survey staking per Section 03302.2.1 shall be installed prior to excavation and installation.

All exploratory work listed within 03301 shall be completed prior to installation.

03302.2.3 Placement of Pipe in Trench

The Contractor shall, after excavating the trench and preparing the proper bedding for the pipe, shall furnish all necessary equipment for properly lowering and placing sections of the pipe in the trench without damage and shall professionally install the pipe as per Section 03301.1. The full length of the barrel of the pipe shall have a uniform bearing upon six (6) inches of bedding material, but if the pipe has a projecting bell, suitable excavation shall be made to receive the bell, which shall not bear on the subgrade, see Standard Drawing WP-101. The requirement for closely fitting the bottom of the pipe to the bedding material for the width shown on the drawings will be strictly enforced. No sand, gravel or rock bags, or wood, stone or plastic blocks will be permitted. All pipe manufacturers installation guidelines will be followed.

03302.2.4 Installing Pipe on Slopes

When installing pipe on slopes greater than or equal to 10%, restrained joints are required to be installed on said slopes.

Pipe installed on slopes greater than 33% shall have slope anchors in accordance with Standard Drawing WP-126. Weld #6 bars to the steel pipe with 1/8”max. welding rod. Do not try to fill the entire space in one or two passes. Use short overlapping weld passes to lessen the heat build-up on the pipe and avoid damaging the cement mortar lining of the of the pipe. Keep interpass temperatures down – allow to cool between passes; weld one bar, then the next, then the third, then come back to the first and continue the cycle until complete. The lining should be inspected after the exterior welding is done and repaired if necessary.

03302.2.5 As-Built Survey

All installation shall have as-built survey performed by a registered civil engineer or licensed land surveyor on the installed items listed but not limited to all pipe/pipe joints, taps valves, fittings, directional changes, services, hydrants, blow off’s, Air/Vac’s, appurtenances, tanks, structures, etc. Reports showing GPS installation locations shall be submitted through the Agency’s preferred construction management software once a week for Agency review. Noncompliance of this requirement could impact the developer’s schedule. All GPS information shall be compatible to SCVWA Standards for data collection. Horizontal Data shall be provided in NAD 83, California Zone 5, and vertical datum shall be NAVD 88.

A Final Survey Report of all the required information listed herein shall be stamped and signed by the registered civil engineer or licensed land surveyor and shall be submitted through the Agency’s preferred construction management software by the Contractor and approved by the Agency prior to the filing of the Notice of Completion. The report shall document and certify that all work follows this specification.

03302.2.6 Defective Pipe

No pipe or materials shall be installed which are damaged, cracked, checked, or spalled, or has any other defect deemed by the Agency to make it unacceptable. All such sections shall be permanently removed from the work as per Section 03301.1.

03302.2.6 Unattended Pipe

Whenever the installed pipe is left unattended, the contractor shall provide temporary plugs and shall be installed at all openings. Temporary plugs shall be watertight and designed to prevent animals, humans, water and any foreign object/element from entering the pipe. All temporary plugs must be approved by the Agency and submitted as a submittal. The Contractor shall maintain the inside of the pipe free from foreign materials and in a clean and sanitary condition until its acceptance by the Agency.

03302.2.7 Pipeline Trench

The pipe trench shall be kept free from water at all times, and the Contractor shall take all necessary precautions to prevent the pipe from floating due to water entering the trench from any source, shall assume full responsibility for any damage due to this cause, and shall, at their expense, restore and replace the pipe to its specified condition and grade if it is displaced due to floating or due to any other reason.

All pipelines adjoining concrete structures shall have a flexible joint at eighteen (18) inches from the face of such concrete structures.

Before lowering and while suspended or standing vertically at trench side, the pipe shall be inspected for defects. Any defective, damaged, or unsound material will be rejected.

03302.3 Preparation and Inspection of Pipe

Before placing pipe in the trench, each pipe length shall be thoroughly cleaned from all foreign material and kept clean thereafter. Pipe shall be carefully examined for cracks and other defects prior to lowering into the trench for installation. Care shall be taken for bell ends and spigot ends and shall be examined prior to installing.

03302.4 Pipe Joint Lubricant and Joint Assembly

Pipe ends to be joined shall be cleaned of foreign material

03302.4.1 Lubrication

Joint lubricant shall be as supplied by the manufacturer and must be approved prior to being used. All lubricants must be non-toxic, water soluble vegetable soap solution and NSF approved. Said solution shall be applied inside the bell of the pipe in the trench and to the rubber gasket and spigot of the pipe to be installed. The rubber gasket shall be stretched into the groove and the bell-end of the pipe and distributed accordingly along the circumference of the pipe.

03302.4.2 Joint Assembly

Spigot shall be inserted into the bell of the pipe without tilting the pipe to be installed. Come-a-longs or pipe jacks shall be used to drive the spigot end into the bell until properly seated. Joint recess recommended by the pipe manufacturer for made-up joints shall be maintained. When deflecting pipe at joints for curved alignments, the manufacturers recommended allowable joints opening on one side shall not be exceeded. Feeler gauge shall be used to verify the proper placement of each gasket.

03302.5 Cutting and Pipe Fitting

All pipe shall be cut, when necessary, to conform to location of fittings, line and/or grade. All cuts shall be straight and true, and made in a workmanlike manner to leave smooth ends. All burrs must be removed and filled. All tools used for pipe cutting must be in good working condition and must be industry/trade standard. Pipe shall never be cut with a cold chisel, standard iron pipe cutter, or any other method that may fracture the pipe or produce uneven and ragged edges.

03302.6 Pipe Laying and Alignment

Pipe laying can only commence if proper survey stakes as per section 03302.2.

Any changes in alignment or grade shall be submitted in writing through the Agency's Preferred Construction Management Software and approved by the Agency.

The Contractor is responsible for verifying points of connection and joints for all items in this contract before starting any construction. All facilities must properly join and connect to improvements that exist at the time the point of connection is constructed. The Contractor shall notify the Agency' of any discrepancy in writing between plans, specifications, surveys, and the site conditions prior to start of work and shall obtain a clearance from the Agency in writing regarding resolution of the discrepancies prior to commencement of any work. It is the Contractor's responsibility to coordinate its work with the concurrent work on the site, accommodate other contractors, and complete facility connections in conformance with all governing agency regulations and the directions of the Agency.

Pipe shall be laid with the bell ends facing the direction of laying, unless directed otherwise by the agency.

Pipe laying shall be true in alignment, both vertical and horizontal, and shall not show any undue settlement after laying.

Pipe shall be laid to its intended alignment, which include any curves. When laying pipe on curves, short lengths of pipe or eleven and on quarter (11 ¼) degree bend shall be used as necessary to accomplish curvature without exceeding individual joint deflections of eighty percent (80%) of the maximum allowable deflection by the pipe manufacturer.

03302.7 Control of Water

The Contractor shall furnish, install, and operate all necessary machinery, appliances, and equipment to keep excavation sufficiently free from water during construction of the work to permit proper laying and jointing and shall dispose of water so as not to cause injury to public or private property or to cause a nuisance or a menace to the public. All water shall be discharged in accordance with Regional Water Quality Control Board requirements.

03302.8 Trench Material

Excavated material suitable for backfilling shall be piled in an orderly manner per the latest Cal-OSHA guidelines on the excavated banks to avoid overloading and to prevent slides or cave-ins. Such grading shall be done as necessary to prevent surface water from flowing into trenches. Any water accumulating therein shall be removed by pumping or other approved means. Such sheeting and shoring shall be installed as necessary for protection of the work and safety of personnel in accordance with Cal- OSHA requirements. Sheeting and shoring shall be in accordance with 203.2C-3. Excavations in earth and in rock shall be carried to six (6) inches below bottom of pipe. Bell holes and depressions for couplings, valves, and the like shall be excavated the same distances below these installations. The materials excavated shall be used in the backfill or removed and disposed of by Contractor as required by Engineer and as specified at no additional cost to the Agency.

All rocks or lumps larger than 3 inches in size in the subgrade which will not break up under the operation of grading equipment shall be removed and the resulting space refilled and compacted with selected material approved by the Engineer and by the Agency (or a designated Representative). Agency may require soils to be sifted if deemed necessary by the Agency representative prior to backfill.

03303 TRENCHING/EXCAVATING

03303.1 Water for Construction Purposes

The Contractor shall provide metered water for construction purposes, at the expense of the Contractor.

03303.2 Hydrant Meter (2-inch)

Contractor can request a hydrant meter (2-inch), in person, at the Agency's Customer Service location:

24631 Ave. Rockefeller
Valencia, CA 91355
(661)-294-0828

Meters must be removed while not in use or at the end of day.

03303.3 Flanged Construction Meter 2 inch and Larger

Contractor shall submit a request to the Agency's Engineering Services Section for flanged construction meters 2" and larger. This can be accomplished by:

Email

constructionmeterflanged@scvwa.org

In Person or Phone

26515 Summit Circle
Santa Clarita, CA 91350-3049
661-297-1600

03303.4 Trench Excavation

Trench excavation shall be done per Standard Drawing WP-101.

Any unforeseen utilities encountered, or inconsistencies shown on drawings, Contractor and/or Developer shall notify the Agency's Representative for guidance on how to proceed.

03303.5 Trench Width

All existing asphalt or concrete shall be saw-cut vertically in a straight line that is 4-inches wider on each side than the trench excavation. Remove and dispose all asphalt and concrete surfacing materials and it shall not be used in any way as fill or backfill.

03303.6 Trench/Excavation Support and Safety

Contractor shall provide access and egress for all trenches per Cal-OSHA regulations

Contractor is always to have a component person on site during trench/excavation operations. All trenches shall be properly supported and excavated as per Cal-OSHA regulations.

Trenches 20-feet deep or greater require the design of a protective system by a registered professional engineer and shall be done at the expense of the Contractor and/or Developer.

Contractor is responsible for maintaining a safe trench/excavation and construction environment and shall provide anything necessary to maintain a safe environment.

03303.7 Foundation Rock

Where ground water is encountered or the native material does not afford a solid foundation for pipe subgrade as specified herein, the Contractor shall excavate to such depths below the subgrade as necessary and shall construct a stable base by placing foundation rock upon which

pipe bedding can be prepared. Foundation rock shall be three-quarter (3/4) inch aggregate base material or crushed rock in accordance with SSPWC Section 200-1.2.

03303.8 Pipe Zone Bedding and Backfill Material

All pipe zones backfill from a depth of six (6) inches below the bottom of the pipe to twelve (12) inches above the top of the pipe shall be imported fill sand having a minimum sand equivalency of SE30 and conform to gradation requirements in SSPWC specifications section 217. The six (6) inch bedding layer shall be placed on the compacted trench bottom to a minimum of 90% The sand bedding and fill will be compacted per the onsite soils technician's recommendations. Bell holes must be dug deep enough to provide proper support and provide the necessary line and grade. The pipe shall then be installed, after which the remaining imported pipe zone material up to twelve (12) inches above the top of the pipe, shall be placed and compacted in lifts no greater than 6 inches, to said relative compaction of 90%.

03303.9 Backfilling Pipe Trenches above the Pipe Zone

Backfill in pipe trenches above the pipe zone shall be a structural fill (per SSPWC specification section 217) accomplished by filling and compacting the trench in lifts of depths that will permit obtaining a minimum compaction of 90% of the maximum density of the material at optimum moisture content.

All backfill materials shall be placed in such a manner as to not disturb the pipe or damage its coating. Impact, free fall, hydro hammer, or similar compaction equipment shall not be used for compaction in water system trenches. Slurry or cement-treated backfill material will not be allowed in trench except for curb gutters, cross gutters, etc. as determined by the Agency Inspector or by written permission of the Agency. Backfill material shall not be compacted by jetting unless approved by the Agency. No rocks larger than 3-inch diameter will be allowed. Agency may require a shift to be used for backfilling material.

Backfills within the State Highways shall be in accordance with Caltrans latest specifications.

03303.10 Trench Backfill and Compaction/Soils Test/Geotechnical Reports

The Developer or Contractor shall engage the services of a geotechnical engineering firm or individual licensed in the State of California to monitor soil conditions during earthwork, trenching, bedding, backfill and compaction operations. Sampling and testing procedures shall be performed in accordance with the Reference Standards and as follows:

The soils technician shall be present at the site during all backfill and compaction operations. Failure to have the soils technician present will subject such operations to rejection. Daily reports showing station number of test location and percentage of compaction met shall be submitted through the Agency's preferred construction management software once a week for Agency review. Noncompliance of this could impact the developer's schedule.

Density and optimum moisture content of soil shall be determined using the sand cone method, ASTM D 1556, or nuclear density gauge method, ASTM D 2922 & D 3017. Since the composition of the pipe and the walls of the trench influence the nuclear density gauge output, a minimum of 25% of the density and optimum moisture tests shall be made using the sand cone method. Determine laboratory moisture density relations of existing soil by ASTM D 1557, Method C and/or D (formerly ASTM D 4253 and ASTM D 4254).
Determine the relative density of cohesionless soils by ASTM D 1557, Method C and/or D (formerly ASTM D 4253 and ASTM D 4254). Sample backfill material by ASTM D 75.
Express "relative compaction" as a percentage of the ratio of the in-place dry density to the laboratory maximum dry density.

A Final Geotechnical Report of all soil's tests performed shall be stamped and signed by the soils firm engineer and shall be submitted through the Agency's preferred construction management software by the Contractor and approved by the agency prior to the filing of the Notice of Completion. The report shall document the sampling and testing of materials, the location and results of all tests performed, and shall certify that materials and work follow this Section 01142.4.

03303.11 Backfill Materials

The Contractor shall supply samples of the backfill material to the Agency from the supplier at a minimum of 24 hours prior to placement of backfill. If the Contractor does not supply samples in a timely manner, then the material and any backfilling will be rejected, and the Contractor will replace the backfill material at no additional cost to the Agency.

03303.12 Soils Testing

All soils testing shall be done in accordance with *SSPWC*, *Section 211*, and by a testing laboratory of the Agency's choice at the Contractor's expense.

Where soil material is required to be compacted to a percentage of maximum density, the maximum density shall be determined in accordance with the requirements of *SSPWC, Subsection 211-2*. In case the tests of the fill or backfill show non-compliance with the required density, the Contractor shall accomplish such remedy as may be required to ensure compliance. Subsequent testing to show compliance shall be by a testing laboratory selected by the Agency and shall be at the Contractor's expense.

The Developer will retain the services of an independent soils firm having a State of California licensed laboratory to make soils compaction tests at any point or points or depths as the Agency sees fit after the trench is backfilled. Compaction shall be measured relative to the ASTM D1557 laboratory maximum density and in accordance with *SSPWC, Subsection 211-1*. The minimum number of tests shall be shown on the plans and shall be performed every 100 linear feet of pipe and at every lateral. In the event any of said tests indicate that the trench compaction is less than the compaction above described, the Contractor will be required, at his

own expense, to remove placed trench material in the zone or zones directed by the Agency and to then replace and compact said trench material to meet the requirements of this specification. Retesting at the Contractor's expense will be required on all recompacted material. Unless otherwise noted.

03303.13 Clean Up

Upon completion of the day and/or project, the Contractor, shall remove all rubbish, concrete forms and other like material shall be removed from the jobsite. All excess excavation material shall be disposed of properly and the jobsite shall be left in a state of order, cleanliness and shall be kept safe and free from any hazard.

SECTION 04: VALVES, FIRE HYDRANTS AND APPURTENANCES

04400 GENERAL

This section covers the installation of manual valves, fire hydrants and appurtenances and includes materials and testing.

04400.1 AGENCY APPROVAL

The standards and specifications shown hereon, many handling and installation procedures, tools, equipment, materials require approval by the agency. Agency approval is used as means to ensure the quality of potable and recycled water systems.

04400.2 SUBMITTALS

No installation may occur without proper material(s) submittal(s), disinfection/pressure testing plan, and construction schedule, which must be approved by the Agency prior to Pre-Construction meeting, per section 01117 and 01118

04400.3 INSPECTION

No installation may occur without the proper inspection of all materials, valves, fire hydrants, appurtenances, and any other associated materials.

04400.4 DELIVERY, STORAGE AND HANDLING

Valves shall be delivered and stored in accordance with AWWA C550. Port openings shall be covered with plastic, carboard or wood while in transit and during storage in the field. These covers shall remain in place until valves are ready to be installed and may be removed only for the purposes of inspection but shall be re-covered until installation. Valves shall not be stored in contact with the bare ground and while moving around during installation. Valves shall never be stacked.

04400.6 RESPONSIBILITIES

The contractor is responsible for adhering and providing/furnishing proper materials, construction equipment, tools, and any other piece of equipment necessary for the proper installation of valves, fire hydrants and appurtenances.

04401 VALVES

All main line valves shall be located on the property line or utility easement prolongation in the street unless otherwise indicated by the Agency.

All valve box risers shall be of six (6) inch PVC SCH 40 pipe. Pipe shall be white in color for potable water valves and purple color for recycled water valves. The valve slip assembly shall be per Standard Drawing. Valve lids shall be in accordance with Standard Drawing 108A/B/C, stamped with the required lettering and color powder coated accordingly. All valve risers shall be adjusted so that the valve slip can/box will be flush with the finished street grade per Standard Drawing 108A/B/C.

All tees and crosses within an in-tract/parcel subdivision development shall be fully valved at all outlets.

All new potable and recycled water systems shall have at a minimum, a valve every 800-1200-feet.

All rubber in valves shall be EPDM. Valves shall be installed level and in alignment with the pipe. Each valve shall be operated prior to its installation to assure proper functioning. Valves shall close clockwise and open counterclockwise. Contractor shall verify valve turn count as indicted by the manufacturer and shall provide the information to the agency inspector prior to project close-out.

Valves three (3) inches and smaller shall be lead free brass or stainless-steel ball valves.

Valves between 4 inches and 10 inches shall be resilient wedge gate valves (RWGV), as specified in section 04402.

Unless otherwise specified, all valves twelve (12) inch and larger shall be butterfly valves, as specified in section 04403.

Valves shall not be located on curb and gutter. In addition, no valve shall be located above or below any utility or pipeline and shall be free of obstructions and easily operatable.

All valves shall open counterclockwise and close in the clockwise position.

Buried valves shall be wrapped in polyethylene wrap(s) in accordance with section 02205.1.

Tracer wire shall be installed in a single non looping run on all valves in accordance with section 02205.2.

The following criteria shall be used when determining and selecting valves.

Valve Selection Criteria/Requirements

Nominal Valve Diameter (inches)	Normal System Static Pressure (100 to 150 psi)	Normal System Static Pressure (150 to 250 psi)
3 and smaller	Ball (Min. 200psi)	Ball (Min. 200psi)
4 to 10	Gate	Butterfly (CL 250)
12 and Larger	Butterfly	Butterfly (CL 250)

04402 BALL VALVES

Ball valves shall be installed on 3-inch or smaller, water services and/or as shown on the approved plans.

Ball valves 3-inch and smaller shall be of bronze construction conforming to ASTM B62 and equipped with a T-Head or lever handle operator as required. Valve ends shall be compatible with the piping system in which they are being installed or as indicated on the Approved Plans or Standard Drawings. Ball valves shall be rated for a minimum pressure of 200 psi. Ball valves shall be selected from the Approved Materials List.

DIPRA approved V-BIO Polyethylene wrap shall be used for buried installation of ball valves in accordance with section 02205.1.

Tracer wire shall be installed in accordance with section 02205.2.

04402.1 Corporation Stops

Corporation stops shall be the ball type with a bronze body and T-Head operator. Valve ends shall be compatible with the piping system in which they are being installed or as called for on the Approved Plans or indicated on the Standard Drawings. Corporation stops shall be rated for a minimum pressure of 200 psi. Corporation stops shall be selected from the Approved Materials List.

04402.2 Angle Meter Stops

Angle meter stops shall be the ball type with a bronze body and 90° lock wing. Valve ends shall be 110-style compression inlet and swivel meter nut for 1-inch and meter flange for 2-inch outlets. Angle meter stops shall be rated for a minimum pressure of 200 psi. Angle meter stops shall be selected from the Approved Materials List.

04403 RESILIENT WEDGE GATE VALVES (RWGV's)

All gate valves must equal or exceed the requirements of the latest revision of AWWA C509, standards for gate valves and resilient-wedge gate valves. The body shall further be coated with 10 mil epoxy, the trim 316 stainless steel and all rubber be EPDM and shall be Mueller, Clow, Kennedy, or approved equal.

Valves supplied shall be resilient wedge, with O-ring seals, non-rising stems, two (2) inch operation nut, opening left.

Valves specified "with hand wheels" shall be supplied with operating hand wheels instead of two (2) inch operating nut.

Valve ends shall conform to AWWA standard; flanged ends per AWWA C110 as required for steel pipe; or mechanical joints as required for ductile iron.
Gate valves shall open counterclockwise and close clockwise, and the Agency shall be provided with a valve turn count, by the Contractor, for opening/closing.

Resilient Wedge Gate Valves for recycled water systems shall be coated purple and have proper identification and labels.

Resilient Wedge Gate Valves shall have a minimum pressure rating of 250 psi.

Resilient Wedge Gate Valves shall be the same size as the line in which they are installed unless otherwise noted on the approved plans.

DIPRA approved V-BIO Polyethylene wrap shall be used for buried installation of resilient wedge gate valves in accordance with section 02205.1.

Tracer wire shall be installed in accordance with standard drawing WP-108A/B/C and per section 02205.2.

04404 BUTTERFLY VALVES

Butterfly valves shall meet the provisions of AWWA C504 for rubber seated, tight closing valves and must use EPDM rubber. Butterfly valves shall be flanged-pattern short body, and shall be cast iron ASTM A126 class B, shaft or stainless steel 18-8 Type 304, disc of Ni-Resist Type 1.

They shall be Class 250 unless noted on the plans. The valve manufacturer's name, year of manufacturer, valve size, model number and rated design pressure shall be cast on the body of the valve. Butterfly valve operators shall be waterproof, suitable for buried service and equipped with a two 2-inch square operating nut. Open and close stops shall be provided to limit valve disc travel. Handwheel operators shall be equipped with position indicators. The operating direction to open shall be right and to close shall be left. The direction of open shall be cast on the operating hand-wheel. Where possible, operators shall be placed on the side of the pipeline nearest the curb, opposite centerline of street. Butterfly valves shall be anchored for thrust in accordance with the requirements of these specifications and as shown in Standard Drawing No. WP-108A/B/C. Concrete pads shall be poured under butterfly valves adequately anchored for thrust.

All butterfly valves shall be field tested in the presence of the inspector prior to installation for compliance with Section 5 of AWWA C504. This includes performance, leak, and hydrostatic testing. Factory certification is not an acceptable substitute for the field testing. Any valves not tested will be rejected. Contractor shall coordinate with pipe manufacture to ensure free movement of valve disc within the pipe.

Butterfly valves for recycled water systems shall be coated purple and have proper identification and labels.

Butterfly valves shall be the same size as the line in which they are installed unless otherwise noted on the approved plans.

Polyethylene wrap shall be used for buried installation of butterfly valves in accordance with section 02205.1.

Tracer wire shall be installed in accordance with standard drawing WP-108A/B/C and per section 02205.2.

04405 PLUG VALVES

Plug valves shall be used only where specified.

Plug valves shall be lubricated, have a semi-steel body, and tapered plug with dry film coating on seating surface with adjustable 3-bolt gland assembly sealed by double O-rings. The plug shall be removable through the top of the valve. The valves shall be designed for the working pressures shown on the plans (min. 200 psi). Plug valves shall be Rockwell, Dezurick, or approved equal.

Unless approved otherwise, plug valves shall have flanged ends and shall be equipped for enclosed worm gear operating with a two 2-inch square operating nut were called for on plans.

Other valves shall be lever operated. Plug valves shall be equipped with lubricator extensions as indicated on the plans.

04406 CONTROL AND CHECK VALVES

04406.1 Standard Check Valves

Standard check valves shall be slanting disc bottom buffer type valves to prevent slamming during instantaneous shutoff. The area through the valve shall equal that of the full area of the pipe. Use Val Matic Swing Flex or approved equal and be of EPDM rubber.

04406.2 Automatic Control Valves

Automatic control valves shall be Cla-Val only and hydraulically operated, diaphragm-actuated, globe pattern valve. Valves shall contain a resilient disc, EPDM, having a rectangular cross-section, contained on three and a half sides by a disc retainer and forming a tight seal against a single removable seat insert. The diaphragm assembly contacting a valve stem shall be fully guided at both ends by a bearing in the valve cover and an integral bearing in the valve seat. The stem will be self-cleaning. This diaphragm assembly shall be the only moving part and shall form a sealed chamber in the upper portion of the valve, separating operating pressure from line pressure. The diaphragm shall consist of nylon fabric bonded with synthetic rubber and shall not be used as a seating surface. Packing glands and/or stuffing boxes are not permitted and there shall not be pistons operating the valve.

Valve shall be of indicated size and shall be of manufacturer's standard cast iron or ductile iron with Type 303 stainless steel trim (seat, disc guide, cover bearing, stem nut and stem). Valve shall have a 200-psi pressure rating with Class 250 ductile iron flanges. Interior ferrous surfaces shall be factory lined with liquid epoxy per the painting section. Also, all exterior ferrous surfaces shall be coated per the painting section.

The design shall preclude cavitation erosion, fouling of working surfaces, and other effects adverse to reliability. Seats and other trim shall be secured by means precluding their loosening by hydraulically induced vibrations; and the fit of stems in guides and guide lengths shall preclude any binding, scraping, or deviation from true alignment affecting the free movement of working parts.

Diaphragm-actuated, hydraulically controlled valves shall have an unrestricted opening with an adjustable controlled closure rate so that valve slamming is reduced to an absolute minimum upon instantaneous shut-off. Valve shall be hydraulically operated, and pilot controlled. Valves shall be CLA-VAL or approved equal. If put into vaults, all pilot controls must be stainless steel.

04407 COMBINATION AIR/VACUUM RELEASE VALVE AND BLOW-OFF ASSEMBLIES

Combination air/vacuum release valve assemblies shall be installed at all highpoints along the pipeline and at locations shown on the plans. The tap for the air valves and/or blow-off valves shall be made in a level section of pipe, no closer than twenty-four (24) inches from any machined section of pipe, rubber gasketed joint, bell, coupling, fitting, flanged joint or another

service tap. Where practical, connections to steel pipe for combination valve assemblies and/or blow-off assemblies shall be made with a coupling welded to the pipe in the shop at time of fabrication. Where it is necessary to make the connection in the field, additional care shall be exercised to minimize the damage to mortar-linings in accordance with the Standard Drawings. Wherever connections can be made dry, the coupling shall be welded to the pipe and the mortar lining repaired in accordance with Standard Drawing WP-141. The exterior cement mortar lining shall be repaired in accordance with the specifications and the Standard Drawings. Paint all (buried and above grade) exposed metal in conformance with the painting section of these specifications. Locate blow-off risers within street ROW where possible or behind curb in accordance with Standard Drawing WP-107 and as shown on the Plans. Locate air release valve covers in accordance with Standard Drawing WP-107 and as shown on the Plans.

Additionally, Air Vacuum assemblies and blow-off may be installed at the discretion of the inspector as deemed necessary whether shown on the approved plans.

04407.1 Air and Vacuum Release Valve Assembly

The Contractor shall install a combination air and vacuum release valve assembly as shown on Standard Drawing WP-111, 112 and 142 at locations detailed on the plans and the engineer preparing the plans shall design the size of the air release valve based on industry standards and in accordance with the manufacturer's recommendations. Generally, one (1) inch assemblies are used for eight (8) inch and smaller mains, and two (2) inch assemblies are used for larger mains up to twelve (12) inch. The engineer designing the Plans shall also determine the proper spacing intervals, the placement of above grade assembly, and the size of the enclosure to fit all appurtenances necessary for maintenance of the assembly. Trench shall be per Standard Drawing WP-101.

When installing an air vacuum valve assembly in residential areas they shall be located on property lines between residential lots.

04407.2 Blow-off Assemblies

The Contractor shall install blow-off assemblies as detailed on the plans. Valves and fittings shall equal or exceed the pressure rating of the pipe to which they are attached, see section 04401. Materials and required fittings are shown on Standard Drawing WP-113, 114, 115, 116 and/or 142. The blow-off assembly shall be adequately sized for draining and flushing of water lines. All valve boxes and riser covers shall be placed in the public ROW and designed for full AASHTO H-20 loading when in a trafficked way unless otherwise approved by the Agency. Trench shall be Standard Drawing WP-101.

04408 FIRE HYDRANT ASSEMBLIES

Fire hydrant assemblies shall include the connection to the main and shall consist of fire hydrant and appurtenances in accordance with these specifications and as shown on the Standard Drawing WP-103.

04408.1 Location

Hydrants shall be located as shown or as directed and, in a manner, to provide complete accessibility and in such a manner that the possibility of damage from vehicles or injury to pedestrians will be minimized. All fire hydrants must have five feet of clearance around them with no obstructions (See Standard Drawing WP-107). When installing a hydrant in residential areas they shall be located on property lines between residential lots.

04408.2 Position

All hydrants shall stand plumb and shall have their nozzles facing the curb or street at an angle of forty-five (45) degrees.

04408.3 Fire Hydrant Barricades

When required, fire hydrant barricades shall not obstruct the outlets and shall be constructed per Standard Drawing WP-106A.

04408.4 Materials

04408.4.1 Hydrants

Fire hydrants shall be of the wet-barrel type (brass or bronze), with individual valves for each outlet, and shall conform to the requirements of AWWA C503.

Fire hydrants shall be six (6) inches by four (4) inches by two and one half (2-1/2) inches Jones No. J-4040BRE or Clow 850. All valve operating stem ends shall be equipped with pentagonal dummy nuts the same size as the nozzle cap ends.

Fire Hydrants in all cases must be approved by the County of Los Angeles, Forester, and Fire Warden. Fire hydrant tops shall be tapped for two and one-half (2 1/2) inch I.P.T. Fire hydrant location and maximum spacing interval shall be in accordance with the governing agency and approved by the Agency.

Fire hydrant risers shall be provided with Class 150 cast iron flanges and shall be installed four (4) inches to six (6) inches above grade.

Fire hydrant risers and runners shall be a full six (6) inches inside diameter pipe. The run shall be ductile iron as described in Standard Drawing WP-103. The bury shall be Jones No. J-4040BRE or Clow 850 flange unless otherwise specified.

All required bolts, nuts, and gaskets shall be provided. Bolt (8) hole flange 3/4" diameter holes bolts 5/8" x 3" long, and (8) hole flange 7/8" diameter holes bolts 3/4" x 3" long. Bolts at hydrant flange shall be installed with nuts on bottom. Only hexagonal nuts and bolts will be permitted. All bolts provided must be a minimum length of at least three threads past nut when tightened.

All hydrants shall be painted with one (1) coat of primer and two (2) finish coats of Safety Yellow or approved equal. The Contractor shall apply an additional finish coat after installation.

04408.4.2 Hydrant Bury

The bury section shall be ductile iron and shall be double cement lined.

04408.4.3 Bury Depth

Bury depth shall be 42-inches for distribution mains and 48-inches for transmission mains. Field conditions may require different depth fire hydrant buries to fit abnormal pipe, as approved by the Agency Inspector and/or Engineer.

04408.4.4 Break-Away Spools

Cast iron break-away spools shall be provided for each hydrant installation as shown on the Standard Drawing WP-103. Each spool shall have a scored groove placed circumferentially around the spool near the hydrant end of the spool. The score shall be placed above-grade. Only one score shall be made in the hydrant break-away spool piece. Spool flanges shall be an 8-hole pattern to match both the hydrant and the bury.

04408.4.5 Break-Away Bolts

Cad-plated break-away bolts shall be used to join the break-away spool section to the hydrant top section. Cad-plated SAE washers shall be placed between the hydrant flange and the cad-plated nuts.

04408.4.6 Isolation Valve

A Resilient Wedge Gate Valve, per section 04403, shall be installed for the sole purpose to isolate the fire hydrant as shown on Standard Drawing WP-103. Valve shall be within 10-feet of the proposed hydrant (±2-feet) or as approved by Los Angeles County Fire Department.

04409 LOCATION OF APPURTENANCES

The Agency reserves the right to direct the location of all valve marker posts, air release valve assemblies, and blow-off valve assemblies within the public right-of-way or easement to ensure proper drainage and to minimize interference with traffic.

04410 FLEXIBLE COUPLINGS

Flexible couplings shall have all stainless-steel nuts and bolts and be either stainless steel bodies or all epoxy lined and coated. They shall be Hymax, Rockwell, Smith-Blair, Baker, Dayton, or approved equal. Flanged couplings adapters shall be Hymax, Rockwell, Smith-Blair, Baker,

Dayton, or approved equal. Clamp type mechanical couplings shall be as manufactured by the Victaulic Company of America, Gustin-Bacon, or equal and shall be for pipe with grooved ends for water service and able to withstand a pressure equal to the strength of the pipe to which they are attached. All flexible couplings shall be protected by coating in accordance with the painting section of these Specifications.

04411 FIRELINE METERS

All projects that are required to provide on-site fire protection will be required to install a fire department and SCVWA approved fire service meter that is sized appropriately to meet the projects on-site fire protection and domestic requirements. Assemblies shall be completely contained in a vented vault and include sufficient valving and bypass capabilities to allow the meter to be serviced, removed, or tested without interrupting water service to the customer. The serial number shall be stamped on the body of the meter. The compound meter and vault must be fully detailed on improvement plans. The vault shall be in accordance with Standard Drawing WP-125D.

04412 WATER METERS

All water meters are installed by the Agency and paid for by the Applicant/Developer. All applicable facility capacity fees must be paid prior to installing/requesting a water meter. No water meter will be installed until the contractor satisfies all punch-list items.

04412.1 Compound Meters

Projects that are not required to provide on-site fire protection will be required to install a domestic AMR water meter approved by the Agency that is sized appropriately to meet the projects on site domestic requirements. Domestic compound meters shall be completely contained in a vented vault and include sufficient valves and bypass capabilities to allow the meter to be serviced, removed, or tested without interruptions of water service to the customer. Serial number of meters shall be stamped on body of meter. The meter and vault must be fully detailed on improvement plans.

SECTION 05: POTABLE AND RECYCLED WATER SERVICE LINES

05500 GENERAL

This section covers the materials, installation/abandonment and testing of potable and recycled water service lines

05500.1 AGENCY APPROVAL

The standards and specifications shown hereon, many handling and installation procedures, tools, equipment, materials require approval by the agency. Agency approval is used as means to ensure the quality of potable and recycled water systems.

05500.2 SUBMITTALS

No installation may occur without proper material(s) submittal(s), disinfection/pressure testing plan, and construction schedule, which must be approved by the Agency prior to Pre-Construction meeting, per section 01117 and 01118

05500.3 INSPECTION

No installation may occur without the proper inspection of all materials for potable and recycled water service lines and any other associated materials.

05500.4 DELIVERY, STORAGE AND HANDLING

All potable and recycled water service materials shall be delivery free of damages, shall be stored in a safe location and secured from weather elements and/or any other element that may contaminate or damage water service materials. All material shall be handled in a safe and proper way to prevent damage to such material.

05500.6 RESPONSIBILITIES

The contractor is responsible for adhering and providing/furnishing proper materials, construction equipment, tools, and any other piece of equipment necessary for the proper installation of potable and recycled water service lines.

05501 LOCATION/SERVICE OF POTABLE AND RECYCLED WATER SERVICE LINES

05501.1 Service Connections

Each residential Lot shall have at least one potable water service line and meter to service the lot.

Each Commercial lot shall have at least one potable water service line and meter to service the lot for domestic water purposes. Commercial lot(s) with landscaping shall also have one individual landscape water service line and meter (recycled water service line if available) to the service the lot.

All landscape water service lines are to be recycled water, where available.

A single service line is required for each metered connection.

05501.2 Location

The trench for the services shall have a minimum width of ten (10) inches and a depth of thirty (30) inches below the existing or finished grade throughout the length of service up to two (2) inch services. Services larger than two (2) inches shall be detailed in supplementary drawings, which will be furnished to the Agency if such larger size is specified. Services two (2) inches and larger shall have a USC certified backflow device installed maintained by owner/customer.

Size of services shall be shown on the plans, as specified, or as determined by the Agency.

In general, each service shall start at the new water main and shall extend to the meter location at an elevation determined by Standard Drawing WP_109 and the existing grade at the meter location. Each service shall be connected to the corporation stop at the main and an angle stop shall be installed at its end in the meter box location. Service laterals shall be perpendicular to the water main.

The locations of the meter boxes shall be as indicated on the plans or as directed by the inspector. No meter box shall be installed closer than five (5) feet from the edge of a driveway apron. Services shall not be installed in driveways and/or customer's hardscape.

Single service lines shall not be less than ten (5) horizontal feet from sewer laterals.

In no case shall a service or other tap be made in a main closer than twenty-four (24) inches to a bell, coupling, joint, fitting, or another service tap. Multiple taps shall be staggered.

Services shall be tested and disinfected in the same manner as specified elsewhere herein for water mains. These operations shall be performed concurrently with the testing and disinfecting of the water mains where practicable.

Dielectric connections shall be provided where dissimilar metals are joined.

05502 ONE- AND TWO-INCH SERVICES

All one and two-inch water services shall be installed per standard Drawings WP-101 and 109.
Two individual services (2-inch and smaller) may be located in a single thirty-(30) inch minimum wide trench located approximately along the projection of a lot line common to any two (2) lots, thus placing each meter within its corresponding lot.
Service lines shall not exceed twenty (20) feet unless otherwise specified by the Agency.

05502.1 Temporary Services

Can be installed using copper tubing for temporary services, it shall be seamless copper water tube, Type K, cold drawn, and annealed of the size shown on the plans. It shall be true, smooth, clean on both inside and outside, and free from any cracks, seams, or other defects. It shall be truly cylindrical, of the full specified outside and inside diameters and of uniform thickness of metal and shall conform to ASTM B88. The tubing shall be continuous between the main line and the meter with no splices permitted. Any repairs made must be Silver Solder or Lead-Free Pipe Solder or may have to be replaced entirely as specified by the inspector. No compression fittings are to be used on 2" copper. All fittings shall be solder-joint fittings. Buried copper pipe shall be wrapped with polyethylene wrap as specified in section 02205.1 and tracer wire shall be installed as specified in section 02205.2.

05502.2 Permanent Services

All one and two-inch services shall use Municipex Tubing and shall meet or exceed the following If using Municipex tubing for services, it shall meet or exceed the following industry standards:

- Manufactured to SDR9 copper tube sizes (CTS) according to ASTM F876, AWWA C904 and CSA B137.5
- Certified to AWWA C904 Crosslinked Polyethylene (PEX) Pressure Pipe, 1/2 in. (13 mm) Through 3 in. (76 mm), for Water Service
- Certified to CSA B137.5 Crosslinked Polyethylene (PEX) Tubing for Pressure Applications
- Certified to NSF/ANSI Standards 14 and 61 (NSF-pw-g) for potable water applications
- Certified to PPI TR-3 Category 3306 for long-term hydrostatic strength, chlorine, and UV resistance
- Tested in accordance with ASTM F2023 for chlorine resistance
- Tested in accordance with ASTM F2657 for UV resistance; provides superior UV resistance

Municipex tubing shall be blue in color for potable water services and shall be purple for recycled water services.

SECTION 06: PIPELINE SYSTEM TESTING

06600 GENERAL

This section describes the minimum requirements for testing and disinfection by chlorination of potable water mains, services, and appurtenances. All Chlorine used will be NSF approved. All connections made from Agency potable systems to future untested potable water systems, will require a USC / Agency approved RP backflow device. Backflow device shall be certified and tested.

The Contractor is to follow the latest AWWA C651 Standard for Disinfecting Water Mains. Additionally, the Contractor shall follow AWWA B300 and B301. The contractor is responsible for installing the temporary water sampling station locations per AWWA guidelines.

The test shall be conducted with valves in the open position.

No testing will be permitted without completed easement documentation filed and accepted by SCVWA (see Section 01105)

06600.1 Submittals

All material and methods to disinfect any water main shall be submitted to the Agency, and approved, prior to the start of construction and the Pre-Construction meeting. The Contractor shall also submit a written disinfection and de-chlorination plan. The plan shall include at a minimum the following.

1. Dates and Shutdowns (if necessary) for disinfection.
2. Method(s) of disinfection to be used.
3. Necessary calculations.
4. Plan showing the design, equipment, and sequencing.
5. Plan shall be signed by the person responsible for performing the work.
6. Sample locations, Flushing locations and discharge locations.

06600.2 Application

All water mains and appurtenances taken out of service for inspection, repairs, or other activity that might lead to contamination shall be disinfected and may be required to be sampled before they are returned to service.

All new water mains and temporary pipelines shall be disinfected per Agency standards prior to connection to the Agency's existing system.

All water system valves shall be cycled during the disinfection process.

All components incorporated into a connection to the Agency's existing system shall be disinfected per Agency Standards prior to installation.

06600.3 Delivery, Storage and Handling

Chlorination and de-chlorination shall be performed by competent individuals knowledgeable and experienced in the operation of the necessary application and safety equipment in accordance with applicable Federal, State and Local laws and regulations. The transport, storage and handling of these materials shall be performed in accordance with Code of Federal Regulations (CFR) 1910.120 Hazardous Waste Operations and Emergency Response, CFR 49.172 Hazardous Materials Regulations, and the General Industry Safety Orders of the California Code of Regulations, Title 8, Section 5194.

06600.4 Concurrent Disinfection and Hydrostatic Testing

Both Disinfection of pipelines and hydrostatic testing shall not be performed concurrently.

06600.5 Requirements for Testing

All piping, valves, fire hydrants, services, and related appurtenances shall be installed.

The pipe trench shall have trench zone backfill placed and compacted with a minimum of 24-inches of material over the pipe.

All concrete thrust block and anchor blocks shall be allowed to cure for 24 hours.

Pressure tests on exposed and aboveground piping shall be conducted only after the

entire piping system has been installed and attached to pipe supports, hangers or anchors as shown on the Approved Plans.

Steel pipelines shall not be tested until factory-applied mortar linings and coatings on all pipe lengths have been in place for a minimum of fourteen (14) days. Steel pipelines with cement mortar field-applied to the interior of the pipeline shall not be filled with water until a minimum of eight (8) hours has elapsed after the final placement of cement mortar, unless otherwise approved by the Agency.

The Contractor is required to pre-test all pipelines before requesting a hydrostatic testing.

06600.6 Execution

The Contractor shall provide the Agency Inspector with a testing schedule including all required tests with the proposed dates and times. This schedule shall be submitted through the Agency's preferred construction management software for review and response, with a minimum of (5) Agency working days' notice. No type of testing work, including pipe filling shall initiate until a testing schedule is submitted and accepted.

The Contractor shall furnish all labor, materials, tools, and equipment for testing.

Temporary blocking during the tests will be permitted only upon the direction or acceptance of the Agency Engineer.

At the onset of testing, all valves, air vacuum assemblies, blowoffs, and services shall be monitored for possible leakage and repairs made, if necessary, before the test proceeds. The appurtenances shall be monitored through the duration of the testing.

06601 TEMPORARY WATER SUPPLY CONNECTIONS

06601.1 Materials

1. Water: Potable water, supplied by a source approved by the Agency Engineer, shall be used for all testing of potable and recycled water mains.

2. Connections: Testing water shall be supplied through an SCVWA Hydrant or Construction Meter and equipped with a USC/Agency approved R.P. backflow prevention device at the point of connection to the potable water source used. The Backflow device shall be registered with the Agency and meet all installation regulatory requirements including following the Agency's Cross Connection Control Program which can be found on the Agency Website yourscvwater.com and being tested and certified by a Los Angeles County Certified Tester.

The Contractor shall provide any temporary piping needed to deliver potable water to the

piping that is to be tested. Temporary piping shall be new or certified potable only, tested and pass all necessary tests in accordance with Section 06.

06602 FILL AND SOAK

Pipelines with cement-mortar lining shall be filled with water at system pressure and allowed to soak for (24) hours prior to the velocity flush test.

06603 VELOCITY FLUSH

06603.1 Flushing Water Mains and Appurtenances

Flushing of pipelines shall be performed after the minimum of 24-hour soaking period. Flushing shall be in accordance with the latest AWWA C651 Standards. If a flushing velocity of 3.0 ft/sec cannot be achieved, with prior Agency approval, three pipe volumes may be allowed.

Flushing of all pipelines shall be at a maximum of 2,000’ in length and flushed as one continuous run of pipe or as directed by the Agency

06604 HYDROSTATIC TEST

This section describes the requirements for pressure and leakage testing of all pressure mains.

Hydrostatic testing of pipelines shall be performed after the velocity flushing and prior to disinfection operations in accordance with Section 06600. In the event repairs are necessary, as indicated by the hydrostatic test, the Agency Engineer may require additional flushing in accordance with Section 06600.

06604.1 Field Procedure

Before applying the specified test pressure, care shall be taken to release all air within the pipe and appurtenances to be tested. Air shall be released through services, fire hydrants, air release valves, or other approved locations.

A 2-hour hydrostatic pressure test shall be performed after the pipe and all appurtenances have been installed and after any trench backfill compaction with heavy-duty compaction equipment has been completed. The hydrostatic test pressure shall be 150% of the working pressure at the point of test, but not less than 125%of normal working pressure at the highest elevation. On single new runs connecting to the existing water system, the test will be a 0 (zero) PSI drop for 2 hours. On new larger sections, not single runs, the hydrostatic test shall be of at least 2 hours and cannot very by + (plus) or – (minus) 5 PSI. After the two-hour test is complete, the line must be pumped back up to the original test pressure using the allowable leakage if the PSI has dropped.

If pressure loss exists, the cause of the loss shall be located and repaired with prior Agency approval. All defective pipe, fittings, valves, and other appurtenances discovered shall be

removed and replaced with sound material. The hydrostatic test shall be repeated until pressure loss does not occur. All visible leaks shall be similarly
repaired. The Agency has the right to reject any new pipeline, with any number of leaks.

All testing and necessary repairs shall be at the expense of the contractor.

06605 DISINFECTION

06605.1 Materials

The Contractor shall follow AWWA B300 and B301

06605.1.1 NSF Approved Liquid Chlorine Gas

Liquid chlorine gas contains 100-percent available chlorine and is packaged in steel containers in net weights of 68.1kg (150 lb.) or 907.2kg (1 ton).

Liquid chlorine gas shall be used with appropriate gas flow chlorinators, heaters, and injectors to provide a controlled, high-concentration solution feed to the water. The chlorinators and injectors shall be the vacuum-operated type.

The use of Liquid Chlorine Gas will require the contractor to submit an emergency response safety plan through the Agency's preferred construction management software. This plan will be required to meet all Cal-OSHA and HAZWOPER requirements.

06605.1.2 NSF Approved Sodium Hypochlorite Liquid

Sodium hypochlorite is available in liquid form in glass or plastic containers, ranging in size from 0.95 L (1 Qt.) to 18.93 L (5 Gal). The solution contains approximately 10% to 15% available chlorine.

06605.1.3 NSF Approved Tablet or Granular Hypochlorite

Only if approved by the Agency, full submittal required.

06605.2 Execution

Disinfection of pipelines shall not proceed until all appurtenances and any necessary sample ports have been installed and the Agency provides authorization.

All valves and appurtenances shall be operated during the disinfection test period.

All disinfection procedures shall follow the latest AWWA C651 standards

06605.3 Discharge of Chlorinated Water

Indiscriminate onsite disposal or discharge to sewer systems, storm drains, drainage courses or surface waters is PROHIBITED. It shall be the responsibility of the Developer to file a Notice of Intent and obtain a General Waste Discharge Requirements Permit for

Discharges of Hydrostatic Test Water and Potable Water to Surface Waters, Storm Drains or Other Conveyance Systems, Los Angeles Region (Hydrostatic Test Permit) for any discharge of hydrostatic test water or other potable water. The Contractor shall be solely responsible to evaluate, obtain and comply with the provisions of the Hydrostatic Test Permit, including any monitoring and reporting as may be required. The Contractor shall comply with all requirements of the State Water Resources Control Board and the Los Angeles Regional Water Quality Control Board. The Contractor shall provide copies of all reports and monitoring information to the Agency Engineer.

Failure to comply with the Hydrostatic Test Permit is a violation of federal and state law. The Contractor hereby agrees to indemnify and hold harmless the Agency, its Board members, officers, agents, employees, and authorized volunteers from and against any and all claims, demands, losses or liabilities of any kind or nature which Agency, its Board members, officers, agents, employees, and authorized volunteers may sustain or incur for noncompliance with the Hydrostatic Test Permit arising out of or in connection with the Project.

The environment to which the chlorinated water is to be discharged shall be examined by the Developer and the Private Engineer. Where necessary, federal, state, and local regulatory agencies should be contacted to determine special provisions for the disposal of chlorinated water. Any indication that the discharge of chlorinated water may cause damage to the environment shall require the neutralizing of the chlorine residual by means of a reducing agent in accordance with AWWA C651 and the requirements of this specification.

In locations where chlorine neutralization is required, the reducing agent shall be applied to the water as it exits the piping system. The Developer shall monitor the chlorine residual during the discharge operations.

06605.4 Re-Disinfection

If any samples fail the Coliform Bacteria or HPC Tests, the entire pipeline(s) will be re-flushed by the Contractor, as detailed in 03305.8 of this section, and re-sampled per the initial sample method (A or B) required by the Agency as specified herein.

If, after the re-flushing procedures described above are performed, the new pipeline(s) continue to fail either the Coliform Bacteria or HPC Tests, the pipeline(s) shall be re-flushed, re-disinfected, and re-sampled, and may be subject to additional / mechanical cleaning requirements at the discretion of the Agency. These procedures shall continue until satisfactory results are obtained.

All re-flushing, re-disinfection, and re-sampling required shall be at the Contractor's expense.

If 4 consecutive test cycles fail to yield passing results, the Agency may require the removal of the failed system components and all associated cost are at the expense of the Contractor.

06605.5 Disinfection of 3" and up Short Length Tie-ins

Pipes, fittings, valves and all other components incorporated into connections to the Agency's existing system with an assembly length of 6m (20') or less shall be spray disinfected or swabbed with an NSF approved liquid chlorine solution in accordance with AWWA C651 and as specified herein. Upon connection to the main, the line shall be flushed and tested as directed by the Agency. Bacteriological Testing will require that new facilities be adequately isolated and require 1 sample. Failure to pass sampling will require a re-flush and resample. If the sample still fails, the new facilities will be disconnected and the process started over, until the new facilities pass the required tests. Costs for additional disinfection, sampling and testing shall be paid for by the Contractor. Alternate methods such as "pre-disinfection" prior to installation in accordance with AWWA C651 may be required at the discretion of the Agency Engineer and/or Inspector.

06605.6 Disinfection of Individual 1" and 2" water services

Individual one- and two-inch water service laterals, connected to potable water mains will be disinfected and tested as follows, there is no maximum length:

1. Service line will be swabbed with NSF approved chlorine.
2. Service line will be connected to corporation stop and flushed out.
3. Service line corporation stop will be left on, and new line will be sampled. Only one sample is required.
4. If the sample fails, the process will be started over.
5. Costs for additional disinfection, sampling and testing shall be paid for by the Contractor.

06605.7 Recycled Water Systems

Recycled Water installation testing shall utilize Section 06, 06600 (General), 06601 (Temporary Water Supply), 06602 (Fill and Soak), 06603 (Velocity Flush), 06604 (Hydrostatic Test)

06606 SAMPLES

06606.1 Bacteriological Sampling

After disinfection has been performed as detailed herein, the Agency Inspector will perform bacteriological sampling and testing of all new system installations. The testing methodology employed by the Agency. Testing requirements are as set forth in the California Domestic Water Quality and Monitoring Regulations and in accordance with current requirements for surface water testing.

The Agency Inspector will take samples in accordance with method A or B of AWWA C-

651-14. Sample method is at the sole discretion of the Agency Inspector. No flushing is allowed between samples. The days of the test shall be determined by the schedule submitted by the Contractor and during normal Agency operating hours on Monday - Thursday.

Sample locations shall be determined by the Contractor and based on the chlorination and disinfection plan and shall be taken through the length of the new pipeline(s) at locations not more than 365m (1,200') apart. In addition, samples shall be taken at all branches and dead ends. No More than 2,000' of total system length may be tested at any given cycle or as otherwise directed by the Agency Inspector.

All samples must pass the following tests:

1. Coliform Bacteria Test: No positive samples allowed.

2. Heterotrophic Plate Count (HPC) Test: No more than 500 colony-forming units allowed in any sample. The requirement for HPC testing may be waived at the sole discretion of the Agency.

Any alterations to already approved systems, I.E., lowering of lateral(s), fire hydrant elevation changes, etc. may be subject to additional bacteriological testing as directed.

SECTION 07: CONNECTIONS

07700 CONNECTING NEW PIPELINES TO EXISTING PIPELINES

No connection will be permitted without completed easement documentation filed and accepted by SCVWA (see Section 01105).

Updated Geotechnical and As-built Survey report information may be required prior to any connections. Any missing information will be the responsibility of the developer/contractor to provide at no additional cost to SCVWA (see Sections 03302.2.5 and 03303.10).

Upon successful completion of Bacteriological Testing, The Contractor shall schedule connections to existing pipelines within 10 working SCVWA days from the time of the first sample, or as otherwise required by the Agency. If the Contractor exceeds the (10) SCVWA working day timeframe to schedule connections to existing pipelines, the testing process will be required to start over.

Upon completion of connections to existing pipelines, the Agency will activate, and the contractor shall flush the newly installed pipeline(s) to prepare for bacteriological sample(s). It is the responsibility of the developer/contractor to provide sample stations at all required locations, and to produce satisfactory results. If a sample fails, the Agency will re-sample at the failed test location(s). If the re-sample does not produce satisfactory results, the newly installed

pipeline shall be isolated and disconnected from the existing pipeline(s) at the discretion of the Agency Engineer. Following the isolation and disconnection the new pipeline(s) shall then be subject to retesting per Section 06603 (Velocity Flush), Section 06605 (Disinfection), and Section 06606 (Samples) as specified herein at the Contractor's expense.

07701 CONNECTING TO EXISTING MAINS

Prior to a connection to existing mains, all required testing within Section 06 shall be performed and produce satisfactory results thereof. Agency authorization for connection to the existing system shall be given only on the basis of acceptable fill, soak, flushing, hydrostatic, disinfection and bacteriological test results.

07702 CONNECTIONS TO ASBESTOS CEMENT MAINS

1. Health Hazard: The Contractor is warned that asbestos is a known human carcinogen when inhaled and poses serious health risks. Asbestos fibers are easily inhaled and can result in chronic respiratory illness, cancer and other severe adverse health effects.

2. General: Asbestos materials may be encountered in the Work. The Contractor shall account for removal of all existing asbestos cement pipe in the total bid price shown on the bid schedule. All removed asbestos pipe becomes property of the Contractor and must be double wrapped in polyethylene certified as meeting RQ (Asbestos), Class 9, NA 2212, III. Removal of existing pipe shall extend to the nearest joint to prevent cutting of the pipe. Cutting of asbestos cement pipe is prohibited unless approved in writing by the Agency. Removal of asbestos pipe shall comply with the latest EPA regulations. If materials containing asbestos other than ACP are encountered, a contractor registered by CAL/OSHA and certified by the State Contractors Licensing Board for asbestos removal shall perform removal of existing asbestos material. Copies of the certification shall be submitted to the Engineer prior to the commencement of any asbestos removal activities. The Contractor or subcontractor shall comply with all State and Federal laws regarding handling and removal of asbestos materials. The Contractor shall be responsible for the proper identification, removal and disposal of all asbestos materials.

07702.1 Joining to existing Asbestos Cement Pipe

In the specific instance of making piping connections to existing asbestos cement pipe, the Contractor shall connect at the nearest joint. Cutting of asbestos cement pipe is prohibited unless otherwise approved in writing by the Agency.

07703.2 Handling Asbestos Cement Pipe

The Contractor shall perform all handling of asbestos cement pipe in strict conformance with all applicable CAL/OSHA, CAL/EPA, US/EPA and other governing and environmental health and safety agency requirements.

07703 CONNECTIONS TO CEMENT MORTAR LIKED AND COATED MAINS

Where practical, connections for water services shall be made with high pressure coupling welded to the pipe in the shop at time of pipe fabrication. After coupling is welded to the pipe, it shall be covered by mortar coating, so no bare metal is left exposed. Where it is necessary to make the connection in the field, additional care shall be exercised to minimize the damage to mortar linings. Refer to Standard Drawing WP-141.

07704 CONNECTIONS TO DUCTILE IRON MAINS

All connections for water services shall be made with double strapped malleable iron service saddles positioned as shown in Standard Drawing WP-109. Saddles shall have female iron pipe thread of the same standard size as the service tubing. Tapping saddles shall be spaced at a minimum distance of two times the diameter of the pipe to be taped for water service(s) or spaced in such a way to allow proper installation of the saddle, whichever is greater. Tapping saddle spacing may be less per the approval of the Agency Engineer.

07705 CONNECTIONS TO PVC MAINS

The use of saddles to make taps is required for all sizes and classes of PVC pipe. Service connections up to 2-inch size may be made using a service saddle. The saddle chosen shall be designed and sized for the PVC main and shall provide full support around the circumference of the pipe. For 12” PVC mains or smaller the tap should not be located closer than 36 inches from the back of the bell, the spigot insertion line, or joint-restraint hardware. For 14” PVC mains or larger, the tap should not be located closer than 42 inches from the back of the bell, the spigot insertion line, or joint-restraint hardware. For all PVC mains, multiple saddle taps should be staggered and kept at least 36” apart lengthwise.

Shell cutters shall be used when tapping PVC mains, no exceptions, and proper care shall be taken to not damage the PVC main.

07706 ABANDODNING WATER SERVICE LINE ON MAINS

07706.1 Abandoning One and Two-inch Service lines

For abandoning a water service all surface fittings, meter, meter box shall be removed.
The service line and corporation stop shall be removed, and the service saddle plugged with a brass plug. If there is no corporation stop on the service, the adapter shall be removed, and a brass plug installed in the service saddle. If no saddle is on the service, then a service saddle must be installed, and a plug must be installed.

07706.2 Abandoning Service lines larger than three Inches

For abandoning a water service all surface fittings, meter, vault shall be removed.
The service line and valve shall be removed, and a steel blind flange shall be installed at the tee.

07707 PRECAST VAULTS

Precast concrete vaults and covers shall be manufactured in a plant especially designed for that purpose and shall conform to the size, shape and dimensions indicated on the detailed plans.

Design loads are those anticipated for use within a public parkway and/or traffic area, AASHTO H-20, live loads of 8000 lbs. with a 30% impact factor. The minimum compressive concrete strength shall be 4000 psi at 28 days.

Unless noted otherwise, vault access hatches and frames shall be fabricated in accordance with the project drawings and as approved by the Agency. Hatch lids shall be adequately designed for the vault and shall be spring loaded to assist opening. The hatch lid shall be aluminum, or a material approved by the Agency.

Pre-cast concrete vaults shall be furnished in one or more sections without a base. The bottom of the structure shall be placed on compacted, crushed rock sub-base, graded level and to the proper elevation as shown in the Standard Drawings or on the plans.

Openings or “knockouts” in precast concrete vaults shall be located as shown on the drawings and shall be filled with concrete grout or mechanical seals such as link seals for pipes larger than 3-inches outside diameter. Provide sleeves and water stops.

All joints and wall penetrations between precast concrete vault sections shall be made watertight. The sealing compound shall be installed according to the manufacturer’s recommendations to provide a watertight joint.

END OF STANDARD SPECIFICATIONS

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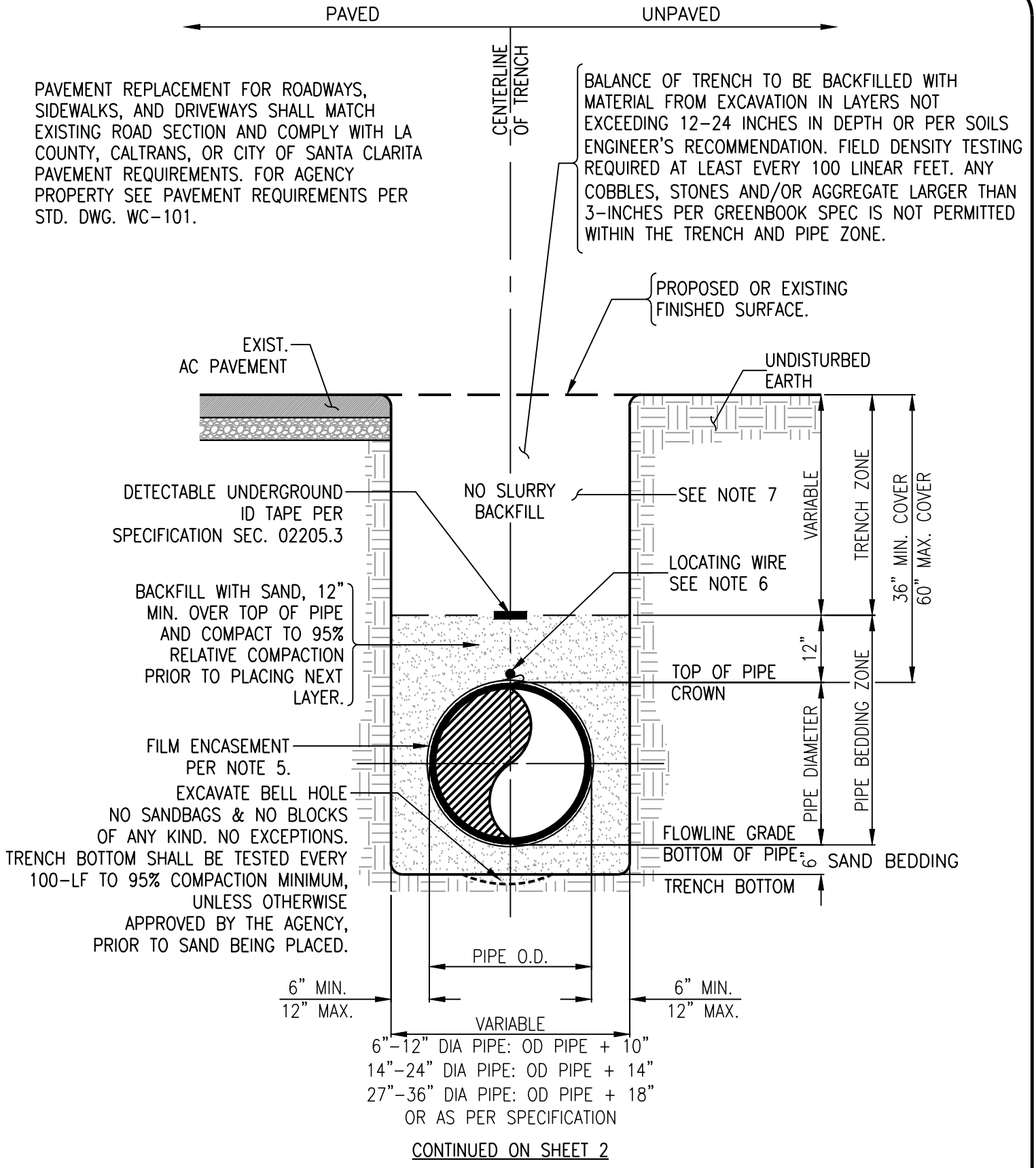

CONTINUED ON SHEET 2

WATER SERVICE AND PIPELINE TRENCH DETAIL

SCV WATER

SANTA CLARITA VALLEY WATER AGENCY
ENGINEERING SERVICES SECTION

APPROVED BY:

COURTNEY MAEL, P.E. 84647
CHIEF ENGINEER

7/20/2022
DATE

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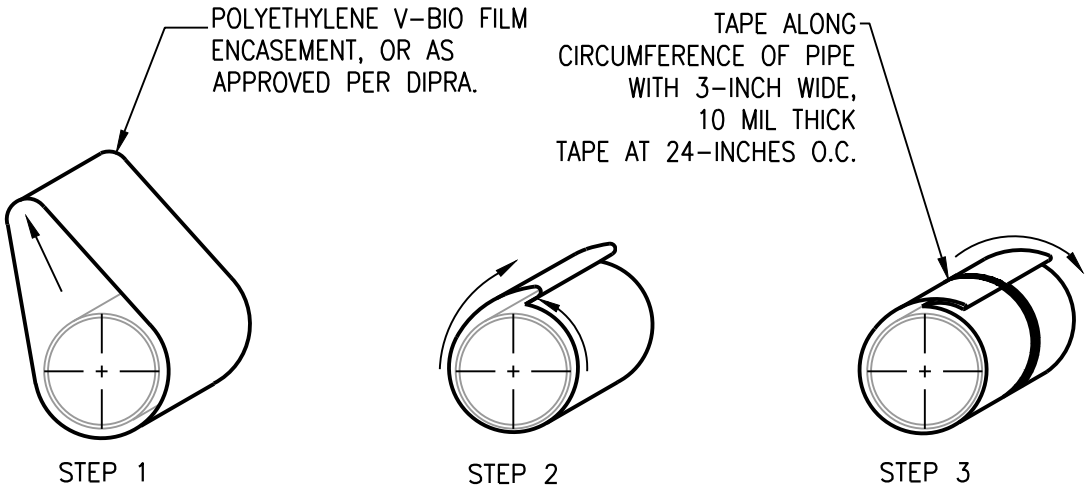
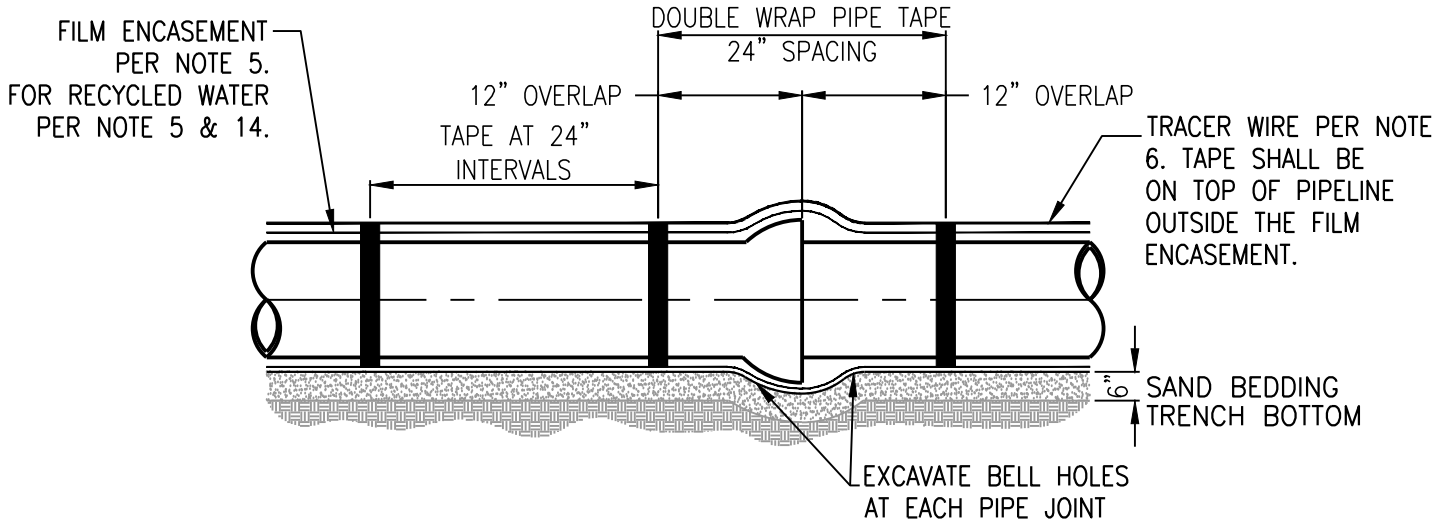
WP-101

REV. 1.0



PIPE WRAPPING (METHOD A) PER AWWA C105-18 SECTION 4.4.3.2



CONTINUED ON SHEET 3

WATER SERVICE AND PIPELINE TRENCH DETAIL

SCV WATER

SANTA CLARITA VALLEY WATER AGENCY
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NOTES:

1. REFER TO SPECIFICATIONS SECTION 02200.
2. ALL PAVEMENT SHALL BE CUT PER LATEST GREENBOOK EDITION OR PER LOCAL GOVERNING AGENCY.
3. IMPORTED BACKFILL MATERIAL TO BE INSTALLED AS DIRECTED IN THE FIELD BY THE AGENCY.
4. ALL MATERIALS SUPPLIED BY SCV WATER OR OTHERS SHALL MEET OR EXCEED AWWA SPECIFICATIONS.
5. ENCASE ALL METALLIC PIPE, APPURTENANCES, FITTINGS AND VALVES WITH ONE LAYER OF V-BIO 8-MIL POLYETHYLENE FILM. CARE SHALL BE TAKEN TO PREVENT FOREIGN MATERIAL, SOIL, OR BEDDING MATERIAL FROM BECOMING TRAPPED INSIDE THE ENCASEMENT FILM. SOME SLACK (SNUG NOT TIGHT) IS ALLOWABLE FOR PROPER INSTALLATION OF FILM AND TO KEEP THE FILM ENCASEMENT FREE OF TEARS. IF FILM TEARS, REPAIR PER SPEC. SEC. 02205.1.
6. LOCATING WIRE MUST BE BLUE HMWPE 12 GAUGE AND SHALL BE INSTALLED ON ALL PIPE. ATTACH WIRE WITH 3" WIDE TAPE-10 MIL AND TAPED AT 24" INTERVALS. FOR RECYCLED WATER LOCATING WIRE SHALL BE PURPLE HMWPE 12 GAUGE.
7. COMPACT BACKFILL TO 95% RELATIVE COMPACTION WHEN PIPE IS IN PAVED AREAS AND IN UNPAVED AREAS.
8. PROVIDE HAND EXCAVATABLE ONE SACK SLURRY CEMENT PER GREENBOOK STANDARDS (LATEST EDITION) FOR ANY PIPE WITH 30" OR LESS COVER. BACKFILL WITH ONE SACK SLURRY FROM INVERT TO SUBGRADE. SAND BEDDING TO 12" OVER CROWN OF PIPE. SLURRY REQUIREMENTS MAY BE CHANGED AT DISCRETION OF AGENCY.
9. ALL PIPELINES SHALL BE INSTALLED TO MEET TITLE 22 STANDARDS. ALL OTHER UTILITY CROSSINGS SHALL MAINTAIN A MINIMUM 12" VERTICAL CLEARANCE AND ALL OTHER PARALLEL UTILITY INSTALLATIONS SHALL MAINTAIN A MINIMUM 36" HORIZONTAL CLEARANCE.
10. WATER MAIN DEPTH SHALL BE 55" MAXIMUM TO BOTTOM OF SAND BEDDING AND 36" MINIMUM TO CROWN OF PIPE UNLESS OTHERWISE DIRECTED BY THE AGENCY.
11. COMPACTION REPORTS MUST BE PROVIDED DAILY TO AGENCY'S INSPECTOR OR AGENCY REPRESENTATIVE.
12. SAND NEEDS TO MEET SAND EQUIVALENCY 30.
13. ALL RUBBER MATERIAL IN CONTACT WITH POTABLE OR RECYCLED WATER SHALL BE EPDM.
14. FOR RECYCLED WATER ENCASE WITH 8-MIL PURPLE POLYETHYLENE FILM, LABELED "RECYCLED WATER DO NOT DRINK". ENCASEMENT FILM SHALL BE THE OUTER FILM LAYER OVER THE V-BIO FILM LAYER.
15. TO VERIFY DDW REQUIREMENTS ARE BEING MET, AT EVERY NON-POTABLE WET UTILITY CROSSING, A SMALL POTHOLE SHALL BE EXCAVATED TO A MINIMUM DEPTH OF 12-INCHES UNDER THE POTABLE WATER MAIN OR SERVICE AFTER IT IS INSTALLED TO ALLOW FOR A PICTURE TO BE TAKEN. THE PICTURE SHALL SHOW THE INSTALLED PIPE, THE TAPE MEASURE IDENTIFYING THE MEASUREMENT AND A SIGN (WHITE BOARD, PAPER, ETC.) IDENTIFYING THE DATE, PROJECT, PIPELINE ID/APPURTENANCE, STREET NAME, STATION NUMBER AND WET UTILITY CROSSING ID.
16. ANY NEWLY INSTALLED POTABLE WATER MAIN WILL NEED TO BE INSTALLED AT A 45° DEGREE ANGLE OR GREATER WHEN CROSSING A "WET NON-POTABLE UTILITY."
17. DETECTABLE WARNING TAPE SHALL BE INSTALLED ON ALL UNDERGROUND AGENCY FACILITIES, INCLUDING BUT NOT LIMITED TO MAINS, LATERALS, SERVICES, ETC. BLUE FOR POTABLE, PURPLE FOR RECYCLED, RED FOR AGENCY POWER CONDUIT, GREEN FOR AGENCY SD AND SEWER, SEE SPECIFICATION SECTION 02205.3.
18. MINIMUM PIPE SIZE FOR WATER MAINS IS 8" FOR POTABLE WATER SYSTEMS AND 6" FOR RECYCLED WATER SYSTEMS. SEE SPECIFICATIONS SECTION 02200.4.
19. NO WATER PIPELINE SHALL BE INSTALLED PARALLEL UNDER CURBS, GUTTERS AND PARKWAYS.

WATER SERVICE AND PIPELINE TRENCH DETAIL

SCV WATER

SANTA CLARITA VALLEY WATER AGENCY
ENGINEERING SERVICES SECTION

APPROVED BY:

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CHIEF ENGINEER

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WP-101

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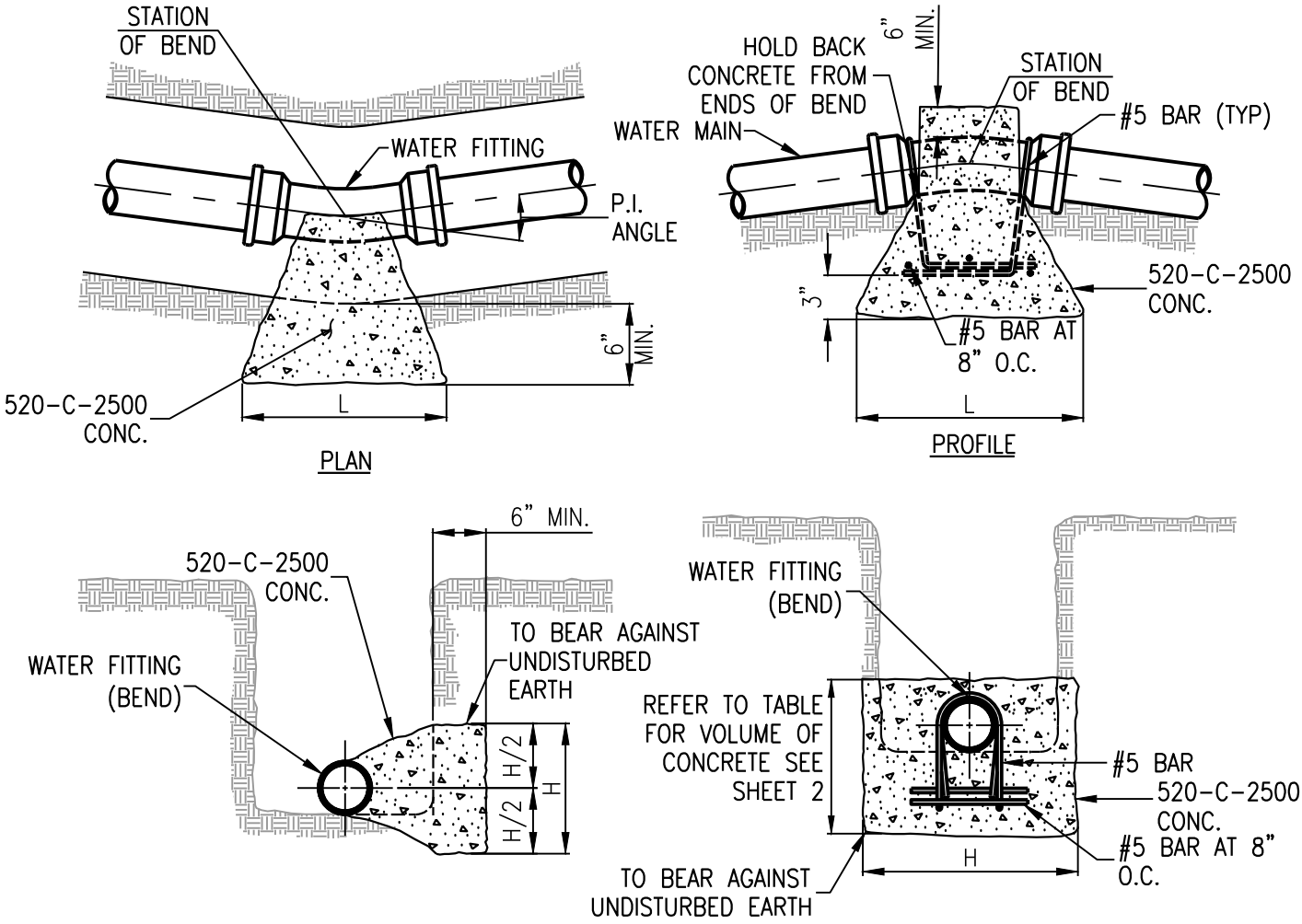

NOTES:

1. CONCRETE PLACED AGAINST THE PIPE FITTING SHALL NOT EXTEND BEYOND THE JOINTS.
2. THRUST BLOCK REQUIREMENTS TABLE IS DESIGNED FOR A TEST WATER PRESSURE OF 200 PSI AND A SOIL BEARING PRESSURE OF 2000 PSF.
3. CONCRETE THRUST BLOCKS SHALL BE INSTALLED TO THE DIMENSIONS AND CONFIGURATIONS SHOWN HEREON.
4. CONCRETE THRUST BLOCKS SHALL BE PLACED SOLIDLY AGAINST FIRM UNDISTURBED NATIVE SOIL.
5. THE RATIO OF THRUST BLOCK HEIGHT TO LENGTH SHALL BE AT A MINIMUM 1:2 AND AT A MAXIMUM 1:1, WITH PREFERENCE TOWARD 1:1.
6. ALL THRUST BLOCKS SHALL EXTEND A MINIMUM OF 24" OUTWARD FROM THE PIPE. EXCEPTIONS FOR SMALL SIZED THRUST BLOCKS MAY BE MADE AT AGENCY ENGINEER'S DISCRETION.
7. IN LOCATIONS WHERE THE WATER TABLE IS HIGHER THAN THE THRUST BLOCK, SPECIAL DESIGN IS REQUIRED.
8. CONCRETE SHALL BE 520-C-2500, AND SHALL HAVE A DESIGN STRENGTH OF 2,500 PSI UNLESS OTHERWISE DIRECTED BY AGENCY'S ENGINEER.
9. VALUES LISTED BELOW WERE CALCULATED WITH A F.S. OF 1 AND ASSUMING PIPE JOINTS ARE RESTRAINED. IF PIPE JOINTS ARE NOT RESTRAINED THE F.S. VALUE SHALL BE INCREASED PER AGENCY ENGINEER'S RECOMMENDATIONS.

CONTINUED ON SHEET 2

THRUST BLOCKS - 200 PSI MAIN PRESS MAX (BASED ON 2000 LB/SF SOIL)

SCV WATER

SANTA CLARITA VALLEY WATER AGENCY
ENGINEERING SERVICES SECTION

APPROVED BY:

COURTNEY MAEL, P.E. 84647
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WP-102

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THRUST BLOCKS TABLES FOR MINIMUM REQUIRED CONCRETED AND THRUST BLOCK DIMENSIONS

	HORIZONTAL BENDS (REQUIRED S.F. BEARING AREA)															VERTICAL BENDS (REQUIRED C.Y.)			
	11.25°			22.5°			45°			90°			TEES/PLUG						
PIPE DIA. (IN.)	SQ. FT.	L	H	SQ. FT.	L	H	SQ. FT.	L	H	SQ. FT.	L	H	SQ. FT.	L	H	11.25°	22.5°	45°	90°
4	0.2	0.5	0.5	0.5	0.7	0.7	1.0	1.0	1.0	1.8	1.3	1.3	1.3	1.2	1.2	0.1	0.2	0.5	1.0
6	0.6	0.8	0.8	1.1	1.1	1.1	2.2	1.5	1.5	4.0	2.0	2.0	2.8	1.7	1.7	0.3	0.5	1.1	2.2
8	1.0	1.0	1.0	2.0	1.5	1.5	3.8	1.9	1.9	7.1	2.7	2.7	5.0	2.3	2.3	0.5	1.0	1.9	3.8
10	1.5	1.3	1.3	3.1	1.8	1.8	6.0	2.5	2.5	11.1	3.4	3.4	7.9	2.9	2.9	0.8	1.5	3.0	6.0
12	2.2	1.5	1.5	4.4	2.2	2.2	8.7	2.9	2.9	16.0	4.0	4.0	11.3	3.4	3.4	1.1	2.2	4.3	8.6
14	3.0	1.8	1.8	6.0	2.5	2.5	11.8	3.4	3.4	21.8	4.7	4.7	15.4	4.0	4.0	1.5	3.0	5.8	11.6
16	3.9	2.0	2.0	7.8	2.8	2.8	15.4	3.9	3.9	28.4	5.3	5.3	20.1	4.5	4.5	1.9	3.9	7.6	15.2
18	5.0	2.3	2.3	9.9	3.2	3.2	19.5	4.4	4.4	36.0	6.0	6.0	25.4	5.1	5.1	2.5	4.9	9.6	19.2
24	8.9	3.0	3.0	17.7	4.2	4.2	34.6	5.9	5.9	64.0	8.0	8.0	45.2	6.8	6.8	4.4	8.7	17.1	34.2
30	13.9	3.8	3.8	27.6	5.3	5.3	54.1	7.4	7.4	100	10.0	10.0	70.7	8.5	8.5	6.8	13.6	26.7	53.4

THRUST BLOCKS - 200 PSI MAIN PRESS MAX (BASED ON 2000 LB/SF SOIL)

SCV WATER

SANTA CLARITA VALLEY WATER AGENCY
ENGINEERING SERVICES SECTION

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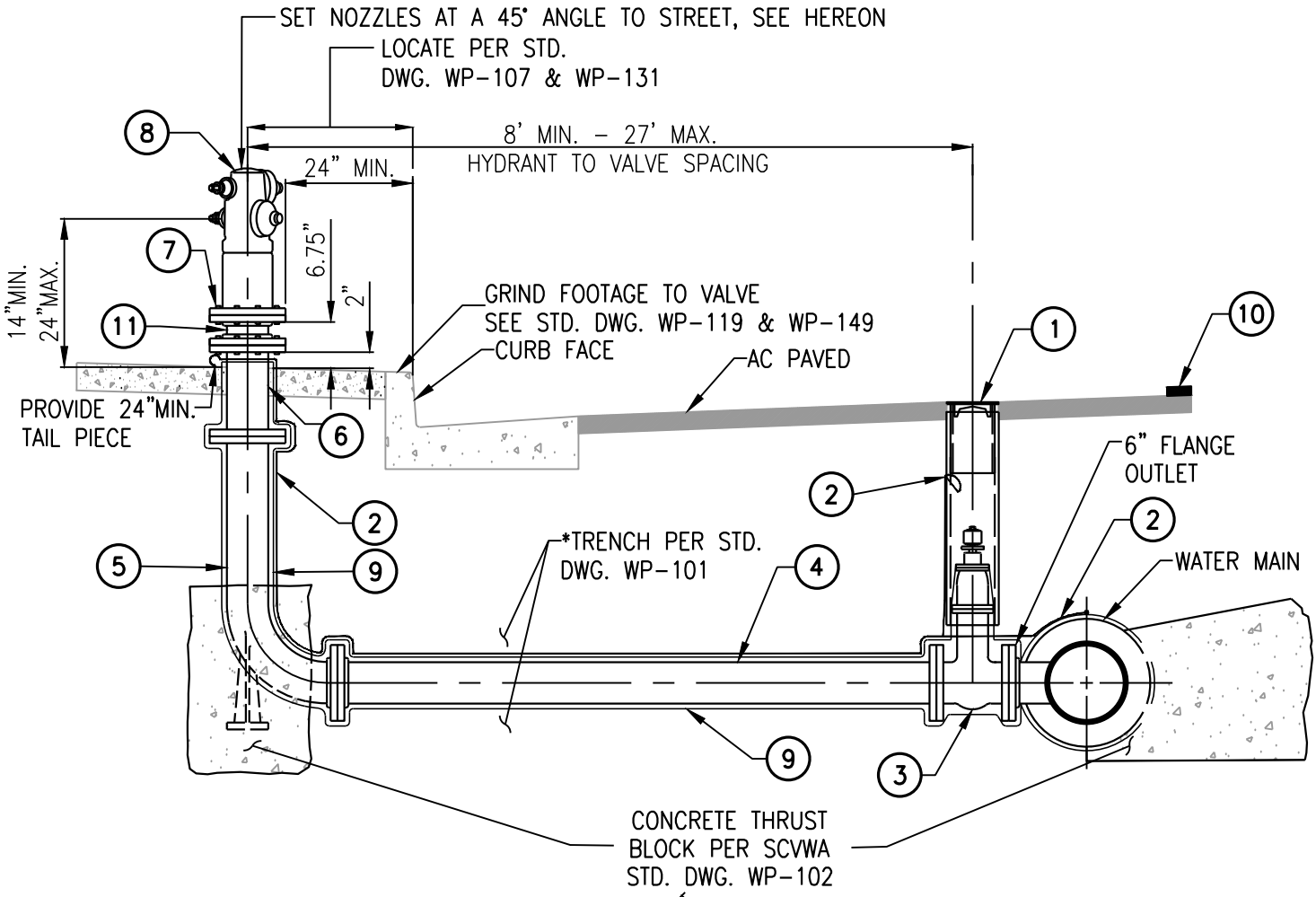

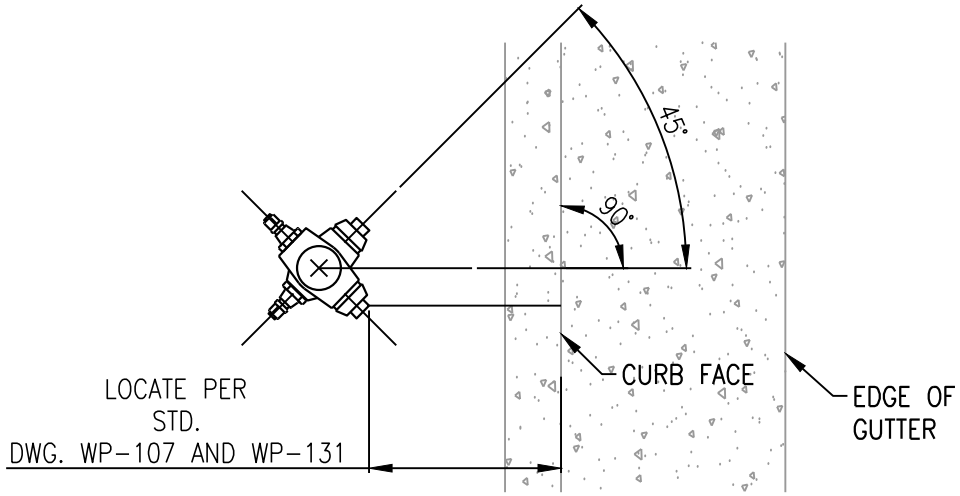

TOP VIEW

LOCATE HYDRANT AS SHOWN
N.T.S

*ALL FIRE HYDRANT ASSEMBLIES SHALL BE FULLY RESTRAINED.

CONTINUED ON SHEET 2

FIRE HYDRANT ASSEMBLY (FULLY RESTRAINED)

SCV WATER

SANTA CLARITA VALLEY WATER AGENCY
ENGINEERING SERVICES SECTION

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WP-103

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ITEM	MATERIALS
1	VALVE LID SLIP CAN PER STD. DWG. WP-108A/B/C. VALVES SHALL BE 8' MIN.-27' MAX. FROM C.L. HYDRANT. INSTALL TWO VALVES IF DISTANCE FROM MAIN IS GREATER THAN 25'.
2	BLUE LOCATING WIRE, 12 GAUGE HMWPE SOLID STRAND WITH 3M GREASE TUBE NUT (DBR/Y6) OR EQUAL. TAPE WIRE AT 24" INTERVALS.
3	6" FLANGED OR MECHANICAL JOINT GATE VALVE (RESILIENT WEDGE) WITH OPERATING NUT.
4	6" DIP CLASS 350 RESTRAINED MECHANICAL JOINT.
5	6" DIP FIRE HYDRANT BURY-FLANGED OR CUT TO FIT PIPE WITH RESTRAINED FITTINGS.
6	6", 8-HOLE FL HYDRANT BURY EXTENSION, LENGTH TO BE FIELD VERIFIED BY CONTRACTOR.
7	8 HOLE FLANGES SHALL HAVE TRAFFIC BOLTS 3/4"x3-1/4", WITH HEADS ON TOP.
8	6"x4"x2-1/2" FIRE HYDRANT, CLOW 850 OR JONES J-4040BRE (EPDM) DI 8 HOLE. COLOR SHALL BE "ANSI/OSHA SAFETY YELLOW".
9	ENCASE FERROUS PIPE AND FITTINGS WITH ONE LAYER OF V-BIO FILM OR DIPRA APPROVED.
10	BLUE REFLECTOR, SEE NOTE 10 HEREON.
11	PROVIDE 8-HOLE JONES 6000 BREAK CHECK VALVE OR APPROVED EQUAL.

NOTES:

1. ALL MATERIALS SUPPLIED BY SCVWA OR OTHERS SHALL MEET OR EXCEED AWWA SPECIFICATIONS.
2. FIRE HYDRANT SHALL BE COATED "ANSI/OSHA SAFETY YELLOW".
3. FIRE HYDRANT SHALL BE AFFIXED TO TRAFFIC BOLTS (BOLT HEAD MUST BE ON TOP).
4. PROVIDE GUARD POSTS PER STD. DWG. WP-106A/B OR AS REQUIRED BY THE AGENCY INSPECTOR.
5. DOUBLE OUTLET HYDRANTS SHALL BE INSTALLED WITH OUTLETS FACING CURB AT A 45 DEGREE ANGLE TO THE CURB LINE, SEE SHEET 1.
6. PROVIDE A THREE FOOT UNOBSTRUCTED CLEARANCE ON ALL SIDES OF FIRE HYDRANT.
7. BITUMASTIC PROTECTIVE COATING OR APPROVED EQUAL SHALL BE APPLIED TO ALL FITTINGS, NUTS, AND BOLTS.
8. ALL RUBBER/GASKET MATERIAL SHALL BE E.P.D.M INCLUDING NON-ASBESTOS RING GASKETS FOR FLANGE FITTINGS.
9. ALL AC PAVEMENT, CURB, GUTTER AND SIDEWALK SHALL BE REPLACED PER CITY, COUNTY OR CALTRANS STANDARDS/REQUIREMENTS.
10. THE CONTRACTOR SHALL INSTALL REFLECTORIZED, RAISED PAVEMENT MARKERS (STIMSONITE HYDRANT SPOTTER), ALSO CALLED "BLUE DOTS" AND A TWO PART EPOXY ADHESIVE SHALL BE USED TO INSTALL THE MARKERS. ONE MARKER SHALL BE INSTALLED OPPOSITE EACH FIRE HYDRANT, APPROXIMATELY 6 INCHES OFFSET FROM STREET CENTERLINE ON THE HYDRANT SIDE OF THE STREET.
11. DETECTABLE UNDERGROUND WARNING TAPE SHALL BE INSTALLED AT ALL FIRE HYDRANT RUNS. TRENCH SHALL BE PER STD. DWG. NO. WP-101.
12. ALL HYDRANT BURY'S, INCLUDING HYDRANT BURY EXTENSIONS SHALL BE ASPHALTIC SEAL COATED AND DOUBLE CEMENT LINED.
13. ALL PIPE AND FITTINGS SHALL BE FULLY RESTRAINED.

FIRE HYDRANT ASSEMBLY (FULLY RESTRAINED)

SCV WATER

SANTA CLARITA VALLEY WATER AGENCY
ENGINEERING SERVICES SECTION

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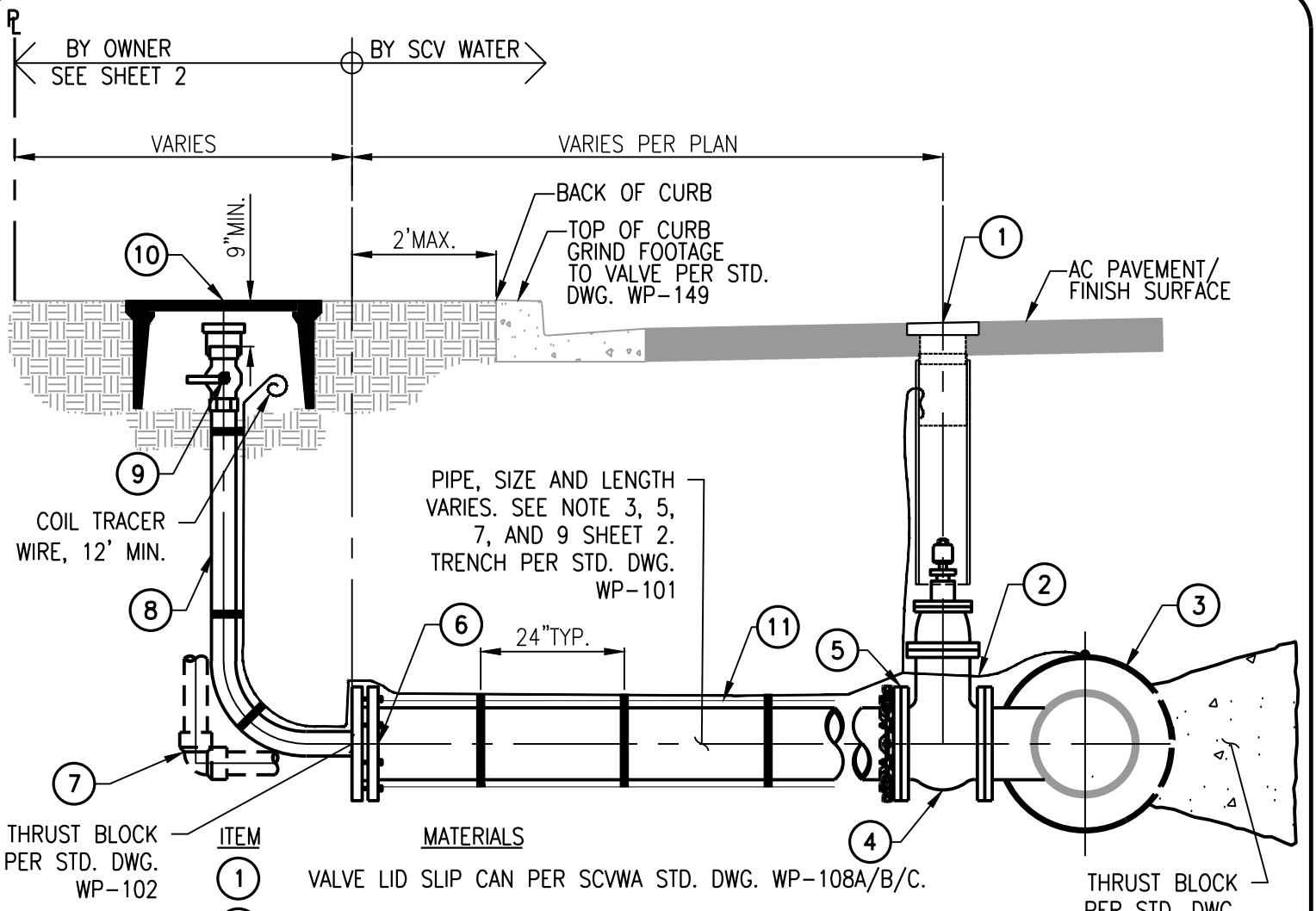

ITEM	MATERIALS
1	VALVE LID SLIP CAN PER SCVWA STD. DWG. WP-108A/B/C.
2	BLUE LOCATING WIRE, 12 GAUGE HMWPE SOLID STRAND, BLUE, WITH 3M GREASE TUBE NUT (DBR/Y6) OR EQUAL. TAPE WIRE AT 24" INTERVALS.
3	TAPPING SLEEVE OR TEE PER PLAN, IF EXISITNG MAIN SEE WP-128 AND/OR 129.
4	RESILIENTE WEDGE GATE (EDPM) VALVE, SEE NOTE 1 & 2 ON SHEET 2.
5	FLANGE X MJ, RESTRAINED ADAPTER W/TEST PLATE, SIZE PER PLAN, SEE NOTE 12.
6	MECHANICAL JOINT END CAP, RESTRAINED WITH 2" TAP.
7	2"x 90° COMPxCOMP CTS-PJ, IF NECESSARY, REQUIRES AGENCY APPROVAL.
8	2" MUNICIPEX WITH INSERTS.
9	2" BALL VALVE WITH HANDLE/MIPT OUTLET AND 2" BRASS CAP.
10	METER BOX AND LID PER STANDARD DRAWING NO. WP-125A.
11	POLYETHYLENE V-BIO FILM ENCASEMENT, OR AS APPROVED PER DIPRA. ENCASE PER SCVWA STD. DWG. NO. WP-101.

CONTINUED ON SHEET 2

FIRE SERVICE ASSEMBLY (FULLY RESTRAINED)

SCV WATER

SANTA CLARITA VALLEY WATER AGENCY
ENGINEERING SERVICES SECTION

APPROVED BY:

COURTNEY MAEL, P.E. 84647
CHIEF ENGINEER

7/20/2022
DATE

STD. DWG.
WP-104

REV. 1.0

NOTES:

1. IF FIRE SERVICE PIPE DIAMETER IS 10" OR LESS USE A GATE VALVE. IF THE FIRE SERVICE PIPE DIAMETER IS 12" OR GREATER USE A BUTTERFLY VALVE, NO EXCEPTIONS.
2. FIRE SERVICE SHALL BE MINIMUM OF SIZE 6", FOR A 4" SERVICE USE A 6" GATE VALVE AND 6"X4" REDUCER.
3. RESTRAIN ALL JOINTS ALONG FIRE SERVICE LATERAL LINE.
4. SIZE OF FIRE SERVICE SHALL NOT BE GREATER THAN THE SIZE OF THE MAIN.
5. ENCASE WITH ONE LAYER OF POLYETHYLENE V-BIO FILM, AS APPROVED BY DIPRA. TAPE FILM WITH 3" WIDE-10 MIL TAPE AT 24" INTERVALS SEE SCVWA STD. DWG. NO WP-101.
6. FIRE LATERAL LINE TO BE PRESSURE TESTED AND DISINFECTED PER SCVWA STANDARDS AND APPLICABLE AWWA STANDARDS PRIOR TO THE INSTALLATION OF THE BACKFLOW ASSEMBLY.
7. IN AREAS WHERE THERE IS NO EDGE OF PAVEMENT OR CURB, FIRE SERVICE SHALL END AT EASEMENT LINE OR PROPERTY LINE. NO FIRE SERVICE SHALL BE INSTALLED IN PRIVATE PROPERTY UNLESS OTHERWISE APPROVED BY THE AGENCY OR AN EASEMENT HAS BEEN PROVIDED TO SCVWA AND HAS BEEN RECORDED PRIOR TO INSTALLATION. SURVEY WILL BE REQUIRED PRIOR TO INSTALLATION TO VERIFY EASEMENT AND/OR PUBLIC RIGHT OF WAY PRIOR TO INSTALLATION.
8. ALL BRASS MATERIAL USED MUST BE NSF APPROVED AND MUST BE NO LEAD (NL).
9. PIPE MATERIAL SHALL BE DIP CLASS 350 AT A MINIMUM.
10. ALL RUBBER MATERIAL SHALL BE E.P.D.M AND FLANGE GASKETS SHALL BE RING 1/8-INCH THICK NON-ASBESTOS AND E.P.D.M.
11. TRENCH SHALL BE PER STD. DWG. NO. WP-101.
12. ADAPTERS SHALL BE USED ONLY WHEN NECESSARY AND SHALL BE APPROVED BY AGENCY.

CONTINUED ON SHEET 3

FIRE SERVICE ASSEMBLY (FULLY RESTRAINED)

SCV WATER

SANTA CLARITA VALLEY WATER AGENCY
ENGINEERING SERVICES SECTION

APPROVED BY:

COURTNEY MAEL, P.E. 84647
CHIEF ENGINEER

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WP-104

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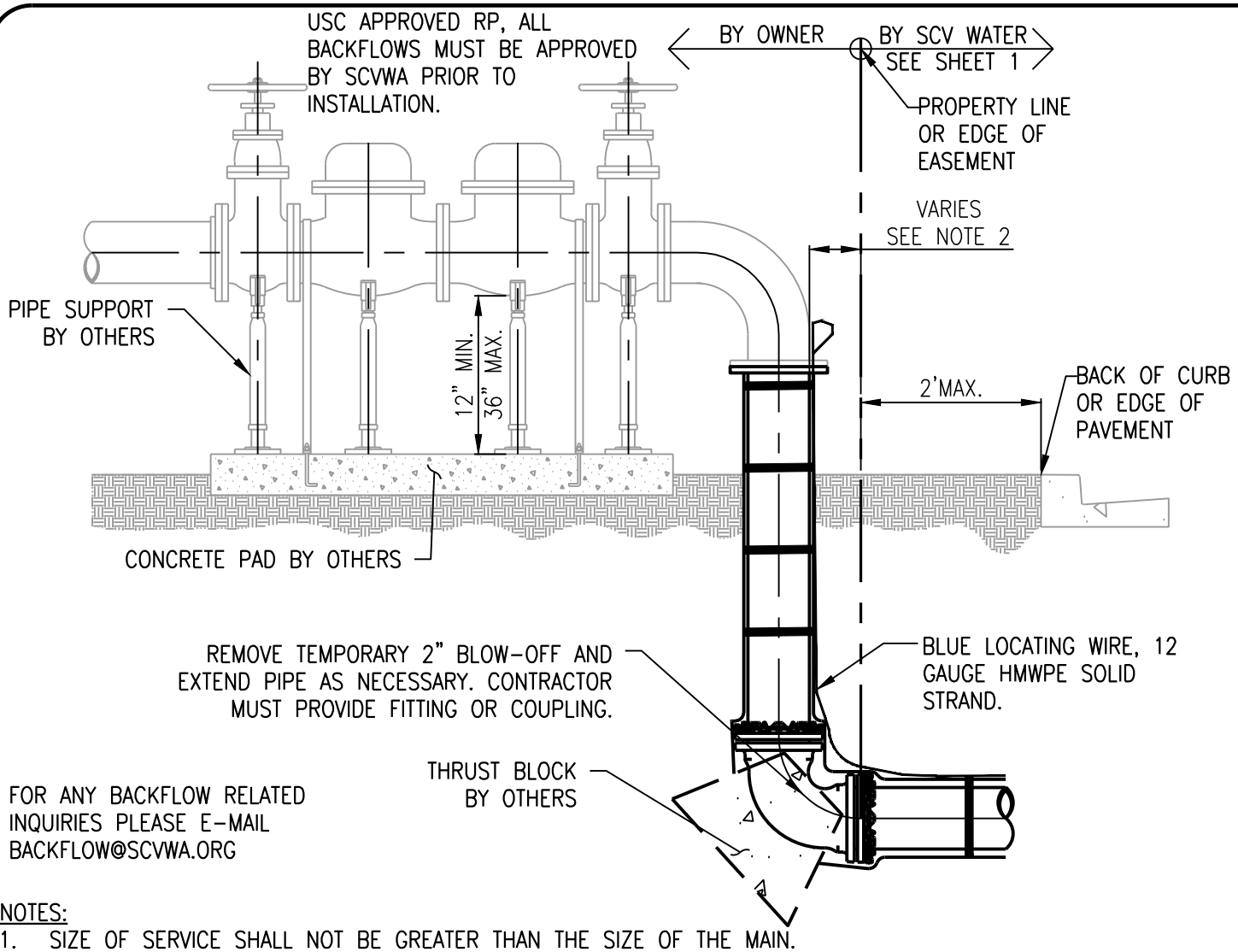


NOTES:

1. SIZE OF SERVICE SHALL NOT BE GREATER THAN THE SIZE OF THE MAIN.
2. LOCATION, TYPE, AND INSTALLATION OF BACKFLOW ASSEMBLY SHALL BE APPROVED BY SCVWA INSPECTOR AND MUST BE FIELD VERIFIED PRIOR TO INSTALLING AND SHALL BE AS CLOSE AS PRACTICAL TO THE POINT OF CONNECTION, PER TITLE 17 SS7603, IF TITLE 17 CANNOT BE MET THE FIRE LINE WILL NEED TO BE ENCASED WITH 2-SACK CEMENT SLURRY, 1-FOOT AROUND PIPE FROM BACK OF CURB/RIGHT OF WAY TO BACKFLOW
3. ALL ASSEMBLIES MUST BE USC AND STATE WATER RESOURCE CONTROL BOARD (SWRCB) APPROVED.
4. A REDUCED PRESSURE PRINCIPLE BACKFLOW ASSEMBLY WILL BE REQUIRED IF EITHER CONDITION IN THE SCVWA APPLICATION FOR FIRE SERVICE SECTIONS (B) AND (C) IS APPLICABLE OR IF REQUIRED BY THE SCVWA INSPECTOR.
5. BACKFLOW ASSEMBLY MUST BE TESTED BY AN APPROVED L.A. COUNTY BACKFLOW TESTER PRIOR TO START OF SERVICE, USING AGENCIES BACKFLOW SUBMISSION PROGRAM.
6. INSTALL TRACER WIRE ALONG THE SERVICE LATERAL PER SCVWA STANDARD SPECS. EXTEND THE TRACER WIRE TO THE BACKFLOW ASSEMBLY.
7. ENCASE WITH ONE LAYER OF V-BIO 8-MIL POLYETHYLENE FILM, AS APPROVED BY DIPRA. TAPE FILM WITH 3" WIDE 10-MIL TAPE AT 24" INTERVALS SEE SCVWA STD. DWG. NO WP-101.
8. LATERAL LINE TO BE PRESSURE TESTED AND DISINFECTED PER SCVWA STANDARDS AND APPLICABLE AWWA STANDARDS PRIOR TO THE INSTALLATION OF THE BACKFLOW ASSEMBLY.
9. PROVIDE A MINIMUM CLEARANCE OF 12" ALL AROUND THE RP BACKFLOW.
10. ALL SPLICED CONNECTIONS SHALL BE MADE USING A WIRE NUT, GREASE CAP, 3M (DBR/Y6) OR EQUAL.
11. RP BACKFLOWS SHALL MEET OR EXCEED SCVWA STANDARDS AND SHALL BE INSTALLED AND MAINTAINED BY THE CUSTOMER/OWNER.

FIRE SERVICE ASSEMBLY (FULLY RESTRAINED)

SCV WATER

SANTA CLARITA VALLEY WATER AGENCY
ENGINEERING SERVICES SECTION

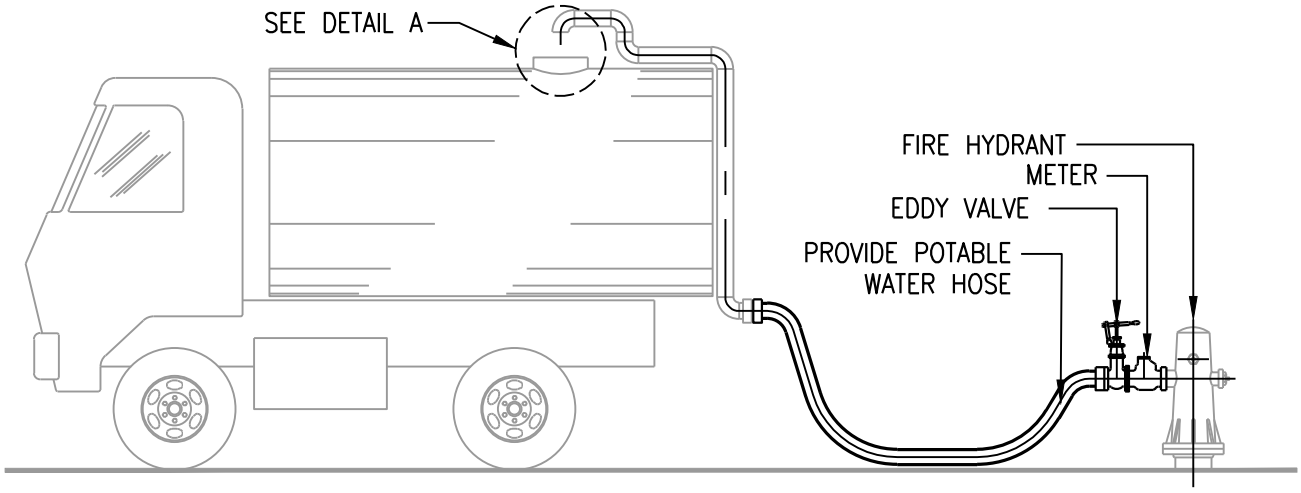
APPROVED BY:

COURTNEY MAEL, P.E. 84647
CHIEF ENGINEER

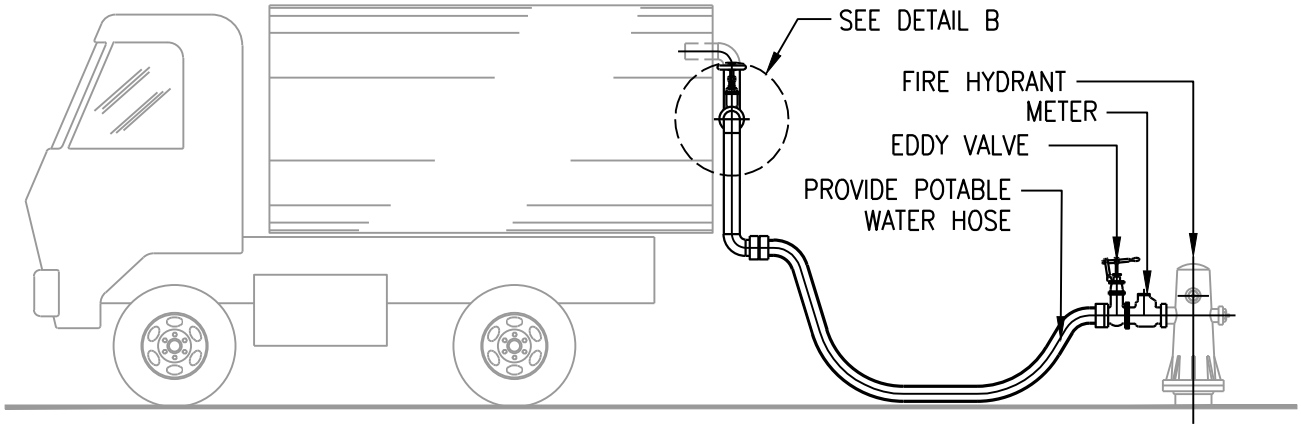
7/20/2022
DATE

STD. DWG.
WP-104

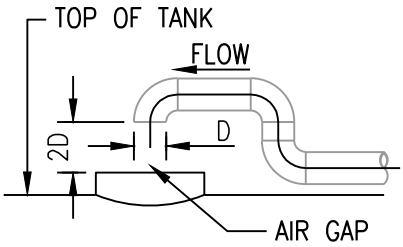
REV. 1.0



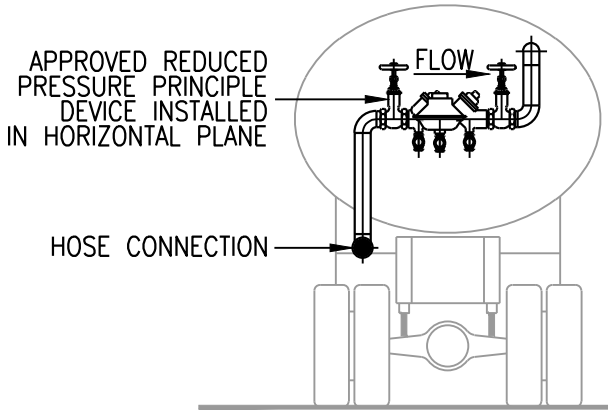
AIR-GAP SEPARATION METHOD



APPROVED REDUCED PRESSURE PRINCIPLE DEVICE METHOD



DETAIL A



DETAIL B

NOTES:

1. BACKFLOW MUST HAVE CURRENT TEST RESULTS.
2. CONNECTIONS LONGER THAN 24 HOURS, REQUIRE A TEE CONNECTION UNDER THE FIRE HYDRANT WITH AN RP BACKFLOW AND ISOLATION VALVE. CONSTRUCTION METERS MUST BE REMOVED AT THE END OF EACH DAY AND MAY NOT BE LEFT OVER NIGHT OR OVER THE WEEKEND. PER LOS ANGELES COUNTY FIRE DEPARTMENT (LACFD).
3. FOR A CONSTRUCTION METER REQUEST, CALL THE SCVWA ROCKEFELLER OFFICE AT (661) 298-0828 OR MAY BE PICKED UP IN PERSON DURING NORMAL BUSINESS HOURS AT 24631 AVE. ROCKEFELLER, VALENCIA, CA 91355.
4. NO CONNECTIONS SHALL BE MADE TO THE 4" FIRE HYDRANT OUTLET PER LACFD.
5. FOR TEMPORARY CONNECTIONS 4' OR LARGER PLEASE CONTACT SCVWA ENGINEERING AT 661-297-1600.
6. FIRE HOSE RUNS FROM CONSTRUCTION METERS TO DROP TANKS OR J STANDS, WILL BE REQUIRED TO BE NEW OR HAVE DOCUMENTATION THAT THEY HAVE ONLY BEEN USED FOR POTABLE WATER. NO BACKFLOW IS REQUIRED AS LONG AS THERE ARE AIR GAPS, UNLESS THE AGENCY DEEMS IT NECESSARY.

BACKFLOW PREVENTION REQUIREMENTS FOR TANKER TRUCKS AND POTABLE SPRAY RINGS

SCV WATER

SANTA CLARITA VALLEY WATER AGENCY
ENGINEERING SERVICES SECTION

APPROVED BY:

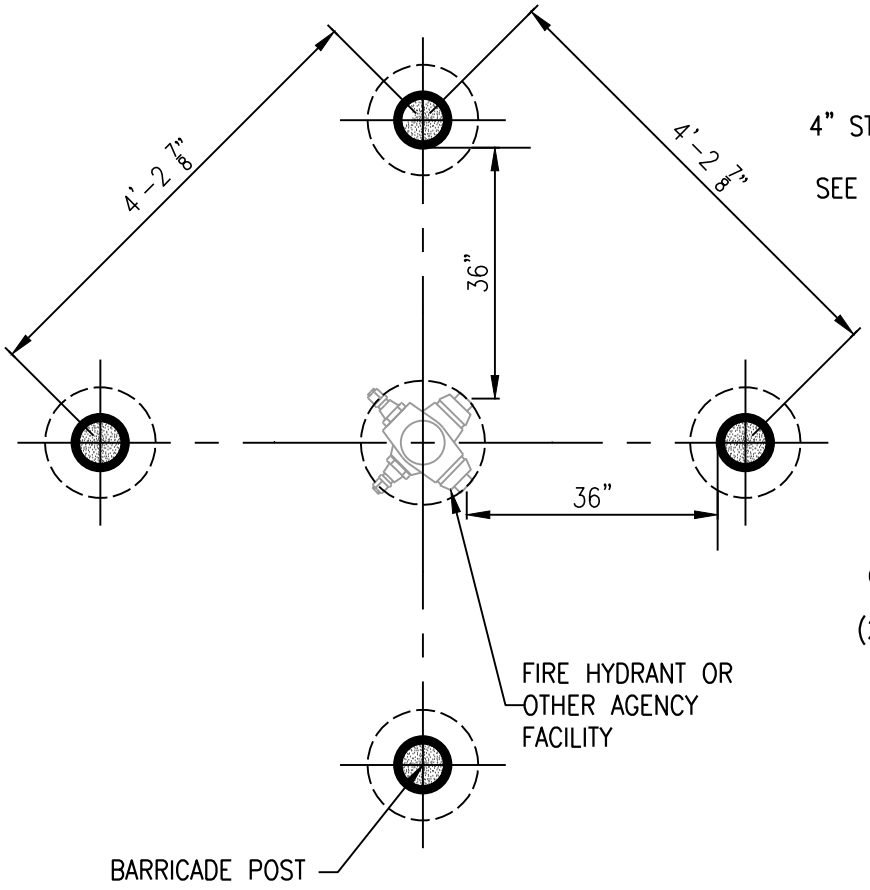
COURTNEY MAEL, P.E. 84647
CHIEF ENGINEER

7/20/2022
DATE

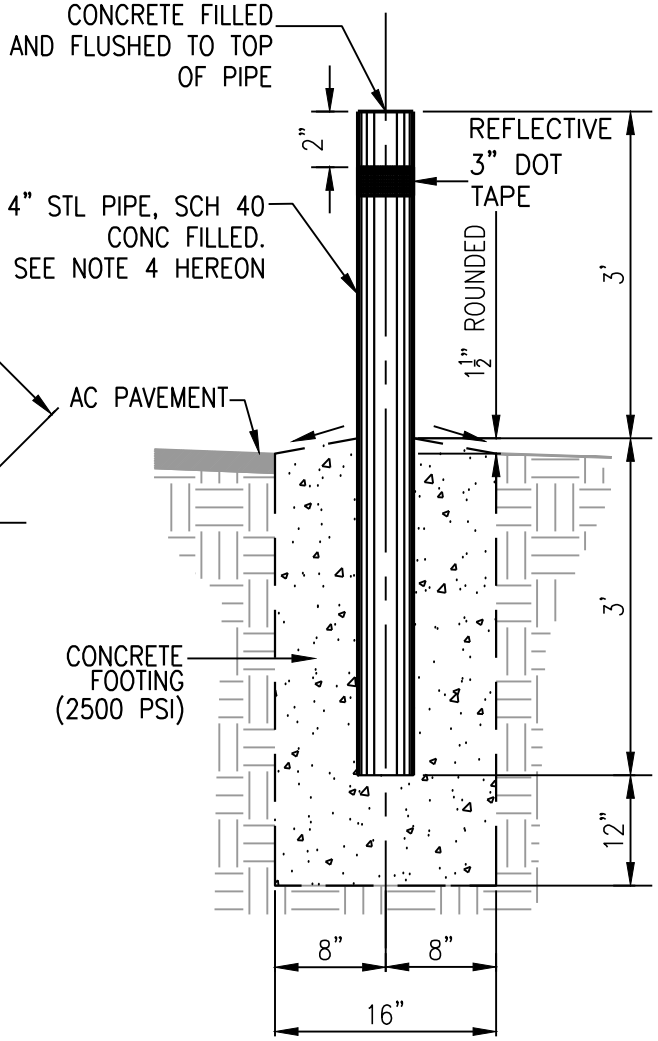
STD. DWG.
WP-105

REV. 1.0

SHEET 1 OF 1



PLAN



SECTION

NOTES:

1. PROVIDE BARRICADES FOR PROTECTION OF ABOVE GROUND FACILITIES NOT LOCATED BEHIND STANDARD CURBFACE OR AS DIRECTED BY AGENCY INSPECTOR.
2. SEE PLANS FOR NUMBER OF BARRICADES TO BE USED.
3. THE EXACT LOCATION OF BARRICADES MAY BE CHANGED IN THE FIELD.
4. THE STEEL PIPE BARRICADES ABOVE GROUND SHALL BE PAINTED WITH TWO COATS OF "ANSI/OSHA SAFETY YELLOW".
5. NO CONCRETE PAD SHALL BE INSTALLED ON ANY APPURTENANCES (I.E., FIRE HYDRANTS, ETC.) IF FACILITY BARRICADE IS INSTALLED.
6. 3" REFLECTIVE DOT TAPE TO BE INSTALLED 24 HOURS AFTER COATING OF PIPE BARRICADES.

FIRE HYDRANT/FACILITY BARRICADES

SCV WATER

SANTA CLARITA VALLEY WATER AGENCY
ENGINEERING SERVICES SECTION

APPROVED BY:

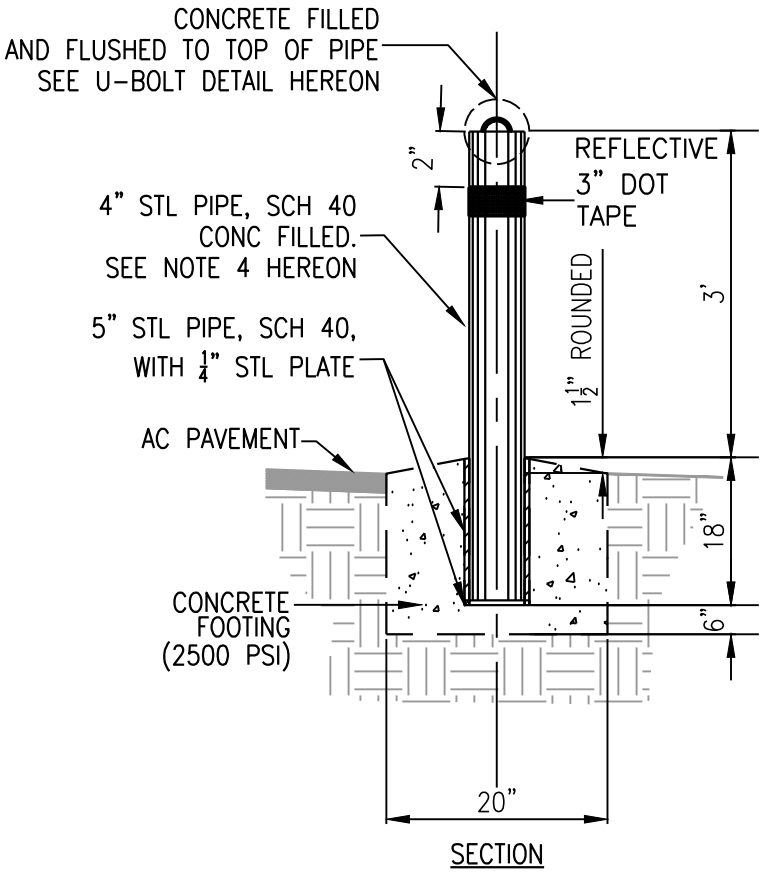
COURTNEY MAEL, P.E. 84647
CHIEF ENGINEER

7/20/2022
DATE

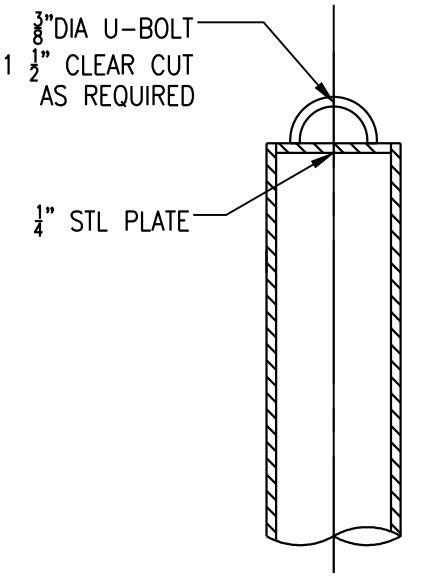
STD. DWG.
WP-106A

REV. 1.0

SHEET 1 OF 1



SECTION



U-BOLT DETAIL

NOTES:

1. REMOVABLE FACILITY BARRICADES SHALL BE PROVIDED WHEN NECESSARY AS INDICATED BY THE AGENCY AND/OR REPRESENTATIVE.
2. THE STEEL PIPE BARRICADES ABOVE GROUND SHALL BE PAINTED WITH PRIMER AND TWO COATS OF "ANSI/OSHA SAFETY YELLOW".
3. GRIND ALL EDGES AND ROUGH SURFACES SMOOTH AND HOT DIP GALVANIZE ALL COMPONENTS.

REMOVABLE FIRE HYDRANT/FACILITY BARRICADES

SCV WATER

SANTA CLARITA VALLEY WATER AGENCY
ENGINEERING SERVICES SECTION

APPROVED BY:

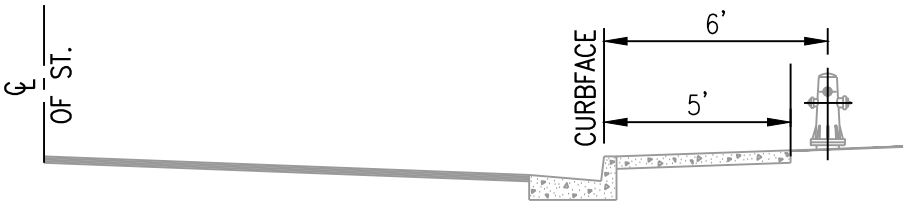
COURTNEY MAEL, P.E. 84647
CHIEF ENGINEER

7/20/2022
DATE

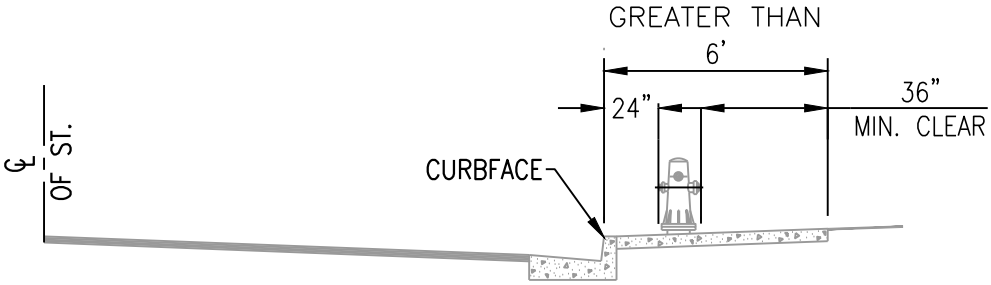
STD. DWG.
WP-106B

REV. 1.0

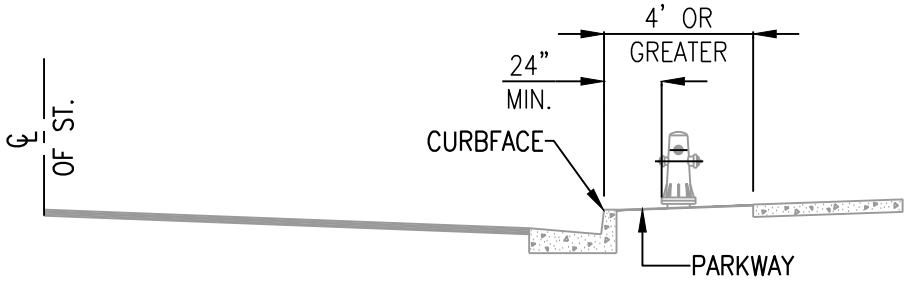
SHEET 1 OF 1



(A) WHEN 5 FT. SIDEWALKS ARE ADJACENT TO THE CURB, HYDRANTS SHALL BE CENTERED 6 FT. FROM CURB FACE. LONGITUDINAL AXIS PARALLEL TO AND DIRECTLY BEHIND CURB.



(B) WHEN SIDEWALKS ARE CONSTRUCTED WITH WIDTHS GREATER THAN OR EQUAL TO 6 FT. FROM CURB FACE TO OUTSIDE EDGE OF SIDEWALK (i.e., AROUND SCHOOLS, PARKS, COMMERCIAL OR INDUSTRIAL AREAS), HYDRANTS SHALL BE PLACED IN THE NORMAL LOCATION 24" FROM THE CURB FACE.



(C) WHEN SIDEWALKS ARE CONSTRUCTED BACK FROM CURB, IN PARKWAYS HYDRANT SHALL BE PLACED IN THE NORMAL LOCATION 24" FROM CURBFACE IN PARKWAY.

(D) WHEN INVERTED SHOULDER SECTION IS PERMITTED AND CURB, GUTTER AND SIDEWALKS ARE WAIVED, THE HYDRANT SHALL BE CENTERED 44"MINIMUM BEHIND THE EDGE OF THE PAVEMENT. PROVIDE GUARD POST AS REQUIRED PER PLAN OR PER SCVWA STD. DWG. WP-106.

NOTES:

1. USE THE SAME GUIDELINES AS SHOWN ABOVE TO LOCATE AIR VACUUM CANS.
2. HYDRANT TO BE LOCATED WITHIN THE PUBLIC RIGHT OF WAY.
3. SEE SCVWA STD. DWG. WP-131 FOR HYDRANT LOCATION FROM STREET BCR, ECR AND DRIVEWAY APPROACH.
4. SHUT OFF VALVE AND VALVE BOX ASSEMBLY FOR HYDRANT SHALL NOT BE IN CONCRETE GUTTER.

LOCATION OF SCV WATER ABOVE GROUND APPURTENANCES

SCV WATER

SANTA CLARITA VALLEY WATER AGENCY
ENGINEERING SERVICES SECTION

APPROVED BY:

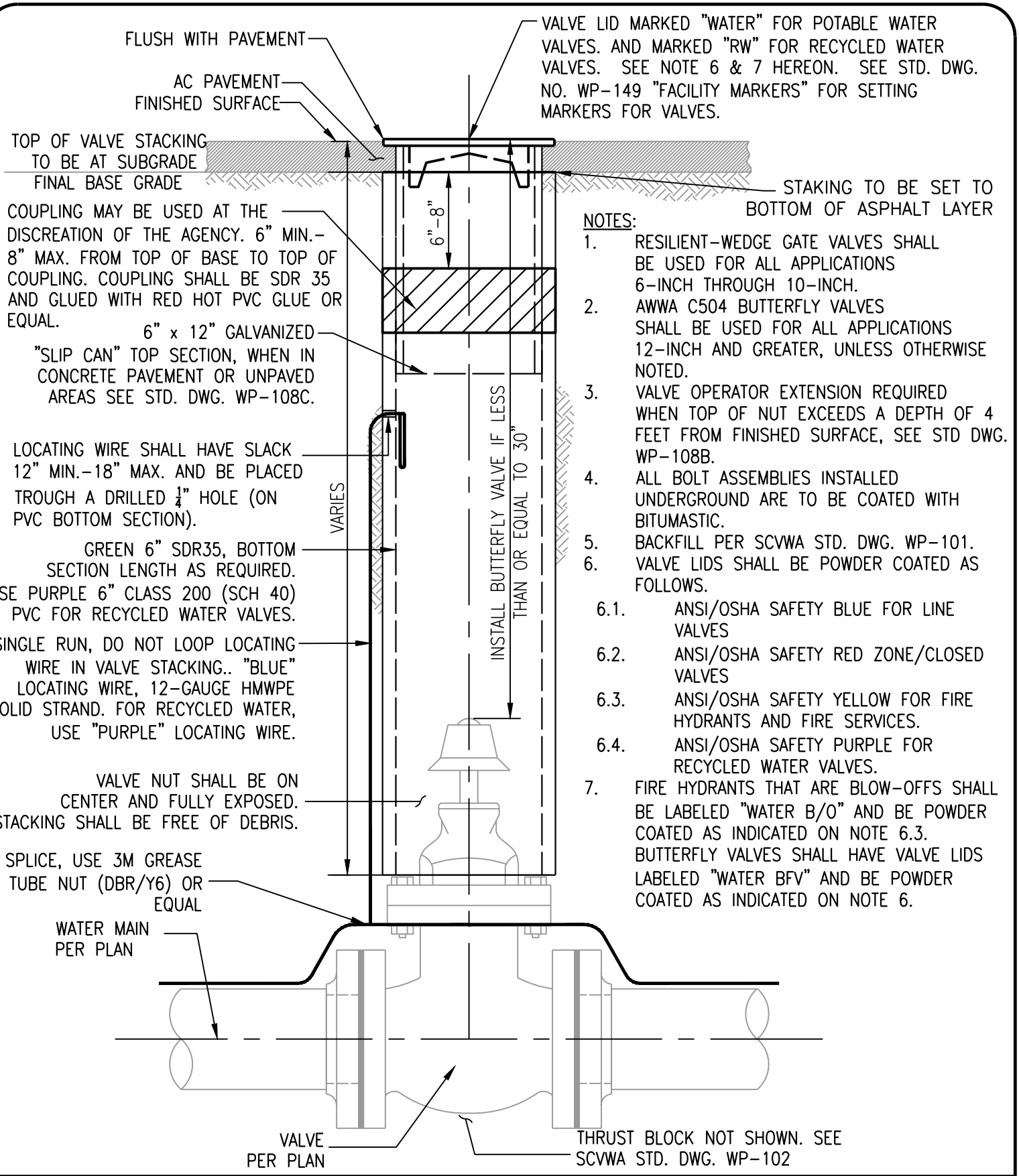
COURTNEY MAEL, P.E. 84647
CHIEF ENGINEER

7/20/2022
DATE

STD. DWG.
WP-107

REV. 1.0

SHEET 1 OF 1



NOTES:

1. RESILIENT-WEDGE GATE VALVES SHALL BE USED FOR ALL APPLICATIONS 6-INCH THROUGH 10-INCH.
2. AWWA C504 BUTTERFLY VALVES SHALL BE USED FOR ALL APPLICATIONS 12-INCH AND GREATER, UNLESS OTHERWISE NOTED.
3. VALVE OPERATOR EXTENSION REQUIRED WHEN TOP OF NUT EXCEEDS A DEPTH OF 4 FEET FROM FINISHED SURFACE, SEE STD DWG. WP-108B.
4. ALL BOLT ASSEMBLIES INSTALLED UNDERGROUND ARE TO BE COATED WITH BITUMASTIC.
5. BACKFILL PER SCVWA STD. DWG. WP-101.
6. VALVE LIDS SHALL BE POWDER COATED AS FOLLOWS.
   - 6.1. ANSI/OSHA SAFETY BLUE FOR LINE VALVES
   - 6.2. ANSI/OSHA SAFETY RED ZONE/CLOSED VALVES
   - 6.3. ANSI/OSHA SAFETY YELLOW FOR FIRE HYDRANTS AND FIRE SERVICES.
   - 6.4. ANSI/OSHA SAFETY PURPLE FOR RECYCLED WATER VALVES.
7. FIRE HYDRANTS THAT ARE BLOW-OFFS SHALL BE LABELED "WATER B/O" AND BE POWDER COATED AS INDICATED ON NOTE 6.3. BUTTERFLY VALVES SHALL HAVE VALVE LIDS LABELED "WATER BFV" AND BE POWDER COATED AS INDICATED ON NOTE 6.

VALVE STACKING/SLIP CAN ASSEMBLY

SCV WATER

SANTA CLARITA VALLEY WATER AGENCY
ENGINEERING SERVICES SECTION

APPROVED BY:

COURTNEY MAEL, P.E. 84647
CHIEF ENGINEER

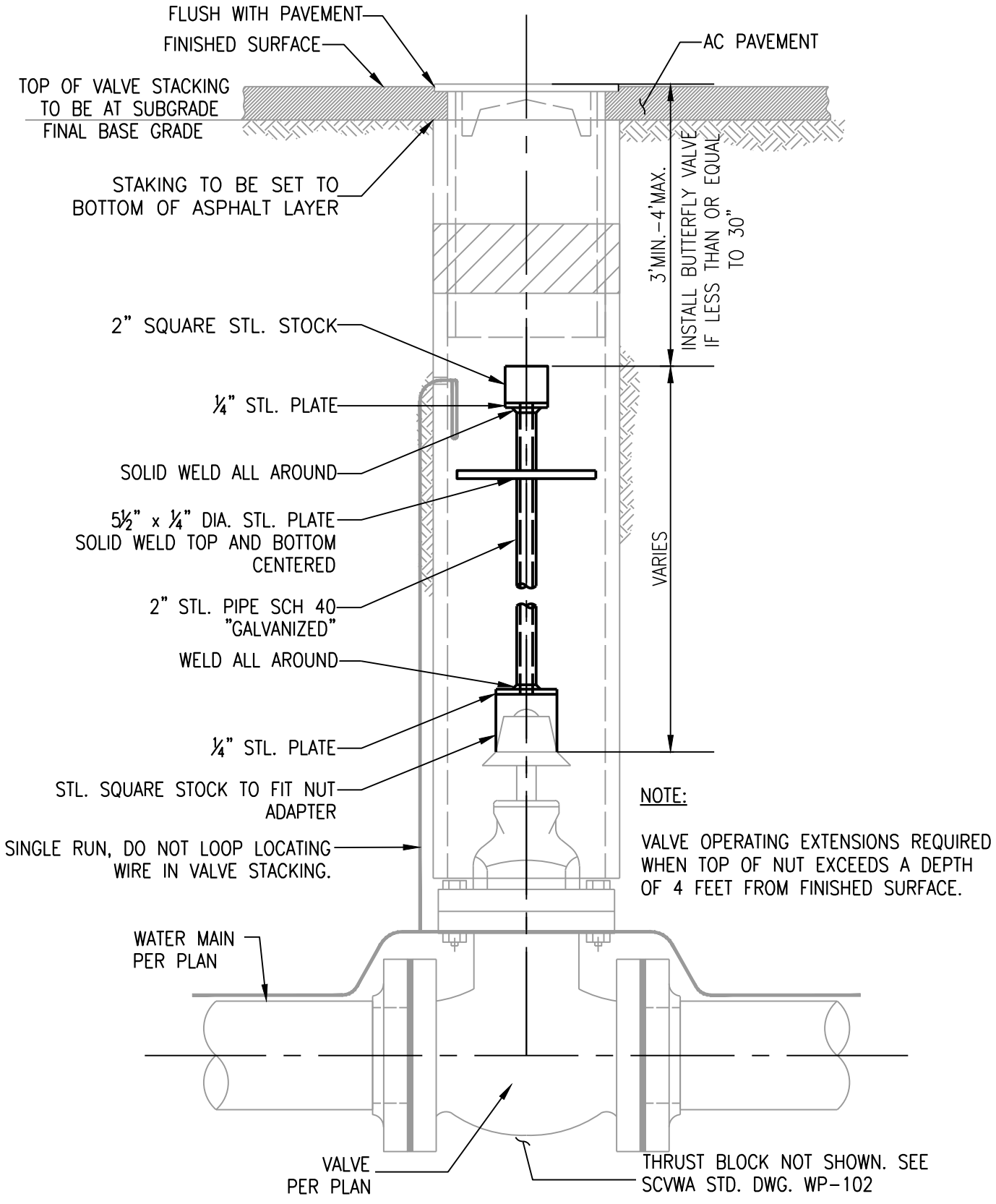
7/20/2022
DATE

STD. DWG.
WP-108A

REV. 1.0

SHEET 1 OF 1

VALVE EXTENSION ASSEMBLY (WHEN REQUIRED)



VALVE SLIP CAN ASSEMBLY OPERATING EXTENSION

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SANTA CLARITA VALLEY WATER AGENCY
ENGINEERING SERVICES SECTION

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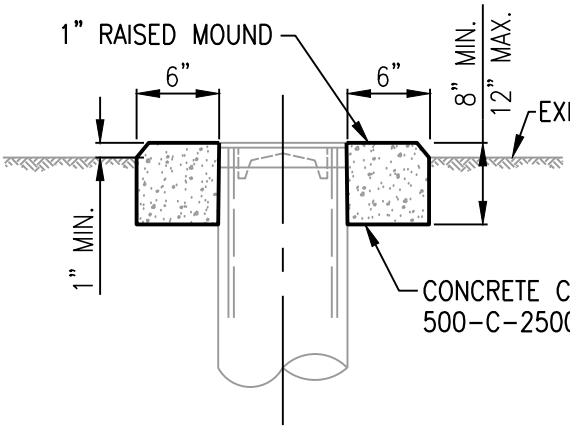
7/20/2022
DATE

STD. DWG.
WP-108B

REV. 1.0

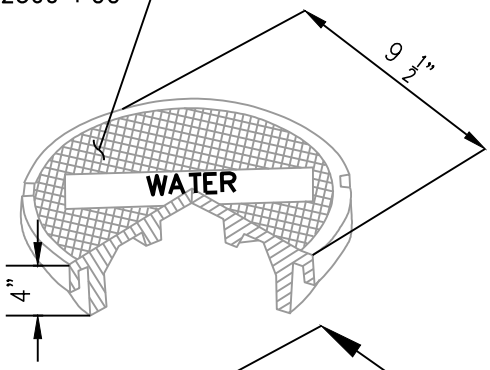
SHEET 1 OF 1

VALVE BOX ASSEMBLY (WHEN REQUIRED)

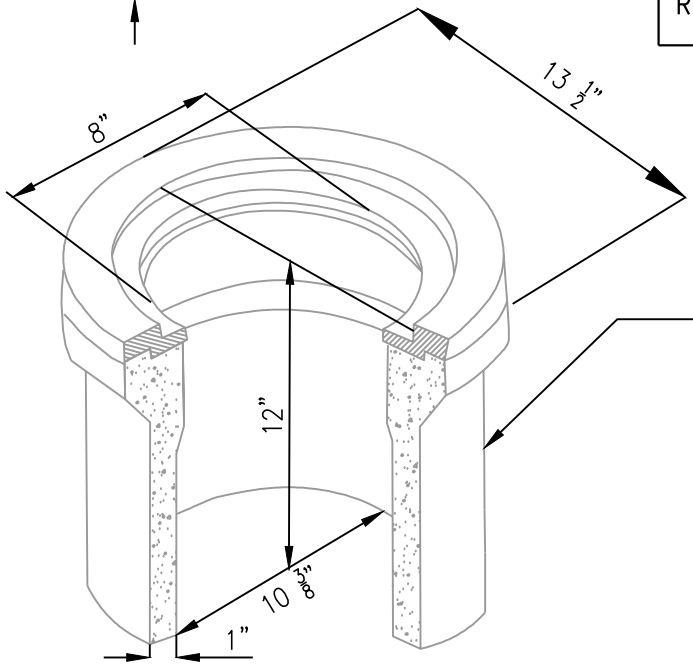


CONCRETE COLLAR FOR VALVE BOXES IN UNPAVED AREAS

CAST IRON COVER MARKED "WATER" FOR POTABLE WATER OR "RECYCLED WATER" FOR RECYCLED WATER, POWDER COATED ACCORDING TO STD. DWG. WP-108A & WP-149. FOR HYDRANTS THAT ARE BLOW-OFFS, LID MUST BE YELLOW AND MARKED "WATER B/O" AND ALL VALVE BOXES FOR BUTTERFLY VALVES SHALL BE MARKED AS "WATER BFV".



POWDER COAT COLORS (OSHA)	
SYSTEM VALVE	BLUE
ZONE VALVE	RED
FIRE HYDRANT VALVE	YELLOW
RECYCLED VALVE	PURPLE



J&R V3-RT BOX
OR APPROVED EQUAL

NOTES:

1. VALVE BOX SHALL BE USED WHEN IN CONCRETE PAVEMENT OR UNPAVED AREAS. USE J&R CONCRETE PRODUCTS V3-RT TRAFFIC RATED OR APPROVED EQUAL VALVE BOX. ADD 6" CONCRETE COLLAR FOR UNPAVED AREAS 8"-12" THICK AS DIRECTED BY THE AGENCY INSPECTOR.
2. SEE SCVWA STD. DWG. WP-149 FOR ID TAG, MARKERS AND LABELS FOR AGENCY FACILITIES AND APPURTENANCES.
3. INSTALL BARRICADES PER SCVWA STD. DWG. WP-106B AS DIRECTED BY THE AGENCY'S INSPECTOR WHEN THE VALVE BOX IS NOT LOCATED IN THE PARKWAY BEHIND THE CONCRETE CURB.
4. WHEN INSTALLED IN UNPAVED AREAS, PROVIDE FACILITY BARRICADES PER STD. DWG. WP-106A.

VALVE BOX ASSEMBLY

SCV WATER

SANTA CLARITA VALLEY WATER AGENCY
ENGINEERING SERVICES SECTION

APPROVED BY:

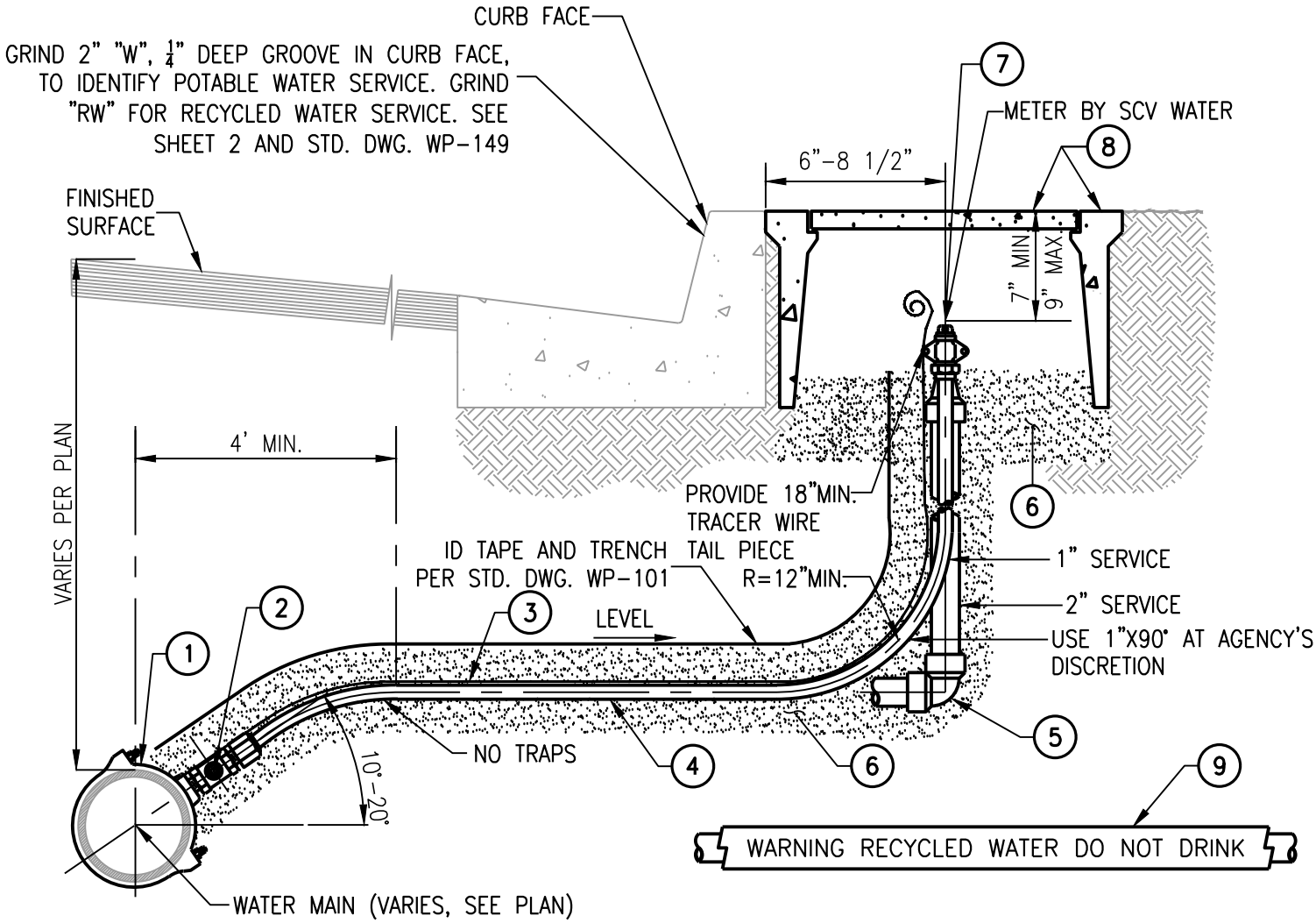
COURTNEY MAEL, P.E. 84647
CHIEF ENGINEER

7/20/2022
DATE

STD. DWG.
WP-108C

REV. 1.0

SHEET 1 OF 1



ITEM	MATERIALS
1	SADDLE/OULTET (VARIES BY PIPE) FIPT, SEE SHEET 2.
2	1"-2" MIPTxCOMP CTS-PJ BALL TYPE, CORPORATION STOP, ROTATE TOP OF NUT 90°.
3	LOCATING WIRE FOR EACH SERVICE LATERAL: USE 12-GAUGE HMWPE, BLUE WIRE FOR POTABLE WATER AND PURPLE WIRE FOR RECYCLED WATER.
4	BLUE 1"-2" MUNICIPEX-REHAU WITH INSERTS. USE PURPLE MUNICIPEX FOR RECYCLED WATER SERVICES (IF AVAILABLE).
5	2"x90° COMPxCOMP CTS-PJ FOR 2" SERVICE (IF NECESSARY).
6	ADD BED & FILL WITH SAND FROM WATER MAIN TO METER, 6" COVER, SEE NOTE 14.
7	1"-2" ANGLE METER STOP COMPxFL, BALL TYPE.
8	WATER METER BOX LABELED "WATER". FOR RECYCLED WATER SERVICES, THE METER BOX SHALL BE LABELED "RECYCLED WATER" AND PURPLE IN COLOR. SEE SHEET 3 NOTE 7.
9	RECYCLED WATER SERVICES SHALL BE ENCASED IN A PURPLE SLEEVE LABELED "WARNING","RECYCLED WATER", "DO NOT DRINK".

1", 1.5", & 2" METER SERVICE ASSEMBLY

SCV WATER

SANTA CLARITA VALLEY WATER AGENCY
ENGINEERING SERVICES SECTION

APPROVED BY:

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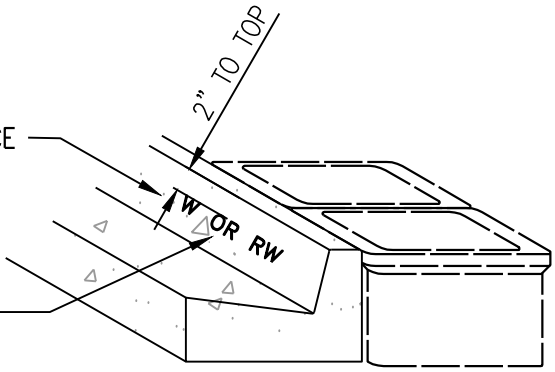
CHIEF ENGINEER

7/20/2022
DATE

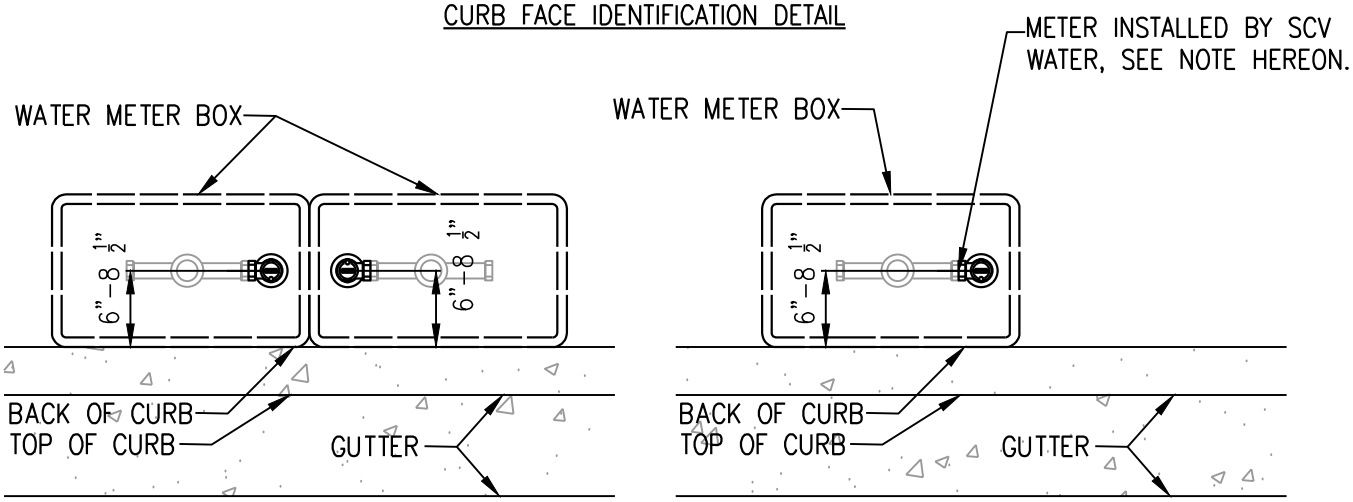
STD. DWG.
WP-109

REV. 1.0



GRIND 2"x2" "W" , ¼" DEEP GROOVE IN CURB FACE TO IDENTIFY EACH POTABLE WATER SERVICE. GRIND "RW" FOR RECYCLED WATER SERVICE. SEE STD. DWG. WP-149.

CURB FACE IDENTIFICATION DETAIL



SETTING METERS SIDE BY SIDE

SETTING A SINGLE METER

PLAN VIEW FOR SETTING METERS AND METER BOXES

NOTE: ALL METERS MUST BE ACTIVE AND INSTALLED PRIOR TO AGENCY ISSUING A "NOTICE OF COMPLETION" FOR THE PROJECT. SERVICE LATERALS WITH NO METERS MUST BE ABANDONED AT THE MAIN PER SCVWA SPECIFICATION 07706.1.

PIPE TYPE	SADDLE/OUTLET TYPE
*ACP (ASBESTOS CEMENT PIPE)	1"-2" FORD #202B SERIES
*C-900 (POLYVINYL CHLORIDE PIPE)	1"-2" ROMAC STYLE 202B W/EDPM
DIP (DUCTILE IRON PIPE)	1"-2" FORD #202B SERIES
STEEL PIPE	1"-2" WELD O LET
CML&S	1"-2" WELD O LET

OR EQUAL EPDM
*ONLY APPLIES WHEN INSTALLING A NEW SERVICE ON AN EXISTING WATER SYSTEM.

1", 1.5", & 2" METER SERVICE ASSEMBLY

SCV WATER

SANTA CLARITA VALLEY WATER AGENCY
ENGINEERING SERVICES SECTION

APPROVED BY:

COURTNEY MAEL, P.E. 84647
CHIEF ENGINEER

7/20/2022
DATE

STD. DWG.
WP-109

REV. 1.0

NOTES:

1. ALL MATERIALS SHALL BE NEW AND SHALL MEET OR EXCEED AWWA SPECIFICATIONS.
2. ALL FITTINGS MUST BE NO LEAD COMPRESSION FITTINGS, EPDM RUBBER PER AWWA STANDARDS.
3. LOCATING WIRE SHALL BE 12-GAUGE HMWPE SOLID STRAND WITH 3M GREASE TUBE NUT (DBR/Y6) OR EQUAL. BLUE FOR POTABLE WATER AND PURPLE FOR RECYCLED WATER.
4. SERVICE SADDLES SHALL NOT BE INSTALLED WITHIN 24" OF VALVES, COUPLINGS, JOINTS, OR STRUCTURE FOOTINGS. TAPPED COUPLINGS OR DIRECT TAPS ARE NOT PERMITTED.
5. INSTALL CORPORATION VALVE PER ITEM 2 ON SHEET 1, WITH KEY SIDEWAYS IN OPEN POSITION.
6. CONSTRUCT WATER SERVICE LINE PER ITEM 4 ON SHEET 1. INSTALL WATER SERVICE LINE PERPENDICULAR TO THE WATER MAIN. CONSTRUCT METER BOX PER ITEM 8. METER BOX TO BE SET FLUSH WITH SIDEWALK OR CURB AS SHOWN AND IN ACCORDANCE WITH THE CITY/COUNTY STANDARDS. METER BOX SHALL BE SET BEHIND SIDEWALK, WHERE SIDEWALK IS ADJACENT TO CURB, OR IN PARKWAY, BETWEEN CURB AND SIDEWALK, ALL WITHIN DEDICATED PUBLIC RIGHT-OF-WAY. NO METERS ALLOWED IN DRIVEWAY AREAS OR CUSTOMER WALKWAYS. METER BOX MUST BE KEPT LEVEL WITH WALKWAYS AND/OR CURB TRANSITIONS. FOR METERS SET IN TRAFFIC AREAS USE ARMORCAST (20K) LOAD RATED BOX AND COVER. SEE WP-131.
7. FOR LIDS (LIDS SHALL HAVE PICK HOLES), USE THE FOLLOWING:

   SANTA CLARITA SYSTEM INSTALLATION

   FOR 1" USE ARMORCAST LID A6001969T-H7 (20K).

   FOR 1.5", & 2" USE ARMORCAST LID A6001947T-H7 (20K).

   NEWHALL AND/OR VALENCIA SYSTEM INSTALLATION

   FOR 1" USE ARMORCAST LID A6001969T (20K) W/3M LOCATOR.

   FOR 1", 1.5", 2" ARMORCAST LID A6001947T (20K) W/3M LOCATOR.

   METER BOXES SHALL BE IN TRAFFIC RATED BY ARMORCAST (A6001946PCX12) FOR 1" AND (A60001640PCX12) FOR 1.5" & 2" POTABLE WATER SERVICES. BOX SHALL BE PURPLE FOR RECYCLED WATER SERVICES AND LABELED AS "RECYCLED WATER"
8. METER BOXES ARE TO BE LOCATED ADJACENT TO CURB. UNDER NO CIRCUMSTANCES SHALL THE METER BOXES BE PLACED IN HIGH TRAFFIC AREAS, INCLUDING DRIVEWAYS AND DRIVEWAY APRONS, UNLESS AUTHORIZED BY THE AGENCY'S INSPECTOR. IF THE INSPECTOR ALLOWS, USE WP-125C, COMPACTED TO 95% UNDER THE METER BOX.
9. METER BOXES SHALL BE INSTALLED WITHIN THE PUBLIC RIGHT OF WAY OR ONLY WITHIN WATERLINE EASEMENTS.
10. HOSE BIBS SHALL NOT BE INSTALLED ABOVE METER BOXES.
11. IN ALL CASES THERE SHOULD BE A MINIMUM SEPARATION OF 10' FEET BETWEEN WATER SERVICES AND SEWER LATERALS. THERE SHALL ALSO BE A MINIMUM SEPARATION OF 10' FEET BETWEEN THE CENTER OF A TREE AND THE NEAREST EDGE OF THE METER BOX, IF THE DISTANCE IS LESS THAN 10'-FEET THEN A PROPER ROOT BARRIER SYSTEM SHALL BE INSTALLED AROUND THE TREE, THAT HAS BEEN APPROVED BY THE AGENCY.
12. IRRIGATION METERS:
    - 12.1. WHERE PARKWAYS OR SIDE LANDSCAPING STRIPS ALONG STREETS ARE TO BE IRRIGATED, A SEPARATE METER SHALL BE INSTALLED ON EACH SIDE OF THE STREET. RUNNING AN IRRIGATION LINE FROM THE METER TO THE OPPOSITE SIDE OF THE STREET IS PROHIBITED.
    - 12.2. WHERE A MEDIAN STRIP MUST BE IRRIGATED, THE METER SHALL BE IN THE SIDE PARKWAY. METERS ARE NOT ALLOWED IN THE CENTER MEDIAN STRIP. METER LOCATION SHALL EASILY BE ACCESSIBLE AND PROTECTED FROM BEING COVERED BY LANDSCAPE MATERIALS OR OTHER OBSTRUCTIONS. THE AGENCY ENGINEER RESERVES THE RIGHT TO DETERMINE AND/OR SELECT ALL METER LOCATIONS.
13. SERVICES SHALL BE SET PROPERLY IN ACCORDANCE TO THIS STANDARD DRAWING. NO MODIFICATION OF SERVICES IS ALLOWED, WHICH INCLUDES ADDING COUPLINGS AND/OR CRIMPING. SHALL ANY UNAUTHORIZED MODIFICATIONS OCCUR TO THE SERVICE, THE SERVICE LINE WILL BE REJECTED AND HAVE TO BE REPLACED FROM CORPORATION TO ANGLE STOP.
14. SAND BEDDING AND FILL SHALL BE COMPACTED TO 95% UNLESS OTHERWISE APPROVED BY THE AGENCY.
15. WHEN A BACKFLOW IS REQUIRED, THE AGENCY MUST APPROVED THE BACKFLOW (USC APPROVED RP BACKFLOW) AND THE LOCATION PRIOR TO ACTIVATING THE WATER SERVICE.

1", 1.5", & 2" METER SERVICE ASSEMBLY

SCV WATER

SANTA CLARITA VALLEY WATER AGENCY
ENGINEERING SERVICES SECTION

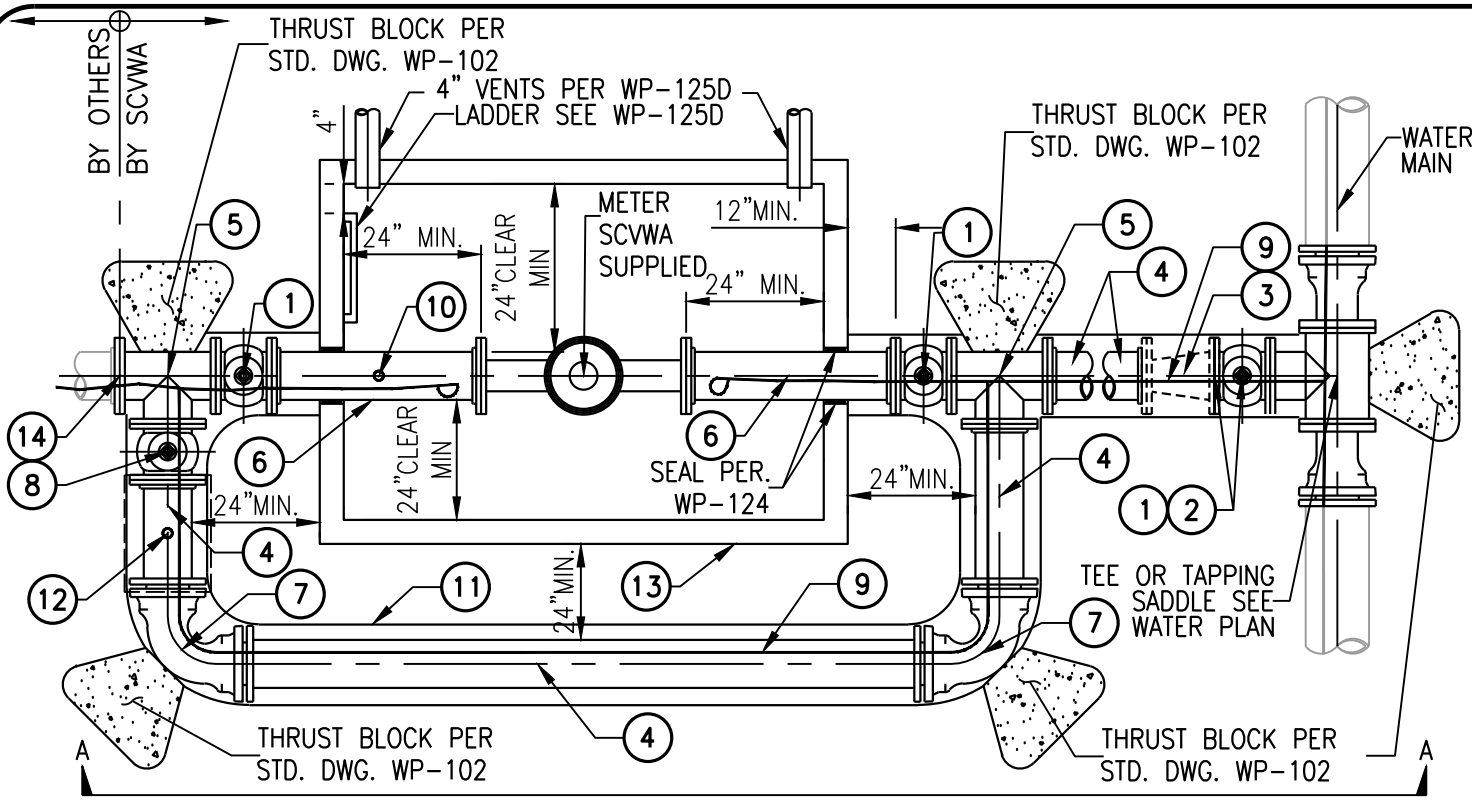
APPROVED BY:

COURTNEY MAEL, P.E. 84647
CHIEF ENGINEER

7/20/2022
DATE

STD. DWG.
WP-109

REV. 1.0



PLAN VIEW

ITEM	MATERIALS (THIS SHEET ONLY)
1	RW GATE VALVE FLxFL, SIZE PER PLAN/SERVICE SIZE (4"MIN.).
2	TEST PLATE, SIZE PER PLAN.
3	REDUCER FLxMJ OR FLxMJ ADAPTER, REFERENCE PLAN.
4	DUCTILE IRON PIPE CLASS 350, SIZE & LENGTH PER PLAN.
5	FLxFL TEE WITH FLxMJ ADAPTER, AS NEEDED, SIZE PER PLAN.
6	DIP CLASS 350 FLxFL SPOOL, CUSTOM, SIZED PER PLAN.
7	90°-MJxMJ DI BEND (C110), RESTRAINED.
8	RW GATE VALVE FLxMJ, SIZE PER PLAN/SERVICE SIZE, VALVE SHALL BE CLOSED AND LID SHALL BE PAINTED OSHA "SAFETY RED."
9	BLUE LOCATING WIRE, 12 GAUGE HMWPE SOLID STRAND USE PURPLE LOCATING WIRE FOR RECYCLED WATER SERVICES.
10	2"x SERVICE SIZE SADDLE (FIPT) AND 2" CORPORATION STOP (MIPTxFIPT) WITH 2" PLUG (NO LEAD).
11	ENCASE/WRAP PIPE IN ONE LAYER OF POLYETHYLENE V-BIO FILM USE PURPLE 8-MIL POLYETHYLENE FILM FOR RECYCLED WATER SERVICES.
12	2" BLOW-OFF ASSEMBLY PER SCVWA. STD. DWG. WP-114.
13	TRAFFIC RATED VAULT PER SCVWA STD. DWG. WP-125D.
14	TEMPORARY BLOW-OFF ASSEMBLY PER SCVWA. STD. DWG. WP-117.

CONTINUED ON SHEET 2

3" AND ABOVE WATER SERVICE (FULLY RESTRAINED)

SCV WATER

SANTA CLARITA VALLEY WATER AGENCY
ENGINEERING SERVICES SECTION

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WP-110

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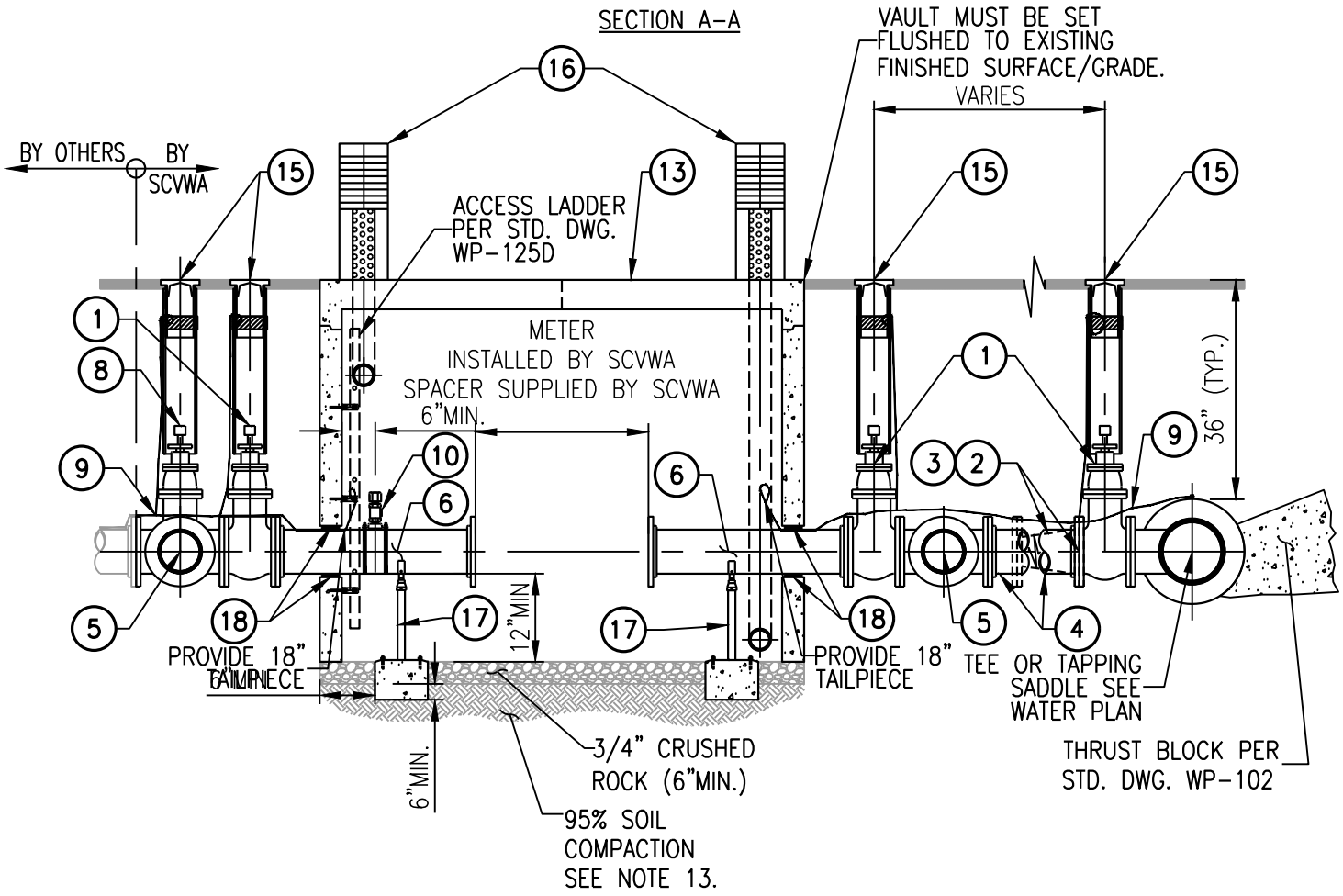
NOTE:
SEE SHEET 3 FOR COMPLETE BILL OF MATERIALS.



CONTINUED ON SHEET 3

3" AND ABOVE WATER SERVICE (FULLY RESTRAINED)

SCV WATER

SANTA CLARITA VALLEY WATER AGENCY
ENGINEERING SERVICES SECTION

APPROVED BY:

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7/20/2022
DATE

STD. DWG.
WP-110

REV. 1.0

ITEM	MATERIALS
1	RW GATE VALVE FLxFL, SIZE PER PLAN/SERVICE SIZE (4"MIN.).
2	TEST PLATE, SIZE PER PLAN.
3	REDUCER FLxMJ OR FLxMJ ADAPTER, REFERENCE PLAN.
4	DUCTILE IRON PIPE CLASS 350, SIZE & LENGTH PER PLAN.
5	FLxFL TEE WITH FLxMJ ADAPTER, AS NEEDED, SIZE PER PLAN.
6	DIP CLASS 350 FLxFL SPOOL, CUSTOM, SIZED PER PLAN.
7	90°-MJxMJ DI BEND (C110), RESTRAINED.
8	RW GATE VALVE FLxMJ, SIZE PER PLAN/SERVICE SIZE, VALVE SHALL BE CLOSED AND LID SHALL BE PAINTED OSHA "SAFETY RED."
9	BLUE LOCATING WIRE, 12 GAUGE HMWPE SOLID STRAND USE PURPLE LOCATING WIRE FOR RECYCLED WATER SERVICES.
10	2"x SERVICE SIZE SADDLE (FIPT) AND 2" CORPORATION STOP (MIPTxFIPT) WITH 2" BRASS PLUG (NO LEAD).
11	ENCASE/WRAP PIPE IN ONE LAYER OF POLYETHYLENE V-BIO FILM USE PURPLE 8-MIL POLYETHYLENE FILM FOR RECYCLED WATER SERVICES.
12	2" BLOW-OFF ASSEMBLY PER SCVWA. STD. DWG. WP-114.
13	TRAFFIC RATED VAULT PER SCVWA STD. DWG. WP-125D.
14	TEMPORARY BLOW-OFF ASSEMBLY PER SCVWA. STD. DWG. WP-117.
15	VALVE SLIP CAN ASSEMBLY PER STD. DWG. WP-108A/B/C.
16	VENT/STANDPIPE PER STD. DWG. NO. WP-125D.
17	PIPE SUPPORT AS NEEDED PER STD. DWG. WP-123.
18	PENETRATING WALL SEAL PER STD. DWG. WP-124. OR COVER KNOCKOUT WITH NON-SHRINK MORTAR/GROUT ALL AROUND PIPE. MORTAR SHALL PROVIDE A COMPLETE SEAL.

CONTINUED ON SHEET 4

3" AND ABOVE WATER SERVICE (FULLY RESTRAINED)

SCV WATER

SANTA CLARITA VALLEY WATER AGENCY
ENGINEERING SERVICES SECTION

APPROVED BY:

COURTNEY MAEL, P.E. 84647
CHIEF ENGINEER

7/20/2022
DATE

STD. DWG.
WP-110

REV. 1.0

NOTES:

1. SUBSTITUTIONS IN MATERIAL MAY NOT BE MADE WITHOUT THE APPROVAL OF THE AGENCY.
2. VAULT MUST BE H-20 TRAFFIC RATED.
3. ALL MATERIALS SUPPLIED WILL MEET OR EXCEED AWWA SPECIFICATIONS.
4. EXACT PIPE LENGTHS TO BE DETERMINED IN THE FIELD.
5. 24" MINIMUM CLEARANCE IS REQUIRED FROM WALL OF VAULT TO PIPING.
6. TWO 4" VENTS ARE REQUIRED PER SCVWA STD. DWG. NO. 125D. VENT LOCATION TO BE DETERMINE BY THE AGENCY REPRESENTATIVE.
7. BLUE LOCATING WIRE, 12 GAUGE HMWPE SOLID STRAND WITH 3M GREASE TUBE NUT (DBR/Y6) OR EQUAL, SHALL BE INSTALLED AND 18-INCH TAIL PIECES MUST BE PROVIDED AT EACH END OF THE VAULT. SPLICING SHALL BE DONE AS NECESSARY BUT KEPT AT A MINIMUM. USE PURPLE LOCATING WIRE FOR RECYCLED WATER SERVICES.
8. ALL BOLT ASSEMBLIES INSTALLED UNDERGROUND ARE TO BE SPRAYED WITH A NO-OX-ID COATING OR APPROVED EQUAL.
9. METER SHALL BE INSTALLED BY THE AGENCY AND SPACER WILL BE PROVIDED BY THE AGENCY.
10. ALL NUTS & BOLTS AND OTHER STEEL PARTS SHALL BE ZINC PLATED WITH THE EXCEPTION OF THREADED PARTS.
11. POLYETHYLENE WRAP SHALL BE INSTALLED ALL THE WAY UP TO THE FLANGES IN THE INTERIOR OF THE VAULT.
12. CONTRACTOR SHALL PROVIDE FULL SUBMITTAL OF VAULT PRIOR TO INSTALLATION.
13. BOTTOM OF VAULT SHALL BE COMPACTED TO A MINIMUM OF 95% (TESTED AT ALL FOUR CORNERS AND IN CENTER OF WHERE VAULT IS TO BE PLACED) AND TEST RESULTS SHALL BE PROVIDED TO THE AGENCY PRIOR TO INSTALLING AND SETTING THE VAULT.
14. VAULT SHALL BE SET IN A LOCATION, WHICH WILL HAVE MINIMAL TO NO FOOT/VEHICLE TRAFFIC.
15. ALL PIPE AND BENDS SHALL BE FULLY RESTRAINED FROM WATER MAIN TO BACKFLOW.
16. ALL SERVICES SHALL NOT EXCEED 36-INCHES IN DEPTH (TO TOP OF PIPE). SHALL THE WATER MAIN EXCEED 36-INCHES, CONTRACTOR SHALL PROVIDE NECESSARY FITTINGS TO RAISE PIPE TO THE MAX DEPTH OF 36-INCHES FOR WATER SERVICES.
17. ALL FLANGE GASKETS SHALL BE NON-ASBESTOS EPDM.

3" AND ABOVE WATER SERVICE (FULLY RESTRAINED)

SCV WATER

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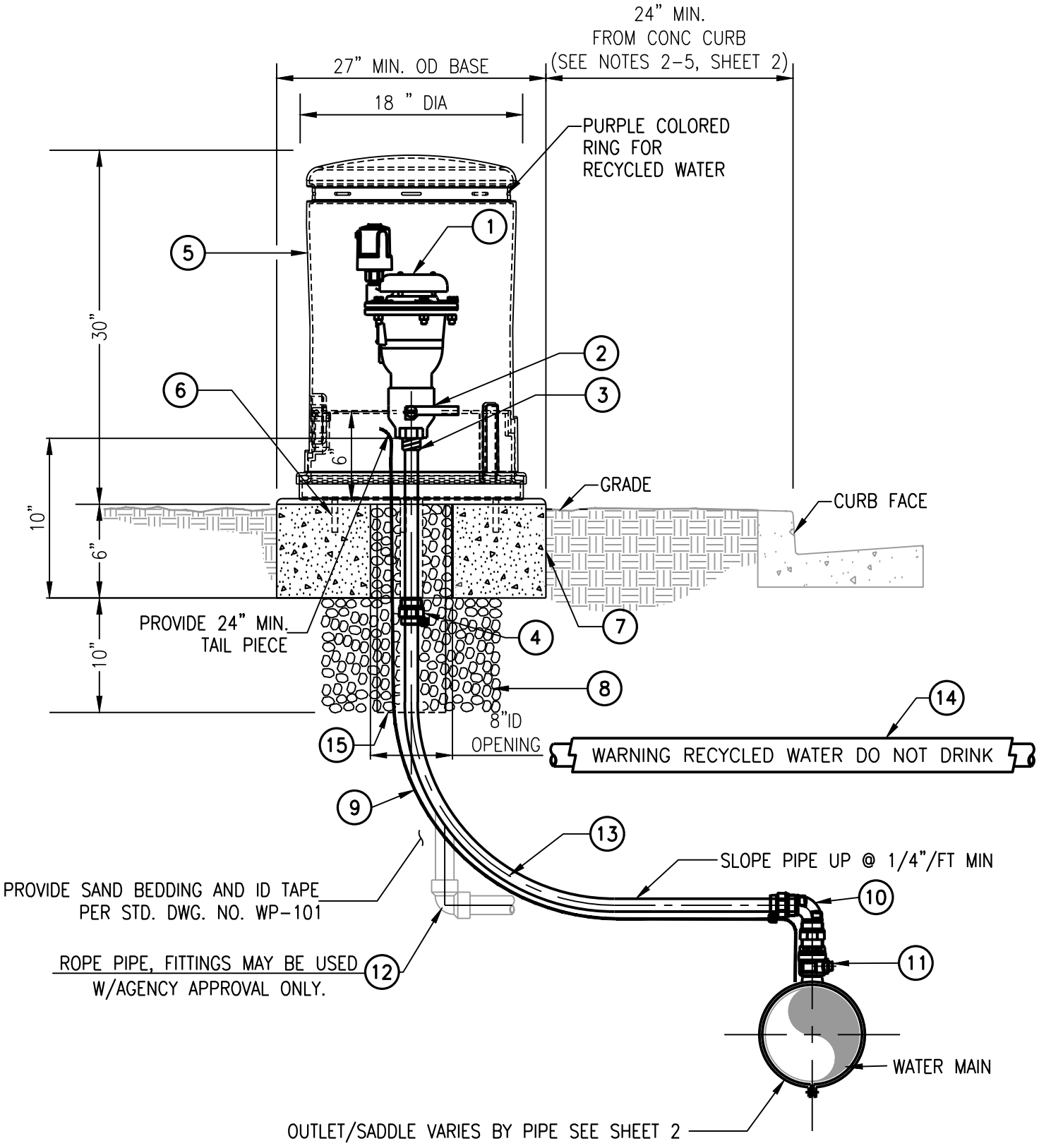

CONTINUED ON SHEET 2

1" & 2" AIR/VAC RELEASE VALVE ASSEMBLY

SCV WATER

SANTA CLARITA VALLEY WATER AGENCY
ENGINEERING SERVICES SECTION

APPROVED BY:

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7/20/2022
DATE

STD. DWG.
WP-111

REV. 1.0

PIPE TYPE	SADDLE/OUTLET TYPE
*ACP (ASBESTOS CEMENT PIPE)	1"-2" FORD #202B SERIES
*C-900 (POLYVINYL CHLORIDE PIPE)	1"-2" ROMAC STYLE 202B W/EDPM
DIP (DUCTILE IRON PIPE)	1"-2" FORD #202B SERIES
STEEL PIPE	1"-2" WELD O LET
CML&S	1"-2" WELD O LET

OR EQUAL EPDM
*ONLY APPLIES WHEN INSTALLING A NEW SERVICE ON AN EXISTING WATER SYSTEM.

ITEM	MATERIALS
1	1" OR 2" ARI D-060 AIR RELEASE VALVE THREADED (MIP).
2	1" OR 2" STAINLESS STEEL OR BRASS BALL VALVE WITH HANDLE, FLANGExFIPT.
3	1"-2" BRASS NIPPLE (12"MAX. LENGTH).
4	1"-2" COMPxFIPT COUPLING.
5	POLYETHYLENE VALVE ENCLOSURE, BY PIPELINE PRODUCTS #VCAS-1830, SANDSTONE MIX COVER. WITH PURPLE RING LABEL FOR RECYCLED, SEE SHEET 1.
6	LOCK PLATE AND BASE WITH GALVANIZED CONCRETE ANCHOR BOLTS 3/4"x5 1/2" MIN.
7	CLASS B CONCRETE BASE, 2500 PSI.
8	PEA GRAVEL (3/8").
9	BLUE LOCATING WIRE, 12 GAUGE HMWPE SOLID STRAND WITH 3M GREASE TUBE NUT (DBR/Y6) OR EQUAL. USE PURPLE LOCATING WIRE FOR RECYCLED WATER ASSEMBLIES. USE NYLON ZIP TIES TO SECURE WIRE TO PIPE.
10	1"-2"x90° FIPxCOMP, FITTING.
11	1"-2" CORP STOP MIPxMIP.
12	1"-2"x 90° COMPxCOMP, MAY ONLY BE USED WITH PRIOR AGENCY APPROVAL.
13	1" OR 2" MUNICIPEX-REHAU WITH INSERTS, USE FOR 1" FORD #52 OR FOR 2" USE FORD #55 OR APPROVED EQUAL. USE PURPLE MUNICIPEX-REHAU FOR RECYCLED WATER ASSEMBLIES IF AVAILABLE.
14	RECYCLED WATER SERVICES SHALL BE ENCASED IN A PURPLE, SLEEVE LABELED "WARNING RECYCLED WATER DO NOT DRINK".
15	PROVIDE 6"x18" LONG MIN. BLUE SDR 35 PVC PIPE. FOR RECYCLED WATER AIR VACUUM ASSEMBLIES USE PURPLE SDR 35 PVC PIPE. FILL WITH 3/8" PEA GRAVEL.

NOTES:

1. USE FORD, MUELLER, OR A.Y. McDONALD COMPRESSION FITTINGS. ALL PARTS MUST BE NO LEAD AND EPDM.
2. PROVIDE BARRICADES FOR PROTECTION IF ASSEMBLY IS NOT LOCATED BEHIND A STANDARD CURB FACE, SEE STANDARD DRAWING WP-106A/B.
3. IF SIDEWALK IS ADJACENT TO CURB FACE AND LESS THAN 6.5' WIDE, LOCATE ASSEMBLY CONCRETE BASE 12" FROM BACK OF SIDEWALK.
4. IF SIDEWALK IS ADJACENT TO CURB FACE AND 6.5' WIDE OR MORE, LOCATE CONCRETE BASE 12" FROM CURB FACE. PROVIDE A MINIMUM OF 36" CLEARANCE FROM CONCRETE BASE TO BACK OF SIDEWALK.
5. IF THERE IS A PARKWAY BETWEEN CURB FACE AND SIDEWALK AND IT IS 4.5' WIDE OR MORE LOCATE CONCRETE BASE 12" FROM CURB FACE. IF PARKWAY IS LESS THAN 4.5' LOCATE CONCRETE BASE 12" FROM THE BACK OF SIDEWALK.
6. ITEM NUMBER 2 REFERENCES THE 2" PART FOR 1" ASSEMBLY USE FORD B84-444-NL OR APPROVED EQUAL.
7. LOCATE AIR VACUUM ASSEMBLIES PER STANDARD DRAWINGS WP-107 AND WP-131.

1" & 2" AIR/VAC RELEASE VALVE ASSEMBLY

SCV WATER

SANTA CLARITA VALLEY WATER AGENCY
ENGINEERING SERVICES SECTION

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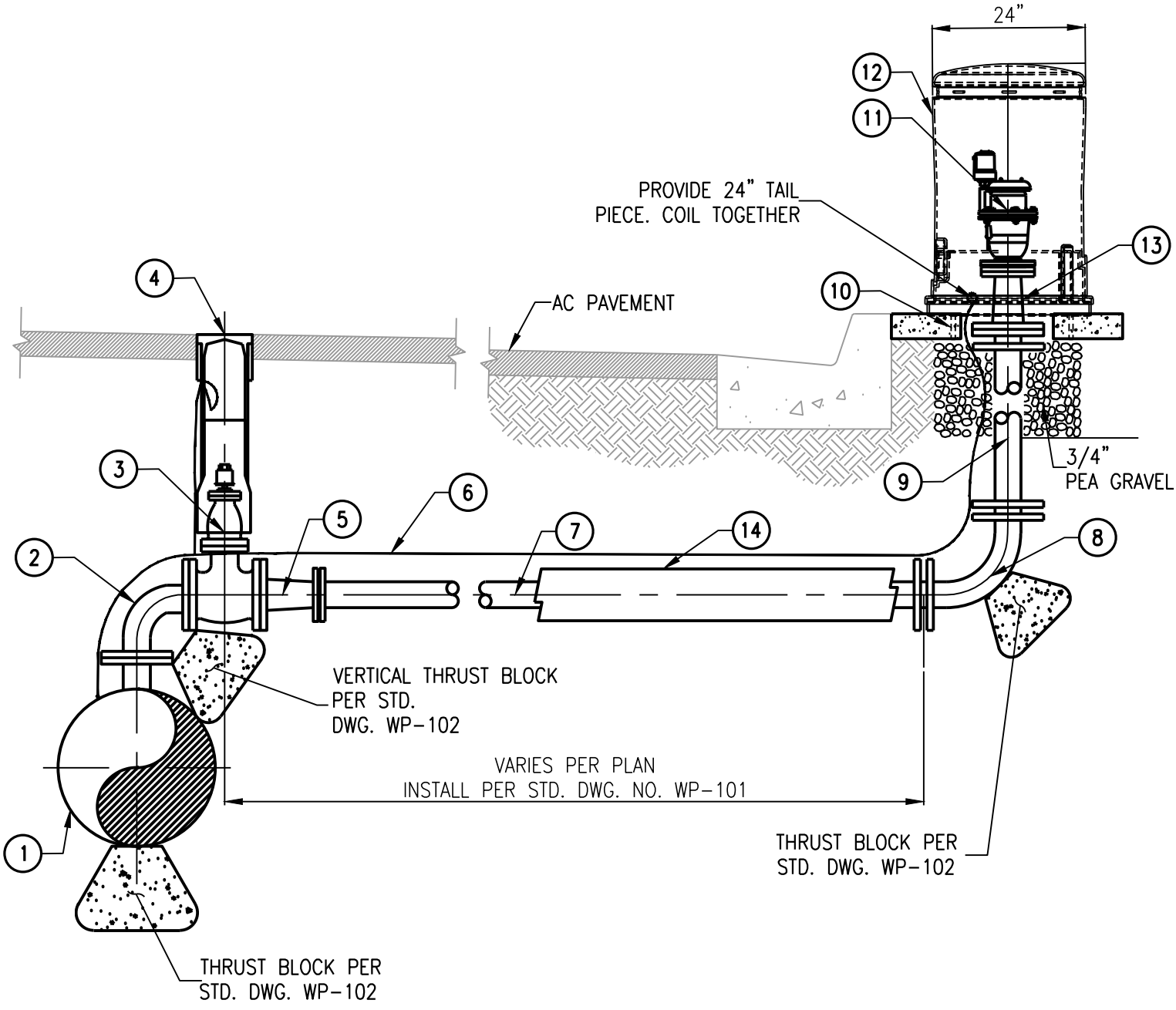
STD. DWG.
WP-111

REV. 1.0

NOTE:
RESTRAIN ALL JOINTS AND PROVIDE THRUST BLOCKS PER STD. DWG. WP-102 SEE SHEET 2 FOR BILL OF MATERIALS. TRENCH BACKFILL SHALL BE PER WP-101.



CONTINUED ON SHEET 2

3" AND 4" COMBINATION AIR RELEASE AND VACUUM VALVE ASSEMBLY (FULLY RESTRAINED)

SCV WATER

SANTA CLARITA VALLEY WATER AGENCY
ENGINEERING SERVICES SECTION

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CHIEF ENGINEER

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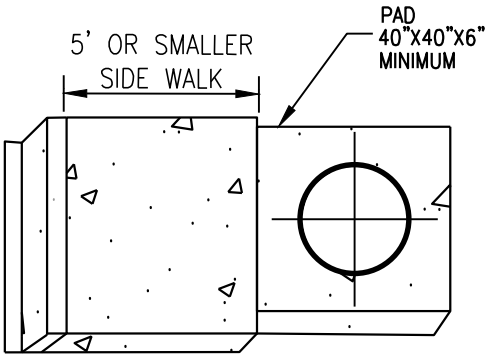

NOTE:
COMBINATION VALVE PLACEMENT SHALL BE WITHIN THE PUBLIC RIGHT-OF-WAY.
SEE STD. DWG. NO. WP-107.

TABLE OF DIMENSIONS						
NOMINAL VALVE SIZE	A.R.I. COMBINATION AIR VALVE	PIPING SIZE	VALVE & FITTING SIZE	PRESSURE RATING (PSI)	"D" (INCHES)	"H" (INCHES)
3"	D-060-C,3	3"	3"	285	9 1/2	17
3"	D-062HF,3	3"	3"	360	9 1/2	17
4"	D-060-C,4	4"	4"	285	11	18 7/10
4"	D-062HF,4	4"	4"	360	11	18 7/10

ITEM	MATERIALS
1	4" OUTLET TEE (MJxFL) CL350, RESTRAINED.
2	4" D.I. LONG 90° RADIUS BEND (FLxFL), CL350.
3	4" (FLxFL) GATE VALVE (RESILIENT WEDGE) OR FLxMJ FOR 4" ASSEMBLY.
4	VALVE SLIP CAN ASSEMBLY PER STD. DWG. WP108A/B/C.
5	4"X3" (MJxFL) REDUCER, FOR 3" AIR VACUUM ASSEMBLIES ONLY.
6	BLUE LOCATING WIRE, 12 GAUGE HMWPE SOLID STRAND WITH 3M GREASE TUBE NUT (DBR/Y6) OR EQUAL.WATER SERVICES. USE PURPLE LOCATING WIRE FOR RECYCLED WATER MAINS.
7	3" OR 4" DIP PIPE CL350, DOUBLE CEMENT LINED AND ASPHALTIC COATED.
8	3" OR 4" D.I. LONG RADIUS 90° (MJxFL) DI BEND, CLASS 250.
9	3" OR 4" DI SPOOL (FLxFL), CLASS 250.
10	3/8"-16 UNC ANCHOR BOLT WASHER AND NUT (3 TYPICAL).
11	3" OR 4" DUAL BODY COMBINATION AIR VALVE. SEE TABLE ON SHEET 2.
12	36" TALL X 20" DIA. SANDSTONE, #VCAS-2436 PER PIPELINE PRODUCTS. FOR RECYCLED WATER SYSTEMS, A PURPLE STRIPE SHALL BE AROUND CIRCUMFERENCE OF ENCLOSURE.
13	4" X 3" D.I. REDUCER (FLxFL) CL 350 (FOR 3" VALVE).
14	ENCASE W/ONE LAYER OF V-BIO 8-MIL POLYETHYLENE FILM. FOR RECYCLED WATER ASSEMBLIES ADD ONE LAYER OF PURPLE 8-MIL POLYETHYLENE FILM OVER V-BIO LAYER.

3" AND 4" COMBINATION AIR RELEASE AND VACUUM VALVE ASSEMBLY (FULLY RESTRAINED)

SCV WATER

SANTA CLARITA VALLEY WATER AGENCY
ENGINEERING SERVICES SECTION

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WP-112

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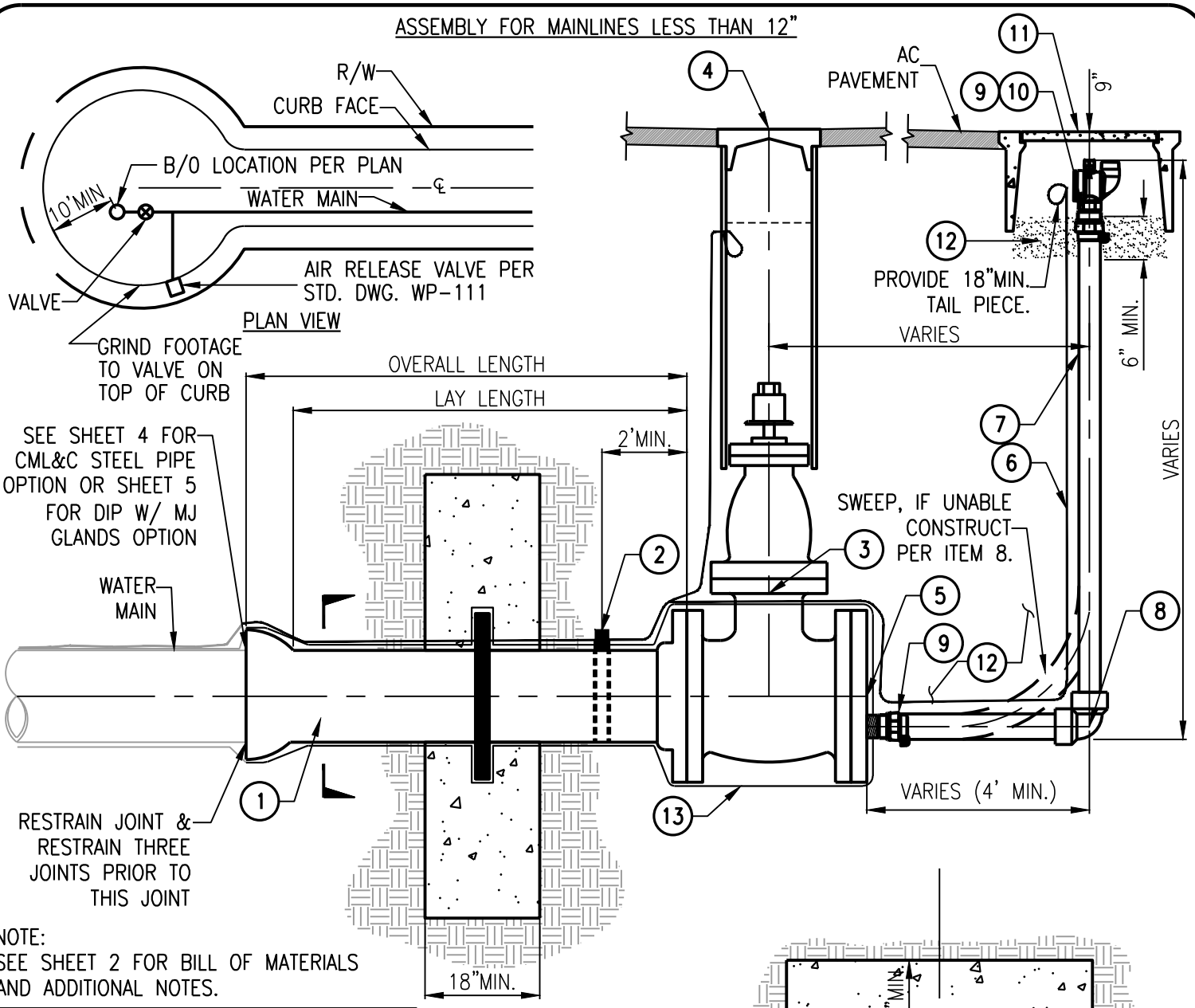
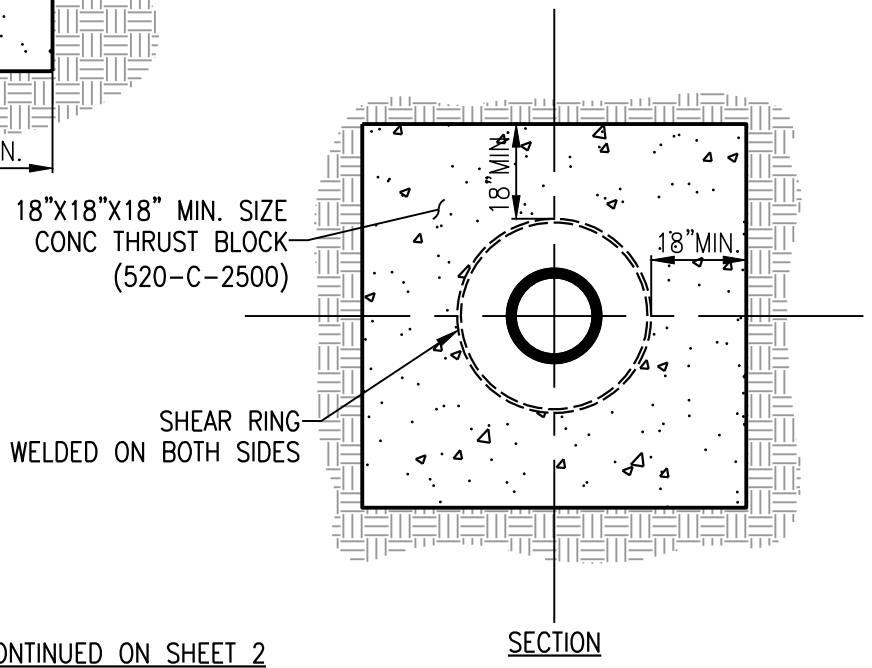
SHEET 2 OF 2

ASSEMBLY FOR MAINLINES LESS THAN 12"



NOTE:
SEE SHEET 2 FOR BILL OF MATERIALS AND ADDITIONAL NOTES.

SHEAR SPOOL TABLE (TYTONxFL)			
PIPE SIZE	OVERALL LENGTH	LAY LENGTH	SHEAR RING DIA (IN.)
8"	12'	8.25'	12.88
12"	12.25'	8.50'	17.19
16"	14.75'	9.75'	21.38
18"	14.75'	9.75'	23.38
20"	15.50'	10'	25.50
24"	16'	10'	31.63
30"	18'	11.50'	38



CONTINUED ON SHEET 2

BLOW-OFF AND SHEAR SPOOL ASSEMBLY (FULLY RESTRAINED)

SCV WATER

SANTA CLARITA VALLEY WATER AGENCY
ENGINEERING SERVICES SECTION

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CHIEF ENGINEER

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DATE

STD. DWG.
WP-113

REV. 1.0

ITEM	MATERIALS
1	DIP OR STEEL PIPE, DOUBLE CEMENT LINED AND COATED, SAME SIZE AS WATER MAIN.
2	AIR VALVE AND VACUUM ASSEMBLY, IF NEEDED, PER WP-111.
3	FLANGExFLANGE GATE VALVE (RESILIENT WEDGE), SAME SIZE AS MAIN.
4	VALVE SLIP CAN ASSEMBLY PER STD. DWG. WP-108A/B/C.
5	STEEL BLIND FLANGE W/ 2" FIPT OUTLET AT FLOW LINE. SAME SIZE AS VALVE.
6	BLUE LOCATING WIRE, 12 GAUGE HMWPE SOLID STRAND WITH 3M GREASE TUBE NUT (DBR/Y6) OR EQUAL. USE PURPLE LOCATING WIRE FOR RECYCLED WATER MAINS.
7	2" MUNICIPEX-REHAU WITH INSERTS.
8	2"x90° COMPxCOMP CTS-PJ, WITH AGENCY APPROVAL ONLY.
9	2" MIPTxCOMP CTS-PJ COUPLING W/INSERT.
10	2" BALL VALVE FIPTxMIPT AND 2" FIPT BRASS CAP (FORD BLA18-777-TA-NL).
11	TRAFFIC RATED METER VAULT PER STD. DWG. WP-125C.
12	SAND BEDDING PER STD. DWG. NO. WP-101.
13	ONE LAYER OF POLYETHYLENE V-BIO FILM ENCASEMENT, OR AS APPROVED BY DIPRA. TAPE AT 24-INCHES W/ O.C. 3-INCH 10-MIL TAPE. FOR RECYCLED WATER (SEE NOTE 6) MAINS ADD ON LAYER OF PURPLE 8-MIL POLYETHYLENE ENCASEMENT OVER V-BIO FILM ENCASEMENT.
14	FLANGExFLANGE BUTTEFLY VALVE, SAME SIZE AS MAIN.
15	ECCENTRIC REDUCER, FLANGExFLANGE, W/BLIND FLANGE AND 2" TAP.

NOTES:

1. ALL MATERIALS SUPPLIED SHALL BE NEW, FREE OF DEFECTS AND MEET OR EXCEED AWWA SPECIFICATIONS.
2. THRUST BLOCK TO PIPE SIZE RATIO REFER TO STD. DWG. WP-102
3. MEET WITH SCVWA INSPECTOR PRIOR TO AIR RELEASE VALVE ASSEMBLY INSTALLATION. SEE SCVWA STD. DWG. WP-111.
4. WALL COLLAR ON STEEL PIPE AND DIP (TYTONxFLANGE) OPTION SHALL BE WELDED ON BOTH SIDES.
5. ALL RUBBER MATERIAL MUST EPDM.
6. FOR RECYCLED WATER SYSTEMS USE 8-MIL POLYETHYLENE ENCASEMENT (HIGH DENSITY) AND SHALL BE PURPLE IN COLOR AND SHOULD BE LABELED "CAUTION, RECYCLED WATER, DO NOT DRINK" OR APPROVED EQUAL. BLOW-OFF AND SHEAR SPOOL ASSEMBLY SHALL BE LABELED "CAUTION, RECYCLED WATER, DO NOT DRINK" OR FOR RECYCLED WATER SYSTEMS.
7. TRENCH SHALL BE PER SCVWA. STD. DWG. WP-101.
8. A MINIMUM THREE JOINTS SHALL BE FULLY RESTRAINED PRIOR TO THIS ASSEMBLY.

CONTINUED ON SHEET 3

BLOW-OFF AND SHEAR SPOOL ASSEMBLY (FULLY RESTRAINED)

SCV WATER

SANTA CLARITA VALLEY WATER AGENCY
ENGINEERING SERVICES SECTION

APPROVED BY:

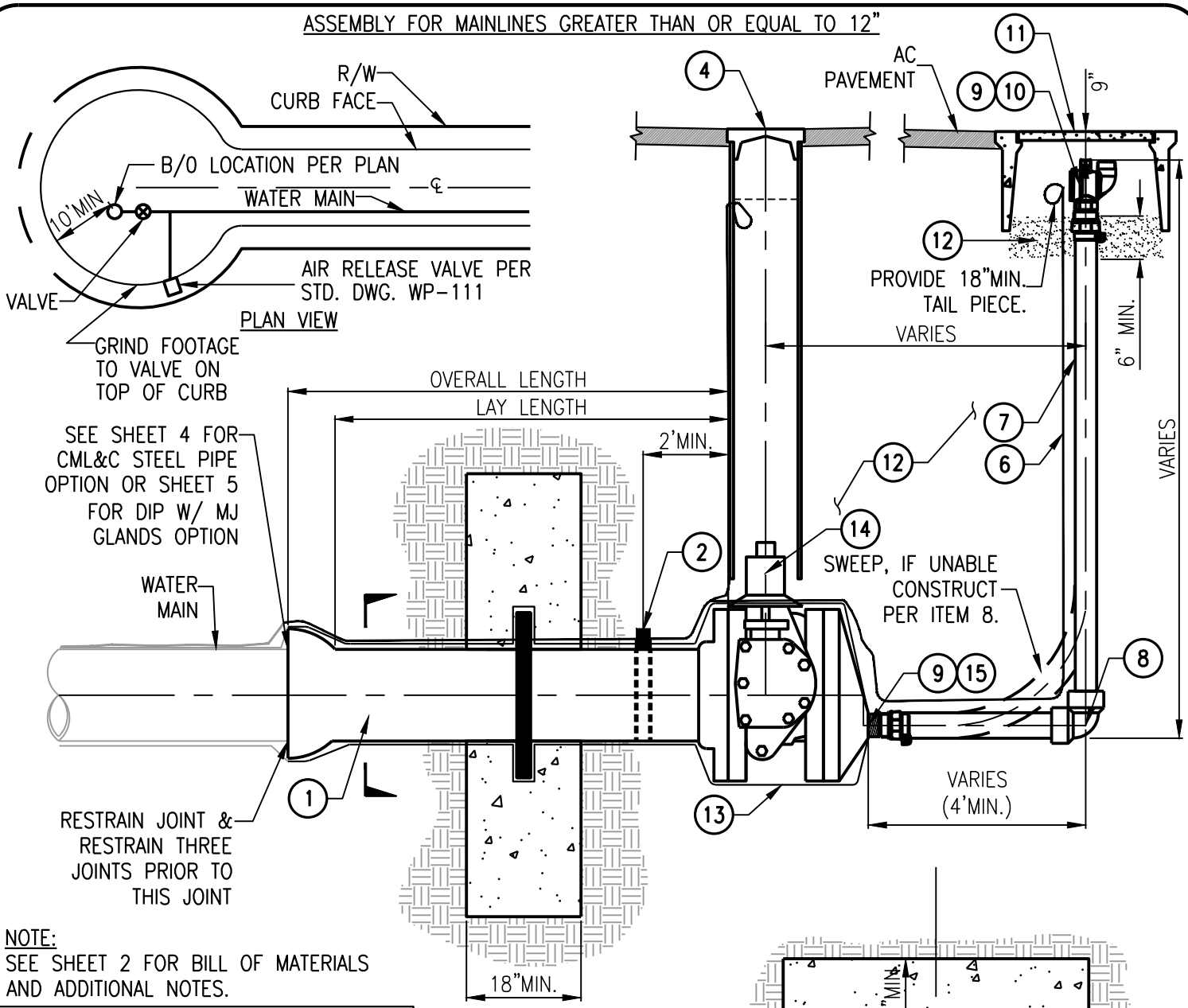
COURTNEY MAEL, P.E. 84647
CHIEF ENGINEER

7/20/2022
DATE

STD. DWG.
WP-113

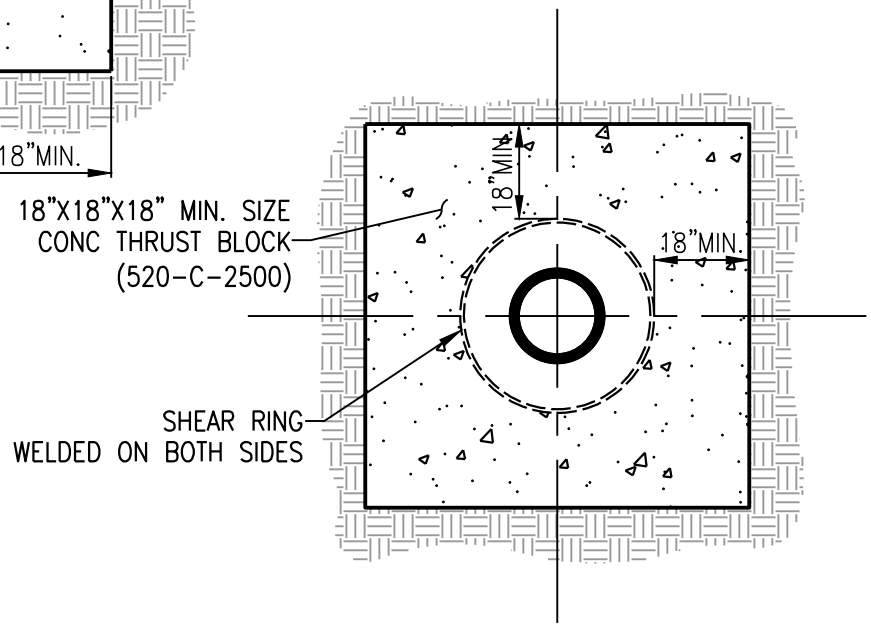
REV. 1.0

ASSEMBLY FOR MAINLINES GREATER THAN OR EQUAL TO 12"



NOTE:
SEE SHEET 2 FOR BILL OF MATERIALS AND ADDITIONAL NOTES.

SHEAR SPOOL TABLE (TYTONxFL)			
PIPE SIZE	OVERALL LENGTH	LAY LENGTH	SHEAR RING DIA (IN.)
8"	12'	8.25'	12.88
12"	12.25'	8.50'	17.19
16"	14.75'	9.75'	21.38
18"	14.75'	9.75'	23.38
20"	15.50'	10'	25.50
24"	16'	10'	31.63
30"	18'	11.50'	38



CONTINUED ON SHEET 4

BLOW-OFF AND SHEAR SPOOL ASSEMBLY (FULLY RESTRAINED)

SCV WATER

SANTA CLARITA VALLEY WATER AGENCY
ENGINEERING SERVICES SECTION

APPROVED BY:

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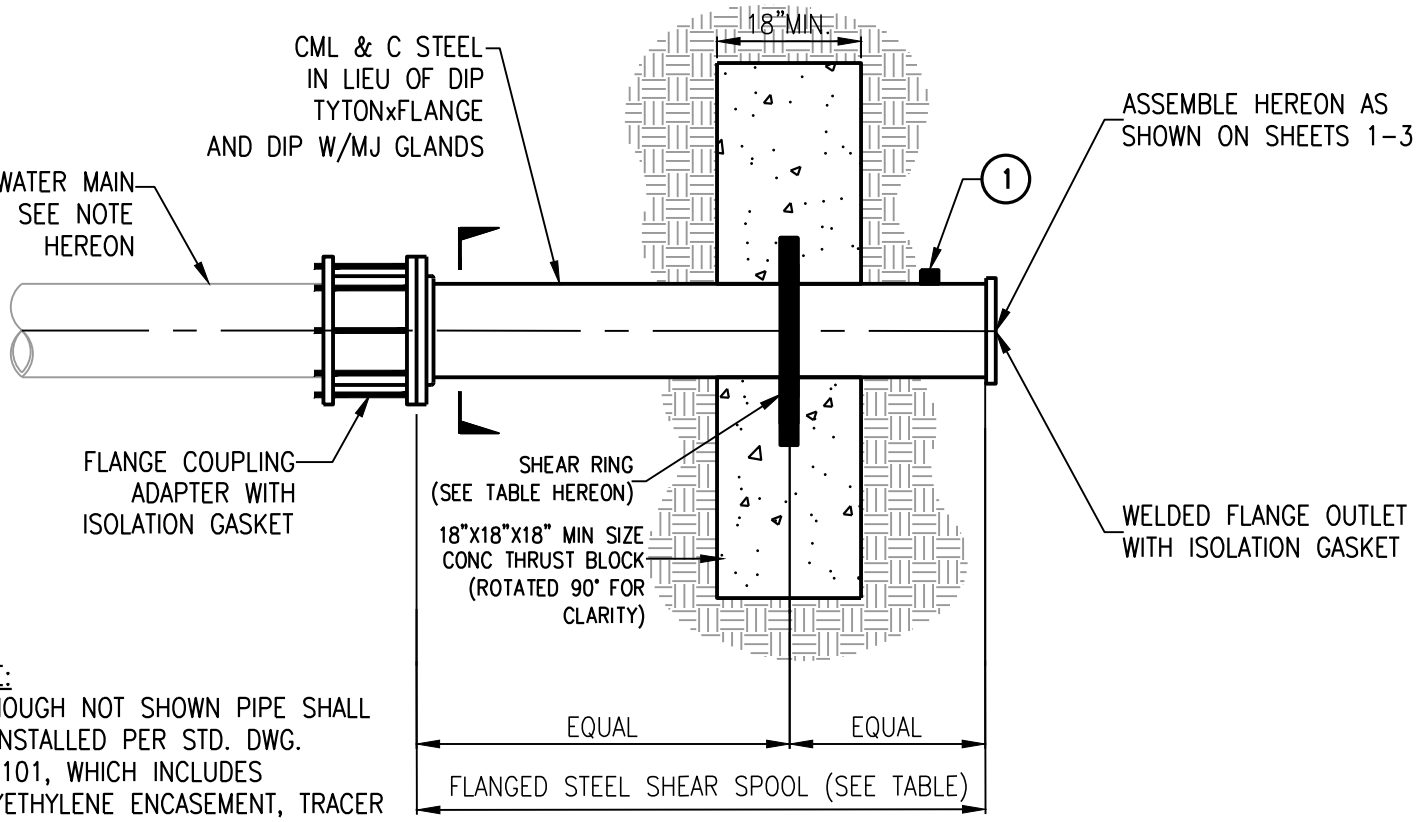
STD. DWG.
WP-113

REV. 1.0

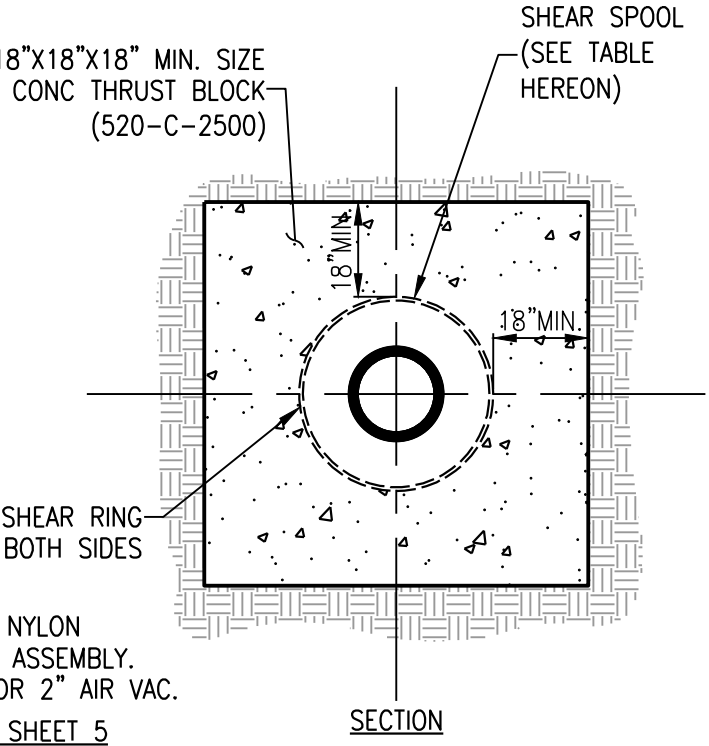
CML&C STEEL OPTION



NOTE:
ALTHOUGH NOT SHOWN PIPE SHALL BE INSTALLED PER STD. DWG. WP-101, WHICH INCLUDES POLYETHYLENE ENCASEMENT, TRACER WIRE, ETC.

SHEAR SPOOL					
PIPE SIZE	LENGTH	SHEAR RING DIA	THICKNESS	*LINING THICKNESS	SHEAR RING THICKNESS
6"	6'	14"	1/4"	1/4"	3/8"
8"	8'	18"	1/4"	1/4"	3/8"
12"	8'	24"	3/8"	3/8"	3/8"
16"	10'	34"	3/8"	3/8"	1/2"
18"	10'	38"	3/8"	3/8"	1/2"
20"	12'	42"	1/2"	1/2"	1/2"
24"	12'	50"	1/2"	1/2"	1/2"
30"	12'	62"	1/2"	1/2"	1/2"

*DOES NOT INCLUDE PIPE THICKNESS AND THICKNESS IS FOR ONE COAT.



ITEM — MATERIALS (THIS SHEET ONLY)

(1) WELD O LET FIPT MIPT X COMP CORP, USE INSULATION NYLON BUSHING. SEE SCVWA STD DWG. WP-111 FOR AIR VAC ASSEMBLY. 1.5" WELD O LET FOR 1" AIR VAC. 2.5" WELD O LET FOR 2" AIR VAC.

CONTINUED ON SHEET 5

BLOW-OFF AND SHEAR SPOOL ASSEMBLY (FULLY RESTRAINED)

SCV WATER

SANTA CLARITA VALLEY WATER AGENCY
ENGINEERING SERVICES SECTION

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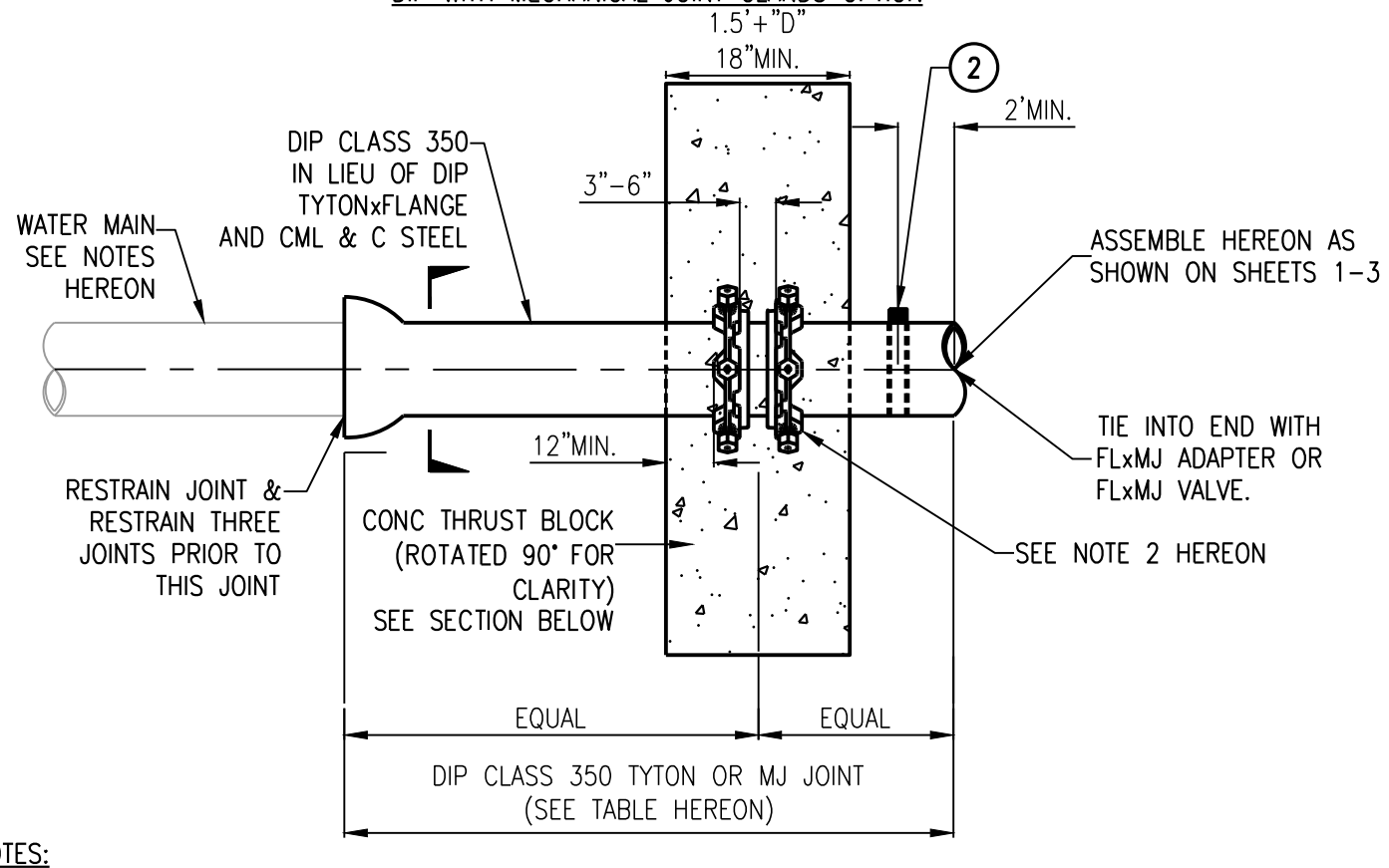
DATE

STD. DWG.
WP-113

REV. 1.0

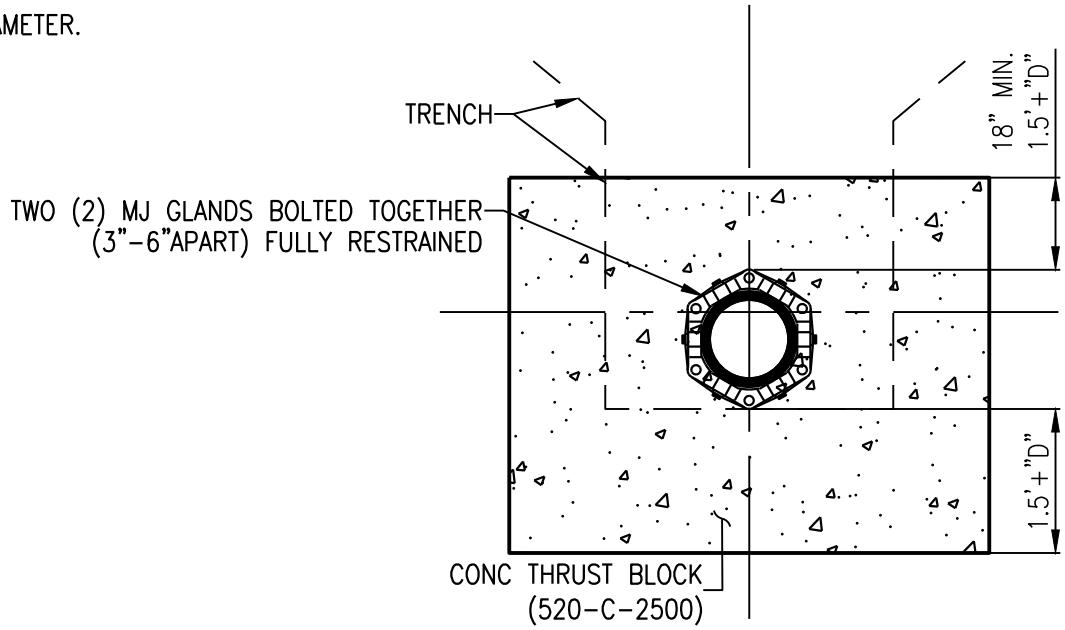
DIP WITH MECHANICAL JOINT GLANDS OPTION



NOTES:

1. ALTHOUGH NOT SHOWN PIPE SHALL BE INSTALLED PER STD. DWG. WP-101, WHICH INCLUDES POLYETHYLENE ENCASEMENT, TRACER WIRE, ETC.
2. TWO (2) MJ GLANDS BOLTED TOGETHER (3"-6"APART) FULLY RESTRAINED AND FULLY COATED W/BITUMASTIC.
3. SEE SHEET 2 FOR BILL OF MATERIALS AND ADDITIONAL NOTES.
4. "D" REFERS TO PIPE DIAMETER.

DIP TABLE	
PIPE SIZE "D"	LENGTH
6"	6'
8"	8'
12"	10'
16"	10'
18"	10'
20"	12'
24"	12'
30"	12'



SECTION

BLOW-OFF AND SHEAR SPOOL ASSEMBLY (FULLY RESTRAINED)

SCV WATER

SANTA CLARITA VALLEY WATER AGENCY
ENGINEERING SERVICES SECTION

APPROVED BY:

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7/20/2022
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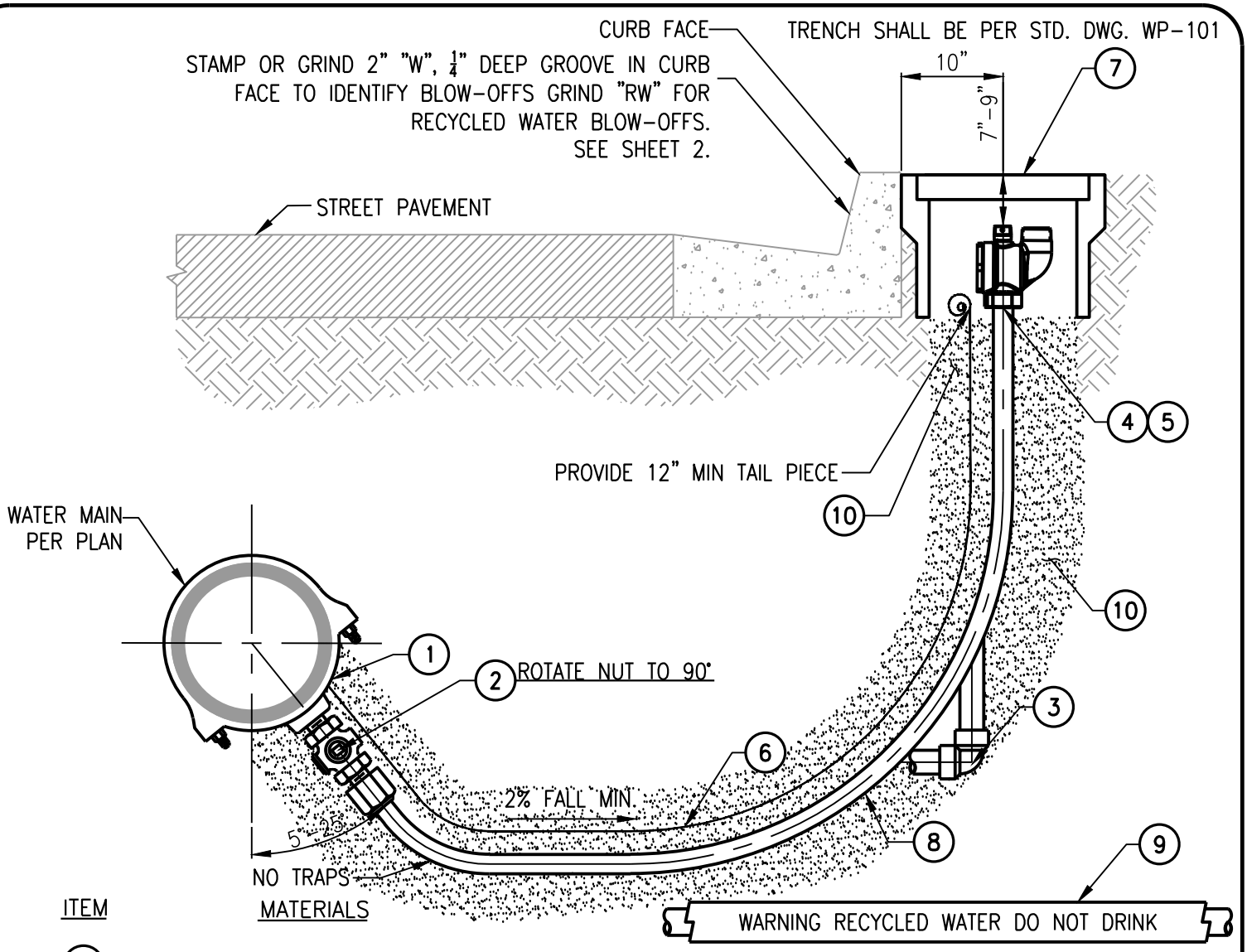
STD. DWG.
WP-113

REV. 1.0



ITEM	MATERIALS
1	SERVICE SADDLE PER PIPE MATERIAL, SEE TABLE HEREON.
2	2" MIPTxPJ CTS-PJ BALL TYPE, CORPORATION STOP.
3	2"x90° COMPxCOMP CTS-PJ FOR 2" SERVICE (AT DISCRETION OF THE AGENCY).
4	2" MIPTxCOMP CTS-PJ, COUPLING.
5	2" BALL VALVE FIPTxMIPT, FORD BLA-18-777-TA-NL W/2" BRASS FIPT CAP.
6	BLUE LOCATING WIRE, 12 GAUGE HMWPE SOLID STRAND WITH 3M GREASE TUBE NUT (DBR/Y6) OR EQUAL. USE PURPLE LOCATING WIRE FOR RECYCLED WATER MAINS. USE PURPLE LOCATING WIRE FOR RECYCLED WATER MAINS.
7	ARMORCAST BOX AND LID PER SCVWA. STD. DWG. NO. WP-125A.
8	2" MUNICIPEX-REHAU WITH 2" INSERTS. BLUE FOR POTABLE WATER AND PURPLE FOR RECYCLED WATER (IF AVAILABLE).
9	RECYCLED WATER SERVICES SHALL BE ENCASED IN A PURPLE SLEEVE AND LABELED AS SHOWN HEREON.
10	ADD BED & FILL WITH SAND FROM WATER MAIN TO METER, 6" COVER.

CONTINUED ON SHEET 2

2" BLOW-OFF ASSEMBLY

SCV WATER

SANTA CLARITA VALLEY WATER AGENCY
ENGINEERING SERVICES SECTION

APPROVED BY:

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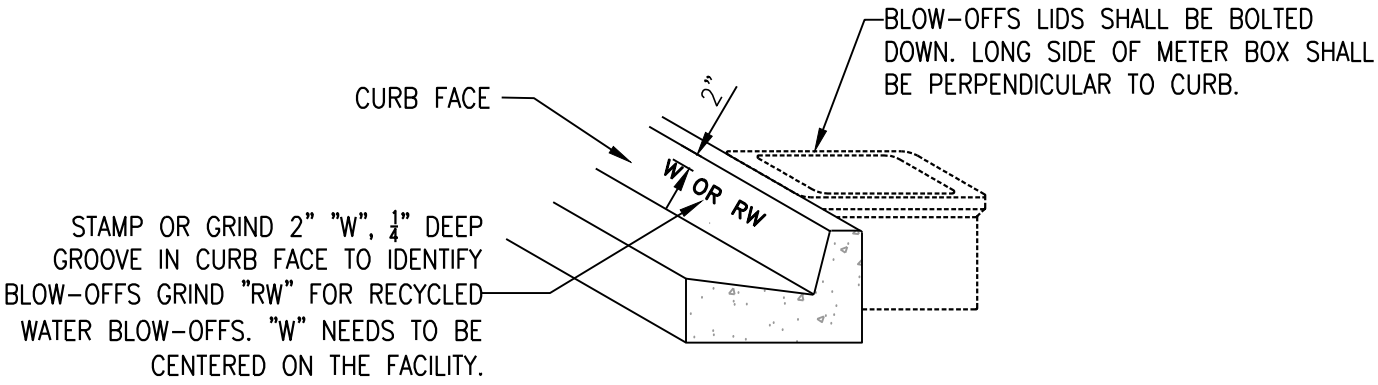
7/20/2022
DATE

STD. DWG.
WP-114

REV. 1.0



CURB FACE IDENTIFICATION DETAIL

PIPE TYPE	SADDLE/OUTLET TYPE
*ACP (ASBESTOS CEMENT PIPE)	1"-2" FORD #202B SERIES
*C-900 (POLYVINYL CHLORIDE PIPE)	1"-2" ROMAC STYLE 202B W/EDPM
DIP (DUCTILE IRON PIPE)	1"-2" FORD #202B SERIES
STEEL PIPE	1"-2" WELD O LET (COAT WITH BITUMASTIC AFTER INSTALL)
CML&S	1"-2" WELD O LET (MORTAR AFTER INSTALL)

OR EQUAL EPDM
*ONLY APPLIES WHEN INSTALLING A NEW SERVICE ON AN EXISTING WATER SYSTEM.

NOTES:
1. ALL MATERIALS SUPPLIED SHALL BE NEW, FREE OF DEFECTS AND MEET OR EXCEED AWWA SPECIFICATIONS.
2. INSTALL BLOW-OFF AT ALL LOW POINTS PER SCVWA SPECIFICATIONS OR AT DISCRETION OF THE AGENCY.
3. ALL SPLICED CONNECTIONS SHALL BE MADE USING A WIRE NUT, GREASE CAP, 3M (DBR/Y6) OR EQUAL.
4. ALL PIPES, FITTINGS, AND FIXTURES CONVEYING WATER SHALL BE "LEAD FREE" AS DEFINED BY AB 1953.
5. ALL RUBBER/GASKET MATERIAL MUST BE EPDM.
6. IF BLOW-OFF IS IN A TRAFFIC AREA/STREET USE BLOW-OFF TRAFFIC BOX, PER SCVWA STD. DWG. NO. WP-125C.
7. BACKFILL TRENCH PER SERVICE STD. DWG WP.109.

2" BLOW-OFF ASSEMBLY

SCV WATER

SANTA CLARITA VALLEY WATER AGENCY
ENGINEERING SERVICES SECTION

APPROVED BY:

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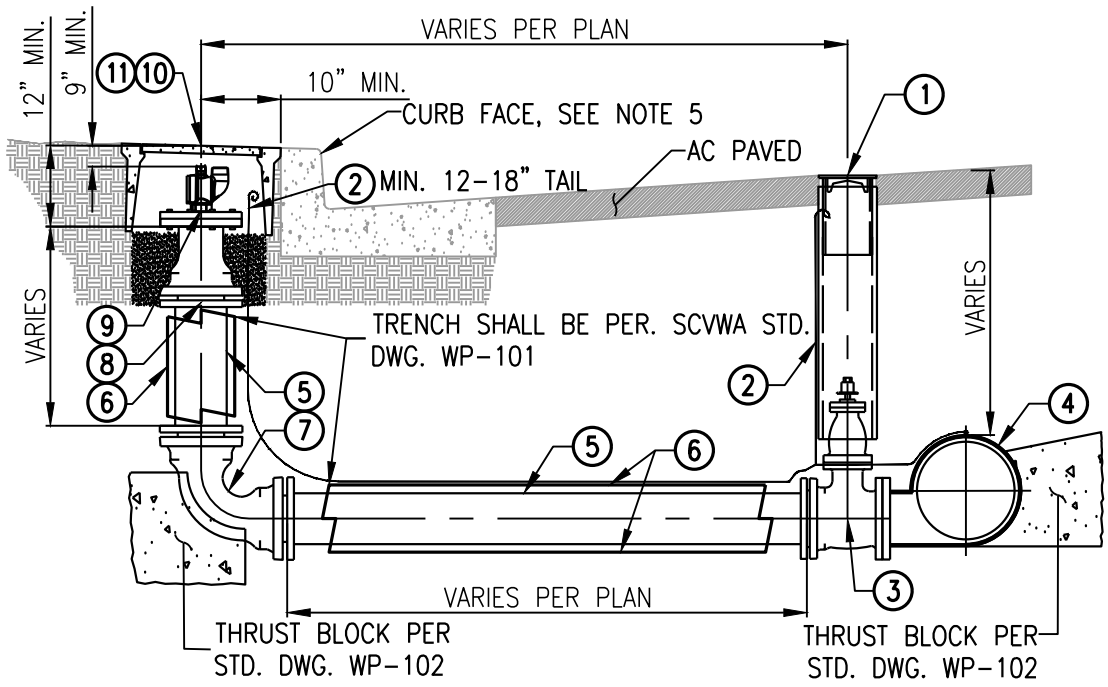
CHIEF ENGINEER

7/20/2022
DATE

STD. DWG.
WP-114

REV. 1.0



ITEM	MATERIALS
1	VALVE LID SLIP CAN PER STD. DWG. 108A/B/C. LABELED "WATER B/O".
2	BLUE LOCATING WIRE, 12 GAUGE HMWPE SOLID STRAND WITH 3M GREASE TUBE NUT (DBR/Y6) OR EQUAL. USE PURPLE LOCATING WIRE FOR RECYCLED WATER.
3	6" FLxMJ (RESILIENT WEDGE) GATE VALVE, RESTRAINED.
4	MJxFL ECCENTRIC TEE, RESTRAINED WITH 6" OUTLET (SHOWN). SEE DETAIL OF OPTION 2 ON SHEET 2.
5	6" DIP CL 350 RESTRAINED MECHANICAL JOINT, LENGTH VARIES PER PLAN.
6	ENCASE PIPE AND FITTINGS WITH ONE LAYER OF V-BIO POLYETHYLENE FILM. USE PURPLE 8-MIL POLYETHYLENE FILM FOR RECYCLED WATER SERVICES TO BE WRAPPED OVER V-BIO FILM.
7	6"x90° DI FITTING MJxMJ, RESTRAINED.
8	6"x4" DI REDUCER MJxFL, RESTRAINED.
9	4" STEEL BLIND FLANGE WITH 2" TAP FIPT.
10	2" BRASS MIPTxMIPT NIPPLE AND 2" BALL VALVE (FIPTxMIPT) AND 2" BRASS CAP.
11	METER BOX PER SCVWA STD. NO. 125B OR 125C IF SET IN TRAFFIC AREAS, LABELED "SCVWA B/O". FOR RECYCLED WATER, BLOW-OFFS METER BOXES SHALL BE LABELED AS "RECYCLED WATER B/O"

CONTINUED ON SHEET 2

4" BLOW-OFF ASSEMBLY (FULLY RESTRAINED)

SCV WATER

SANTA CLARITA VALLEY WATER AGENCY
ENGINEERING SERVICES SECTION

APPROVED BY:

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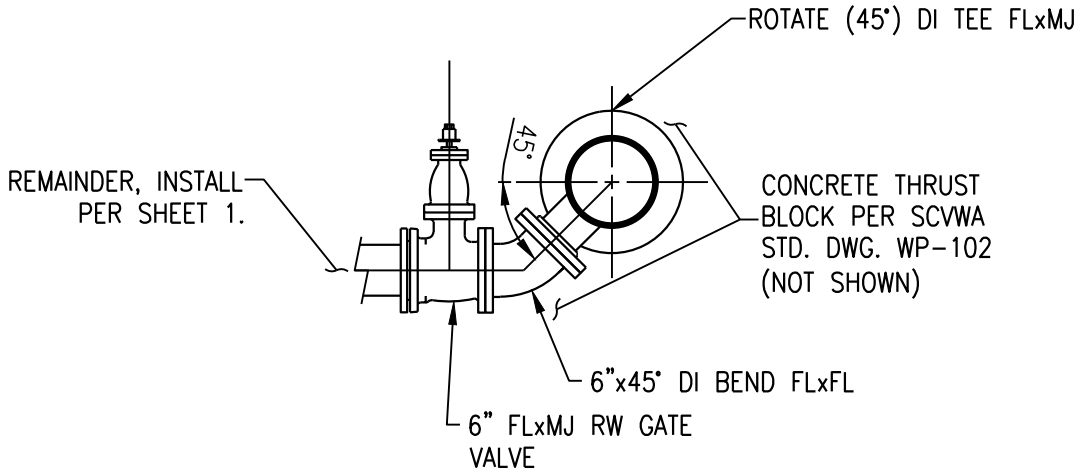
CHIEF ENGINEER

7/20/2022
DATE

STD. DWG.
WP-115

REV. 1.0

OPTION 2 (IN-LIEU OF ECCENTRIC TEE)
MUST HAVE AGENCY APPROVAL PRIOR
TO CHOOSING OPTION 2.



NOTES:

1. ALL MATERIALS WILL MEET OR EXCEED AWWA SPECIFICATIONS.
2. BITUMASTIC PROTECTIVE COATING SHALL BE APPLIED TO ALL FITTINGS, NUTS, AND BOLTS.
3. ALL RUBBER/GASKET MATERIAL MUST BE E.P.D.M.
4. INSTALL BLOW-OFF AT ALL LOW POINTS PER SCVWA SPECIFICATIONS.
5. CHISEL A 2" HIGH "V", "ARROW", AND "DISTANCE TO VALVE" ON TOP OF CURB AT RIGHT ANGLES TO PIPELINE AXIS, ARROW SHALL POINT TO DIRECTION OF VALVE LOCATION. SEE STD. DWG. WP-149.
6. TRENCH SHALL BE PER STD. DWG. WP-101.
7. OPTION 2 REQUIRES AGENCY APPROVAL PRIOR TO INSTALLING.

4" BLOW-OFF ASSEMBLY (FULLY RESTRAINED)

SCV WATER

SANTA CLARITA VALLEY WATER AGENCY
ENGINEERING SERVICES SECTION

APPROVED BY:

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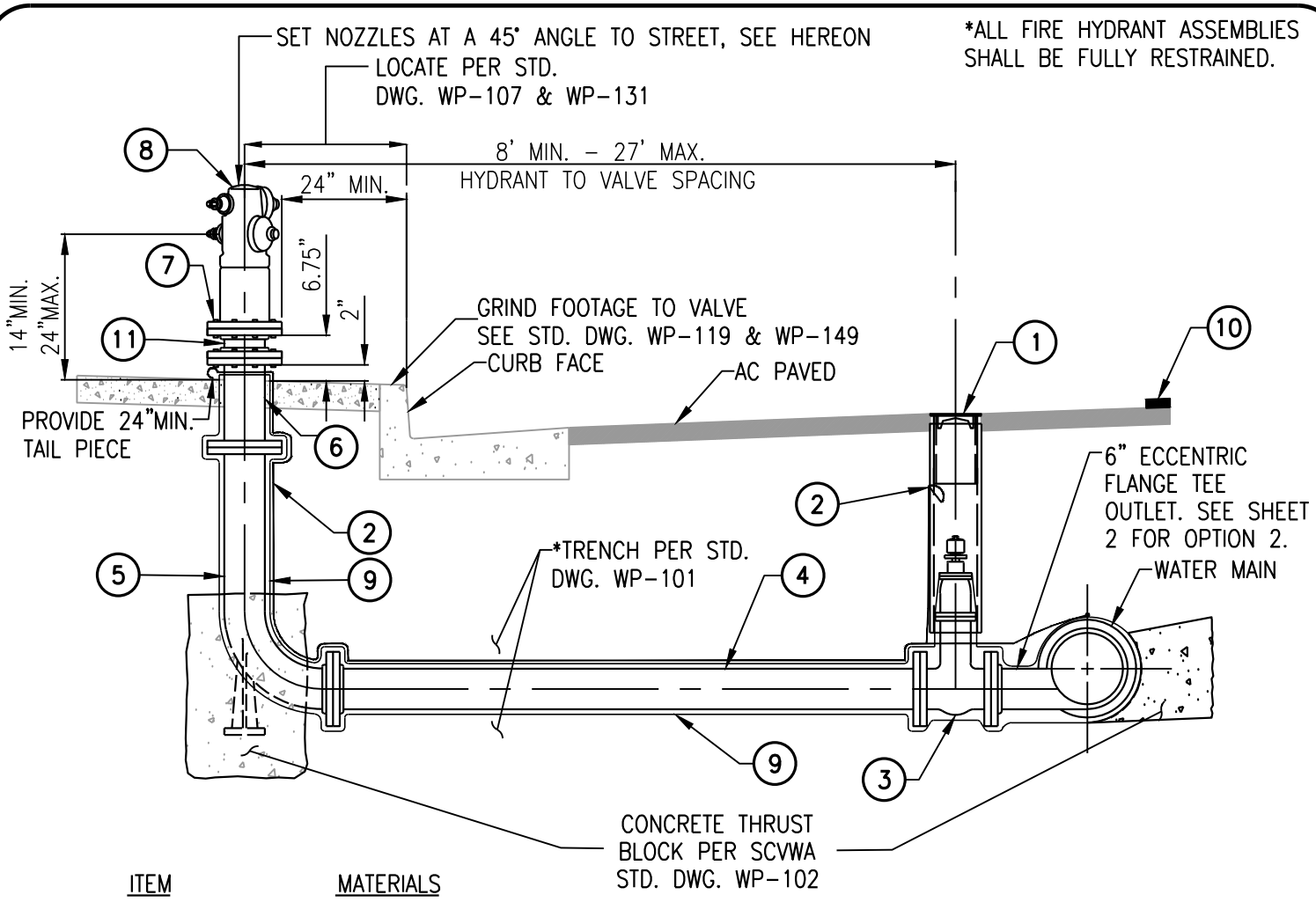
CHIEF ENGINEER

7/20/2022
DATE

STD. DWG.
WP-115

REV. 1.0

SHEET 2 OF 2



ITEM	MATERIALS
1	VALVE LID SLIP CAN PER STD. DWG. WP-108A/B/C. VALVES SHALL BE 8' MIN.-27' MAX. FROM C.L. HYDRANT. INSTALL TWO VALVES IF DISTANCE FROM MAIN IS GREATER THAN 25'.
2	BLUE LOCATING WIRE, 12 GAUGE HMWPE SOLID STRAND WITH 3M GREASE TUBE NUT (DBR/Y6) OR EQUAL. TAPE WIRE AT 24" INTERVALS.
3	6" FLANGED OR MECHANICAL JOINT GATE VALVE (RESILIENT WEDGE) WITH OPERATING NUT.
4	6" DIP CLASS 350 RESTRAINED MECHANICAL JOINT.
5	6" DIP FIRE HYDRANT BURY-FLANGED OR CUT TO FIT PIPE WITH RESTRAINED FITTINGS.
6	6", 8-HOLE FL HYDRANT BURY EXTENSION, LENGTH TO BE FIELD VERIFIED BY CONTRACTOR.
7	8 HOLE FLANGES SHALL HAVE TRAFFIC BOLTS 3/4"x3-1/4", WITH HEADS ON TOP.
8	6"x4"x2-1/2" FIRE HYDRANT, CLOW 850 OR JONES J-4040BRE (EPDM) DI 8 HOLE. COLOR SHALL BE "ANSI/OSHA SAFETY YELLOW".
9	ENCASE FERROUS PIPE AND FITTINGS WITH ONE LAYER OF V-BIO FILM OR DIPRA APPROVED.
10	BLUE REFLECTOR, SEE NOTE 10 HEREON.
11	PROVIDE 8-HOLE JONES 6000 BREAK CHECK VALVE OR APPROVED EQUAL.

CONTINUED ON SHEET 2

6" FIRE HYDRANT BLOW-OFF ASSEMBLY (FULLY RESTRAINED)

SCV WATER

SANTA CLARITA VALLEY WATER AGENCY
ENGINEERING SERVICES SECTION

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CHIEF ENGINEER

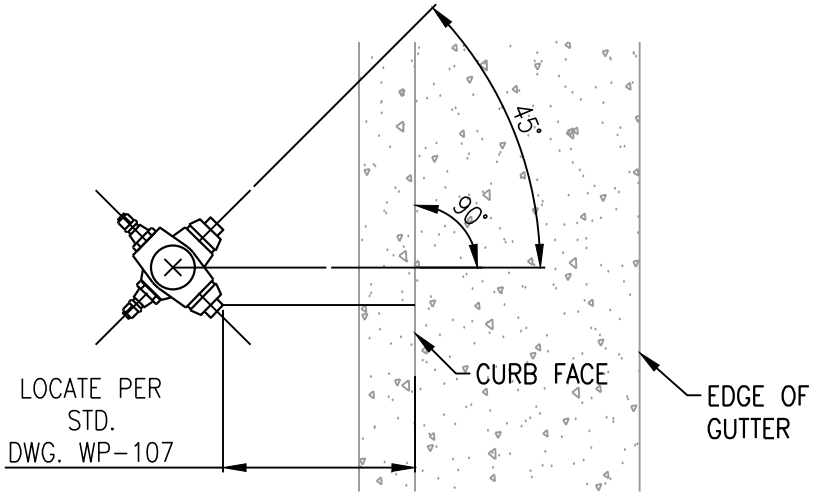
7/20/2022
DATE

STD. DWG.
WP-116

REV. 1.0

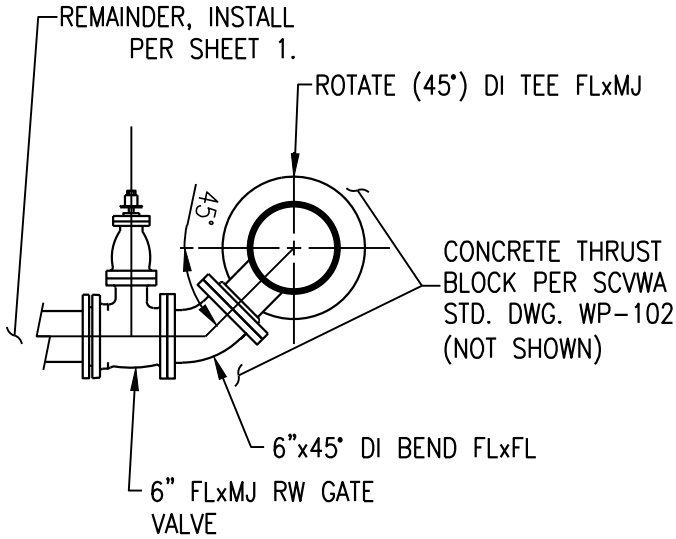
NOTES:

1. ALL MATERIALS SUPPLIED BY SCVWA OR OTHERS SHALL MEET OR EXCEED AWWA SPECIFICATIONS.
2. FIRE HYDRANT SHALL BE COATED "ANSI/OSHA SAFETY YELLOW".
3. FIRE HYDRANT SHALL BE AFFIXED TO TRAFFIC BOLTS (BOLT HEAD MUST BE ON TOP).
4. PROVIDE GUARD POSTS PER STD. DWG. WP-106A/B OR AS REQUIRED BY THE AGENCY INSPECTOR.
5. DOUBLE OUTLET HYDRANTS SHALL BE INSTALLED WITH OUTLETS FACING CURB AT A 45 DEGREE ANGLE TO THE CURB LINE, SEE HEREON.
6. PROVIDE A THREE FOOT UNOBSTRUCTED CLEARANCE ON ALL SIDES OF FIRE HYDRANT.
7. BITUMASTIC PROTECTIVE COATING OR APPROVED EQUAL SHALL BE APPLIED TO ALL FITTINGS, NUTS, AND BOLTS.
8. ALL RUBBER/GASKET MATERIAL SHALL BE E.P.D.M INCLUDING NON-ASBESTOS RING GASKETS FOR FLANGE FITTINGS.
9. ALL AC PAVEMENT, CURB, GUTTER AND SIDEWALK SHALL BE REPLACED PER CITY, COUNTY OR CALTRANS STANDARDS/REQUIREMENTS.
10. THE CONTRACTOR SHALL INSTALL REFLECTORIZED, RAISED PAVEMENT MARKERS (STIMSONITE HYDRANT SPOTTER), ALSO CALLED "BLUE DOTS" AND A TWO PART EPOXY ADHESIVE SHALL BE USED TO INSTALL THE MARKERS. ONE MARKER SHALL BE INSTALLED OPPOSITE EACH FIRE HYDRANT, APPROXIMATELY 6 INCHES OFFSET FROM STREET CENTERLINE ON THE HYDRANT SIDE OF THE STREET.
11. DETECTABLE UNDERGROUND WARNING TAPE SHALL BE INSTALLED AT ALL FIRE HYDRANT RUNS. TRENCH SHALL BE PER STD. DWG. NO. WP-101.
12. ALL HYDRANT BURY'S, INCLUDING HYDRANT BURY EXTENSIONS SHALL BE ASPHALTIC SEAL COATED AND DOUBLE CEMENT LINED.
13. ALL PIPE AND FITTINGS SHALL BE FULLY RESTRAINED.
14. INSTALL BLOW-OFF AT ALL LOW POINTS PER SCVWA SPECIFICATIONS.
15. VALVE LID MUST BE SAFETY YELLOW AND LABELED "WATER B/O" PER STD. DWG. WP-149.
16. GRIND VALVE OFFSET FOOTAGE ON TOP OF CURB PER STD. DWG. WP-149.



TOP VIEW

LOCATE HYDRANT AS SHOWN
N.T.S



OPTION 2 (IN-LIEU OF ECCENTRIC TEE)
MUST HAVE AGENCY APPROVAL PRIOR TO CHOOSING OPTION 2.

6" FIRE HYDRANT BLOW-OFF ASSEMBLY

SCV WATER

SANTA CLARITA VALLEY WATER AGENCY
ENGINEERING SERVICES SECTION

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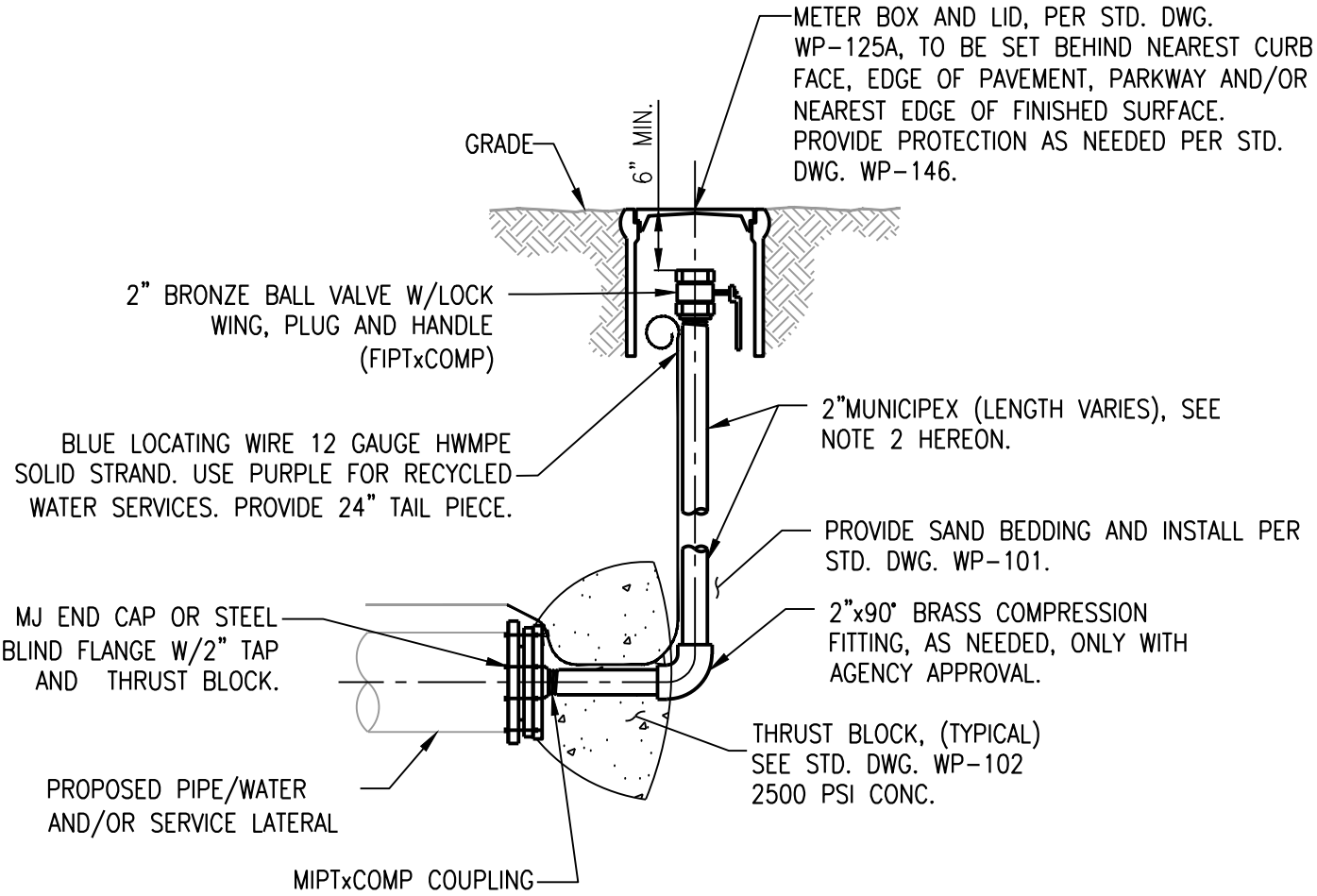
7/20/2022
DATE

STD. DWG.
WP-116

REV. 1.0

SHEET 2 OF 2



NOTES:

1. ALL BRASS FITTINGS MUST BE NO LEAD.
2. FOR RECYCLED WATER BLOW-OFF PROVIDE PURPLE MUNICIPEX AND ENCASE IN A PURPLE SLEEVED AND LABELED "WARNING","RECYCLED WATER", "DO NOT DRINK".

TEMPORARY 2-INCH BLOW-OFF

SCV WATER

SANTA CLARITA VALLEY WATER AGENCY
ENGINEERING SERVICES SECTION

APPROVED BY:

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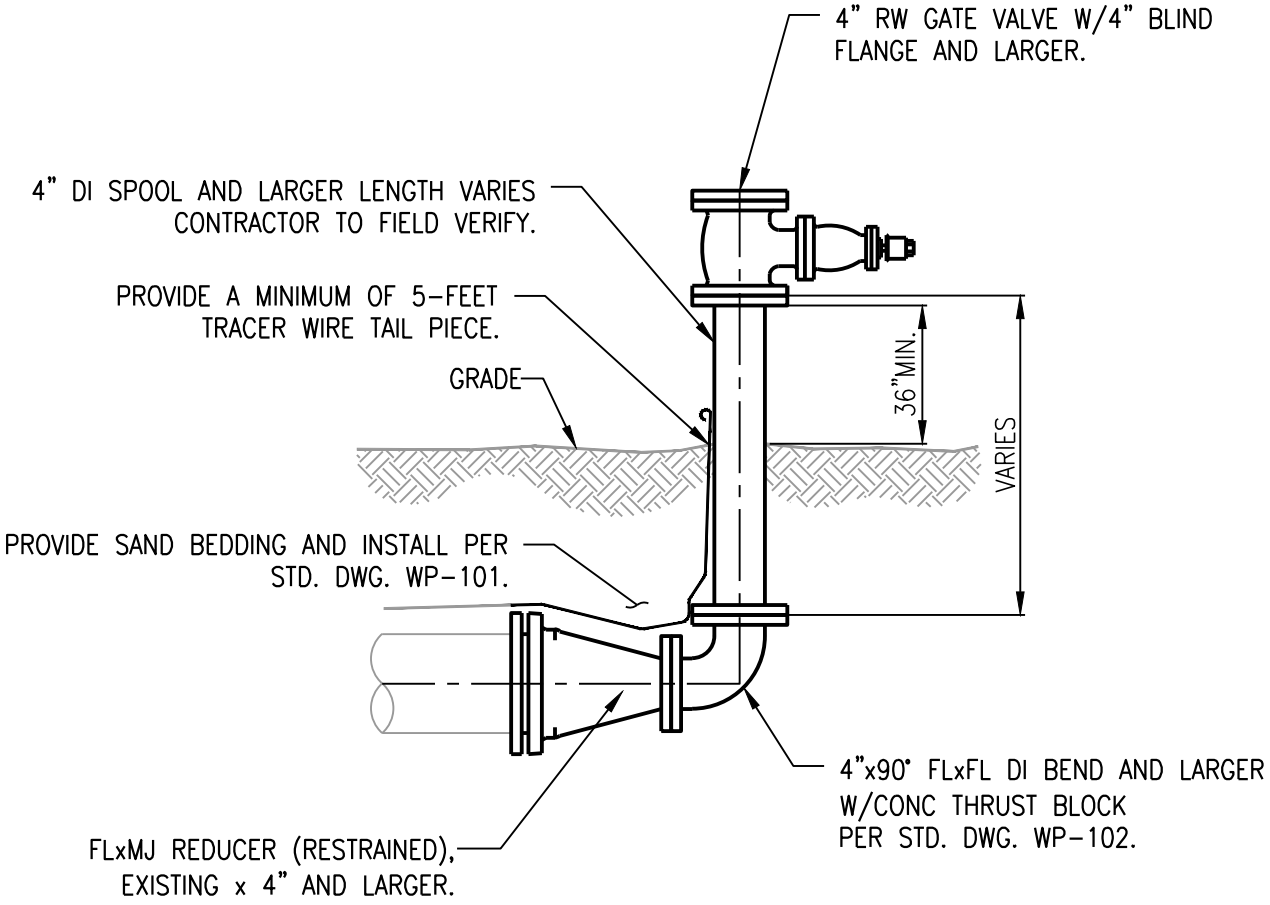
CHIEF ENGINEER

DATE

STD. DWG.
WP-117A

REV. 1.0

SHEET 1 OF 1



NOTES:

1. ASSEMBLY SHOWN HEREON DEPICTS A 4" BLOW-OFF, LARGER BLOW-OFFS SHALL BE ASSEMBLED IN THE SAME MANNER.
2. TRENCH, POLYETHYLENE ENCASEMENT AND TRACER WIRE SHALL BE PER STANDARD DRAWING WP-101.
3. PROVIDE NECESSARY PROTECTION PER STANDARD DRAWING WP-146.

TEMPORARY 4-INCH OR LARGER BLOW-OFF

SCV WATER

SANTA CLARITA VALLEY WATER AGENCY
ENGINEERING SERVICES SECTION

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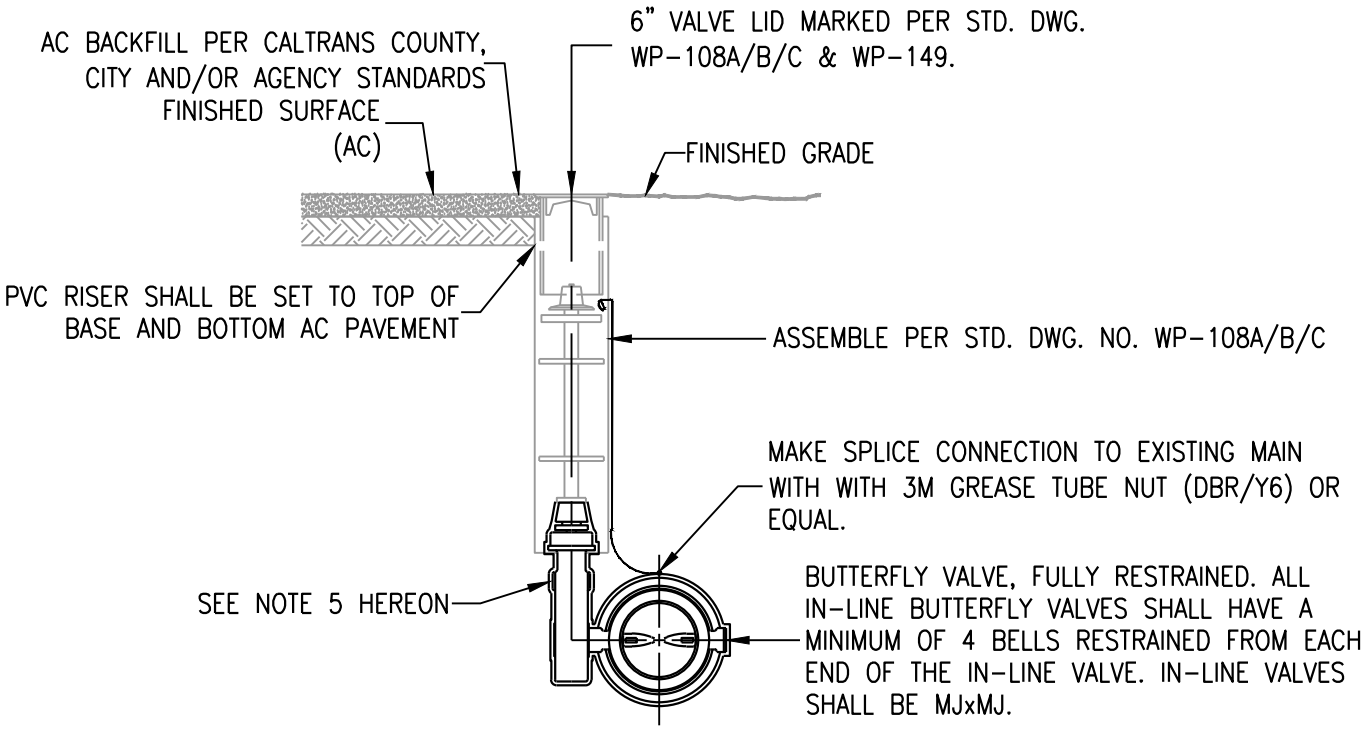
7/20/2022
DATE

STD. DWG.
WP-117B

REV. 1.0

SHEET 1 OF 1

TYPICAL NEW INSTALLATION



NOTES:

1. EXTENSION SHAFT, FITTED WITH SELF CENTERING DEVICE AND ADAPTER SHALL BE PROVIDED WHEN COVER OVER VALVE EXCEEDS 4 FEET.
2. GRIND A 2"x2" HIGH "V", "ARROW", AND "DISTANCE TO VALVE" ON TOP OF CURB AT RIGHT ANGLES TO PIPELINE AXIS, ARROW SHALL POINT TO DIRECTION OF VALVE LOCATION. FOR RECYCLED WATER VALVES ADD AN "R" IN FRONT OF THE "V", WHICH SHALL BE GRINDED AS "RV" SEE STD. DWG. WP-149.
3. VALVE THRUST & SUPPORT TO BE AS SHOWN ON THE PLANS.
4. BUTTERFLY VALVES SHALL BE USED FOR WATER MAINS 12" OR LARGER AND WHEN DEPTH OF PROPOSED VALVE IS 30" OR LESS.
5. ALL NUTS AND BOLTS SHALL BE COATED WITH BITUMASTIC AND WRAPPED IN ONE LAYER OF V-BIO FILMS. FORE RECYCLED WATER VALVES, THEY SHOULD BE WRAPPED WITH ONE LAYER OF PURPLE POLYETHYLENE FILM, WHICH SHALL GO OVER THE V-BIO FILM LAYER.
6. TRENCH BACKFILL SHALL BE PER STD. DWG. WP-101.

TYPICAL BUTTERFLY VALVE INSTALLATION (FULLY RESTRAINED)

SCV WATER

SANTA CLARITA VALLEY WATER AGENCY
ENGINEERING SERVICES SECTION

APPROVED BY:

COURTNEY MAEL, P.E. 84647
CHIEF ENGINEER

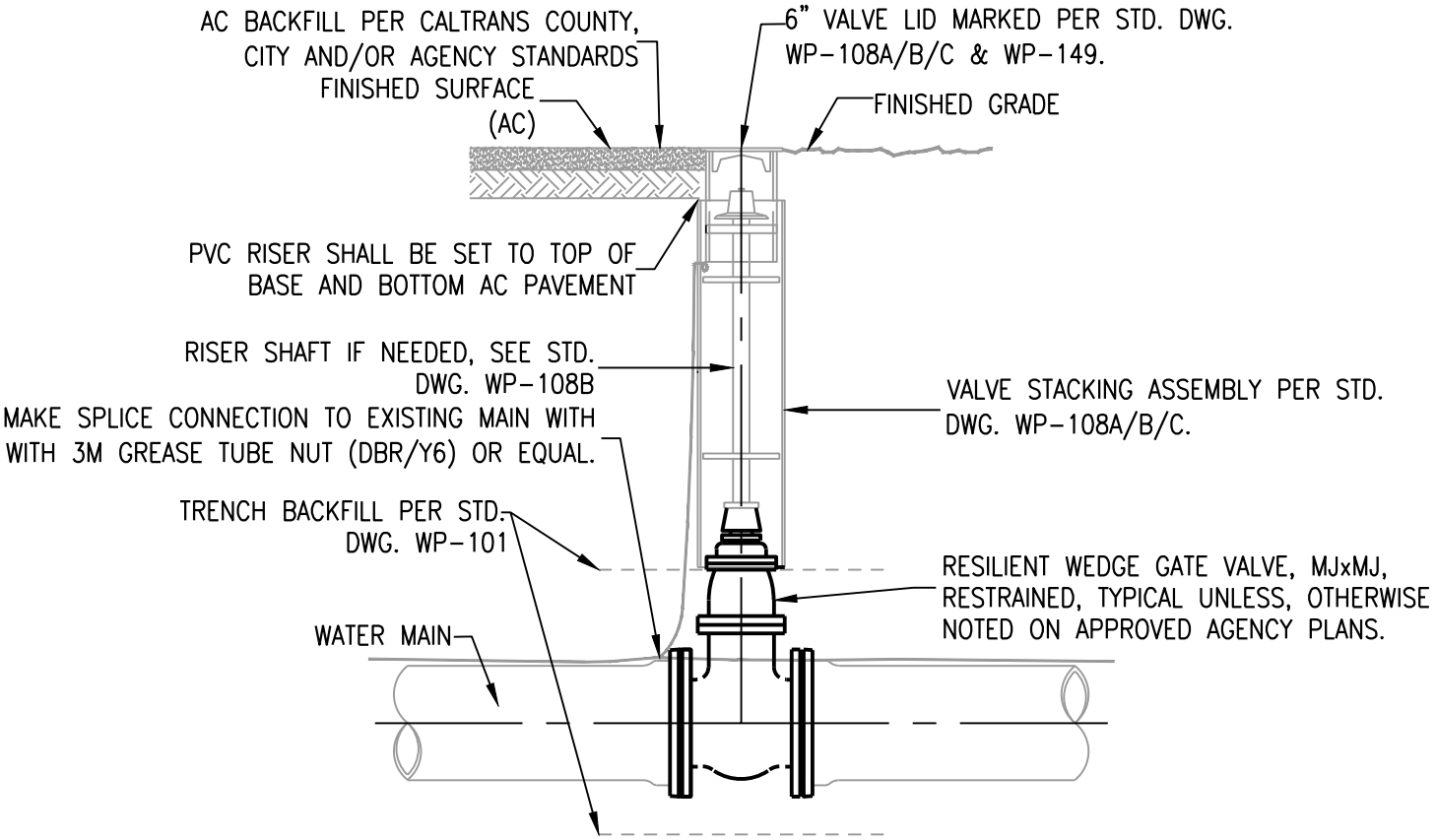
7/20/2022
DATE

STD. DWG.
WP-118

REV. 1.0

SHEET 1 OF 1

TYPICAL NEW INSTALLATION



NOTES:

1. EXTENSION SHAFT, FITTED WITH SELF CENTERING DEVICE AND ADAPTER SHALL BE PROVIDED WHEN COVER OVER VALVE EXCEEDS 4 FEET.
2. STAMP OR GRIND A 2"x2" HIGH "V", "ARROW", AND "DISTANCE TO VALVE" ON TOP OF CURB AT RIGHT ANGLES TO PIPELINE AXIS, ARROW SHALL POINT TO DIRECTION OF VALVE LOCATION SEE STD. DWG. WP-149.
3. VALVE THRUST & SUPPORT TO BE AS SHOWN ON THE PLANS.
4. GATE VALVES SHALL BE USED FOR WATER MAINS 10" OR SMALLER AND SHALL NOT BE SMALLER THAN 6" UNLESS OTHERWISE SPECIFIED ON WATER PLAN.
5. WRAP VALVE IN ONE LAYER OF V-BIO FILM. FORE RECYCLED WATER VALVES, THEY SHOULD BE WRAPPED WITH ONE LAYER OF PURPLE POLYETHYLENE FILM, WHICH SHALL GO OVER THE V-BIO FILM LAYER.
6. IN ADDITION TO A THRUST BLOCK, VALVE SHALL BE FULLY RESTRAINED, AT A MINIMUM OF FOUR FULL JOINTS ON BOTH SIDES OF THE VALVE.
7. ALL RUBBER MUST BE E.P.D.M.
8. ALL NUTS AND BOLTS SHALL BE COATED WITH BITUMASTIC. FLANGE GASKETS SHALL BE 1/16" "NONE-ASBESTOS" W/EPDM BINDERS OR APPROVED EQUAL. BOLTS SHALL BE STANDARD SQUARE HEAD MACHINE PER ASTM A-307 WITH GRADE "B" NUTS, HEXAGON, COLD PRESS SEMI-FINISHED STEEL PER ASTM A-194, GRADE "2H".
9. IF DEPTH OF GATE VALVE IS LESS THAN 30" A BUTTERFLY VALVE SHALL BE USED.

TYPICAL GATE VALVE INSTALLATION (FULLY RESTRAINED)

SCV WATER

SANTA CLARITA VALLEY WATER AGENCY
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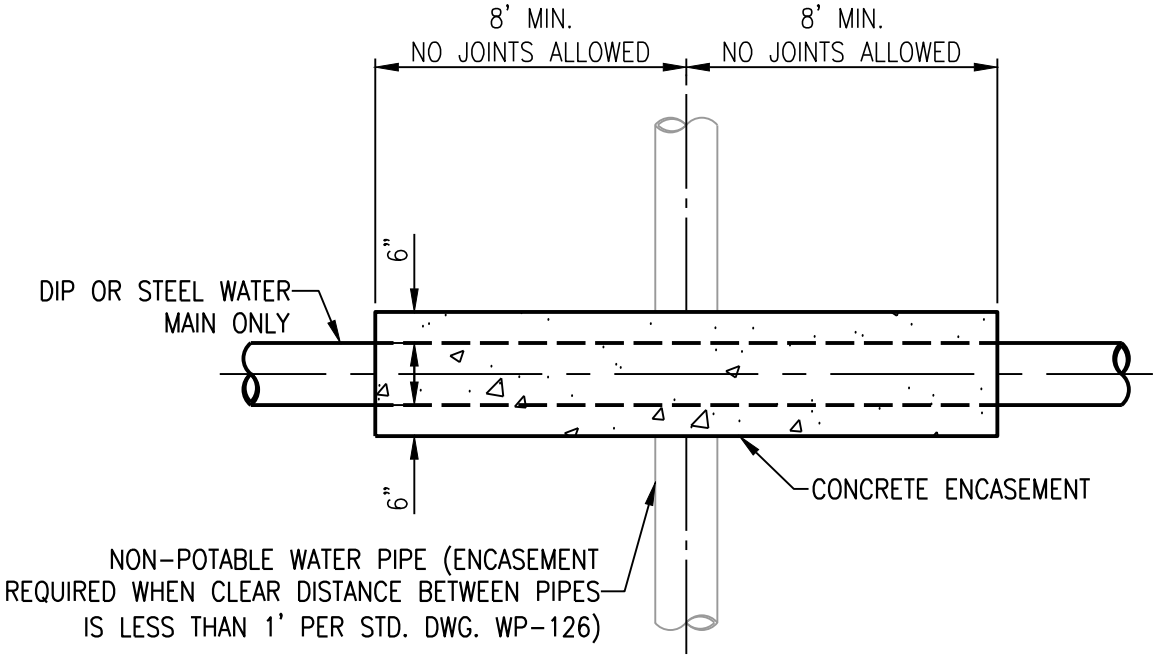
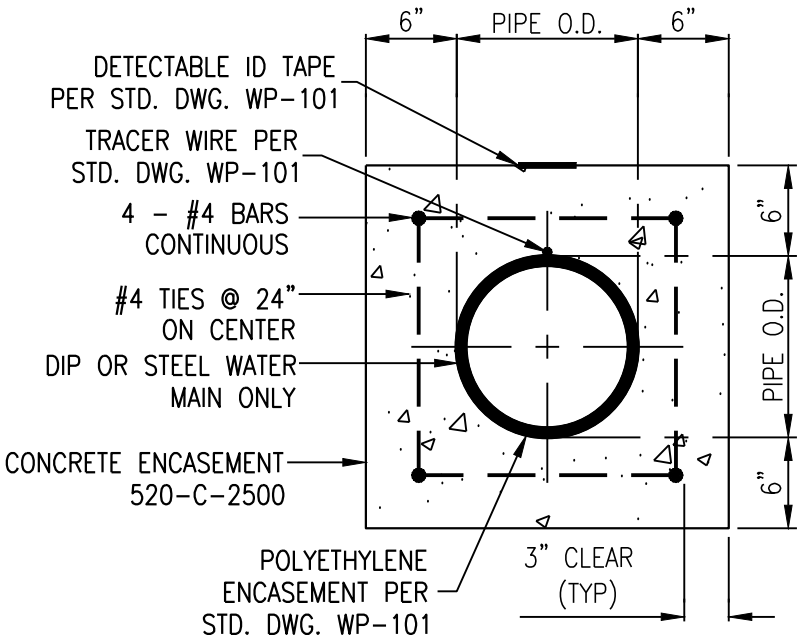
7/20/2022
DATE

STD. DWG.
WP-119

REV. 1.0

SHEET 1 OF 1





NOTE:
THIS METHOD SHALL BE USED ONLY IF APPROVED BY AGENCY INSPECTOR AND/OR ENGINEER. THE TYPICAL PREFERRED ENCASEMENT METHOD IS ONCE SACK CEMENT SLURRY ENCASEMENT PER STD. DWG. WP-120B

TYPICAL REINFORCED CONCRETE ENCASEMENT

SCV WATER

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WP-120A

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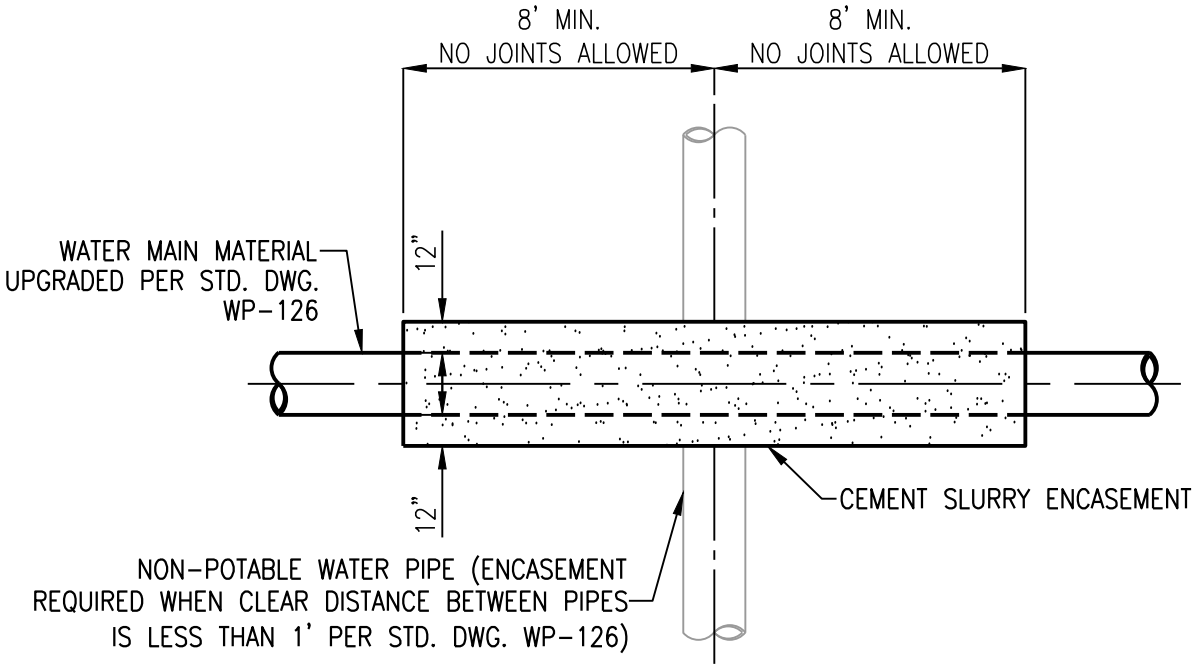
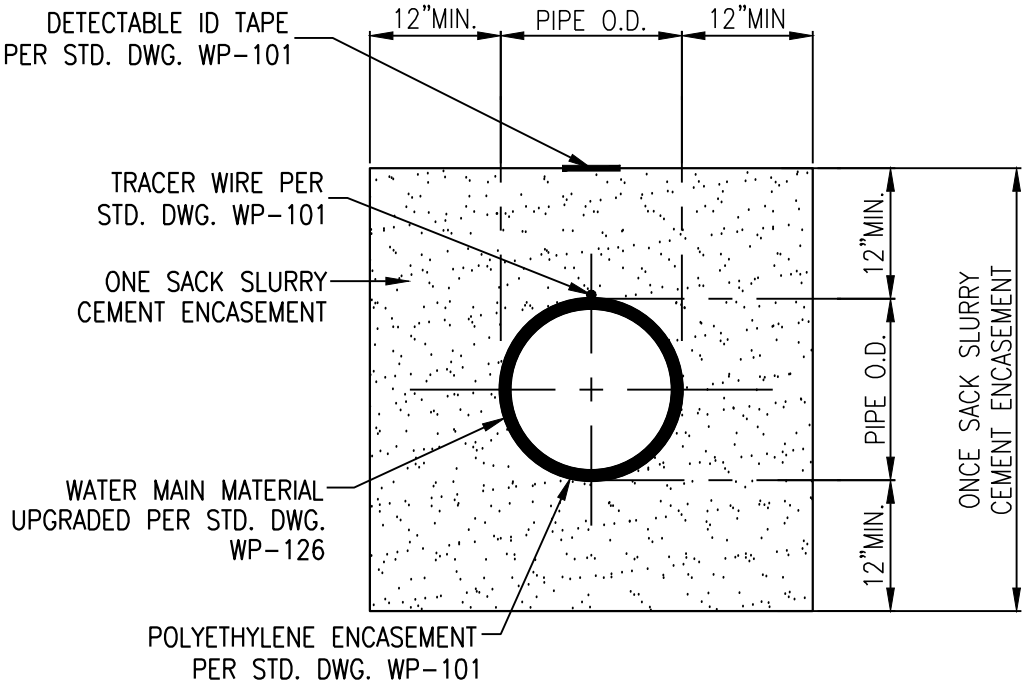
SHEET 1 OF 1





TYPICAL CEMENT SLURRY ENCASEMENT

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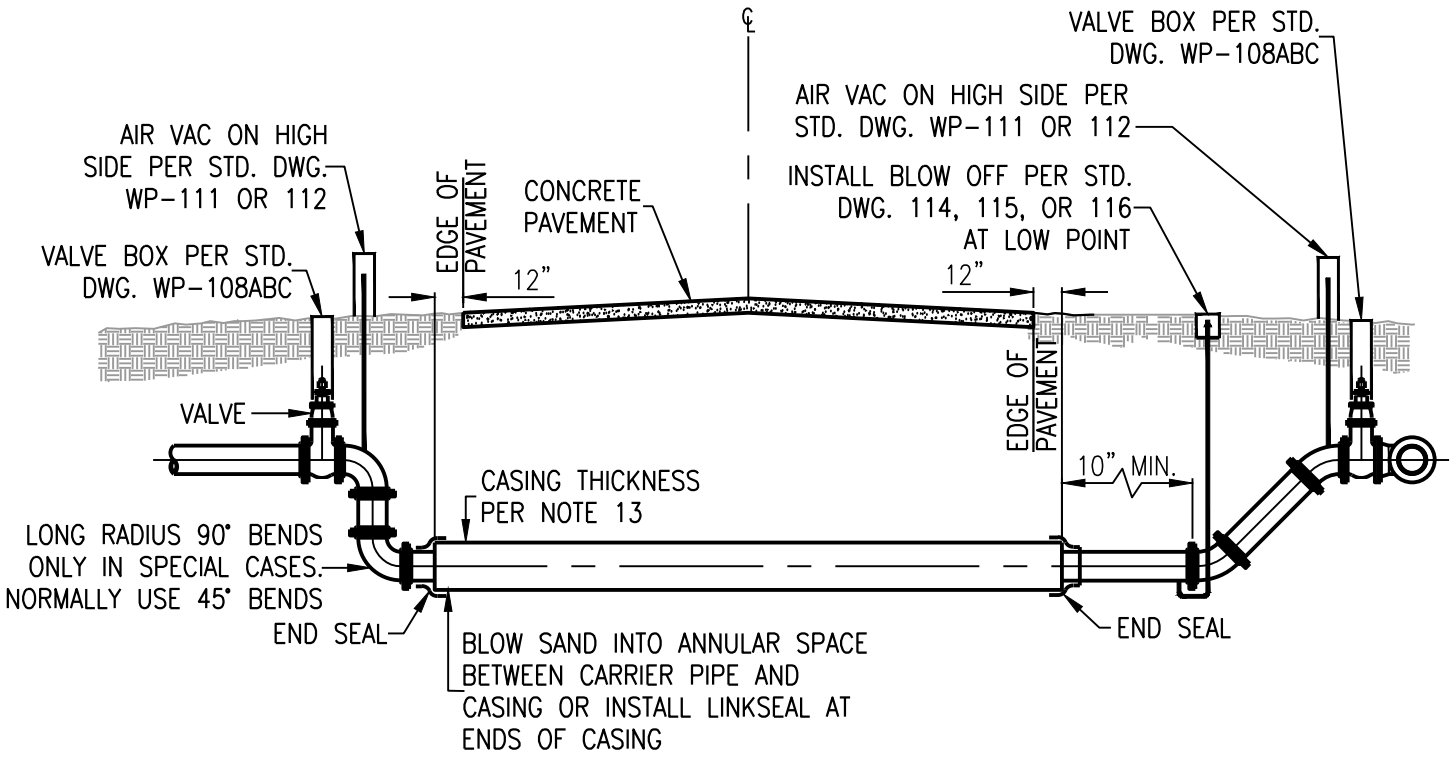
DATE

STD. DWG.
WP-120B

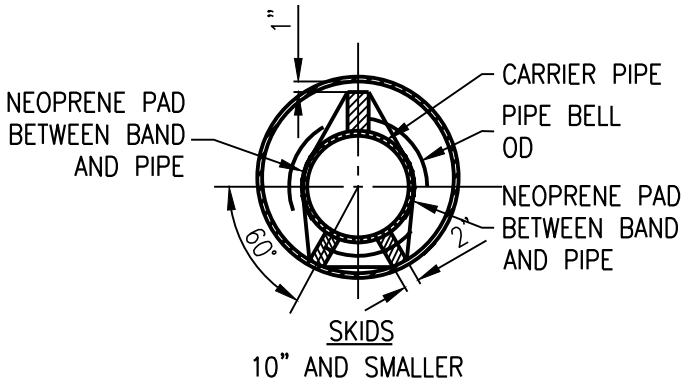
REV. 1.0

SHEET 1 OF 1

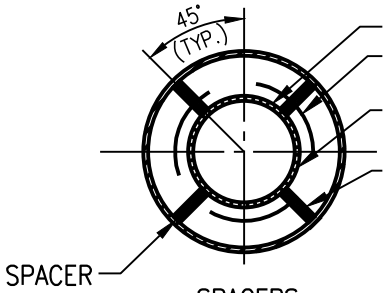
TYPICAL BORE



SKIDS FOR FLANGED PIPE



SKIDS
10" AND SMALLER



- M-6-SS FOR 3"-16" CARRIER PIPE
- M-8-SS FOR 16"/18" TO 36" CARRIER PIPE
- M-12-SS FOR 38" AND LARGER CARRIER PIPE

SPACERS
12" AND LARGER

CONTINUED ON SHEET 2

TYPICAL BORE AND SKIDS

SCV WATER

SANTA CLARITA VALLEY WATER AGENCY
ENGINEERING SERVICES SECTION

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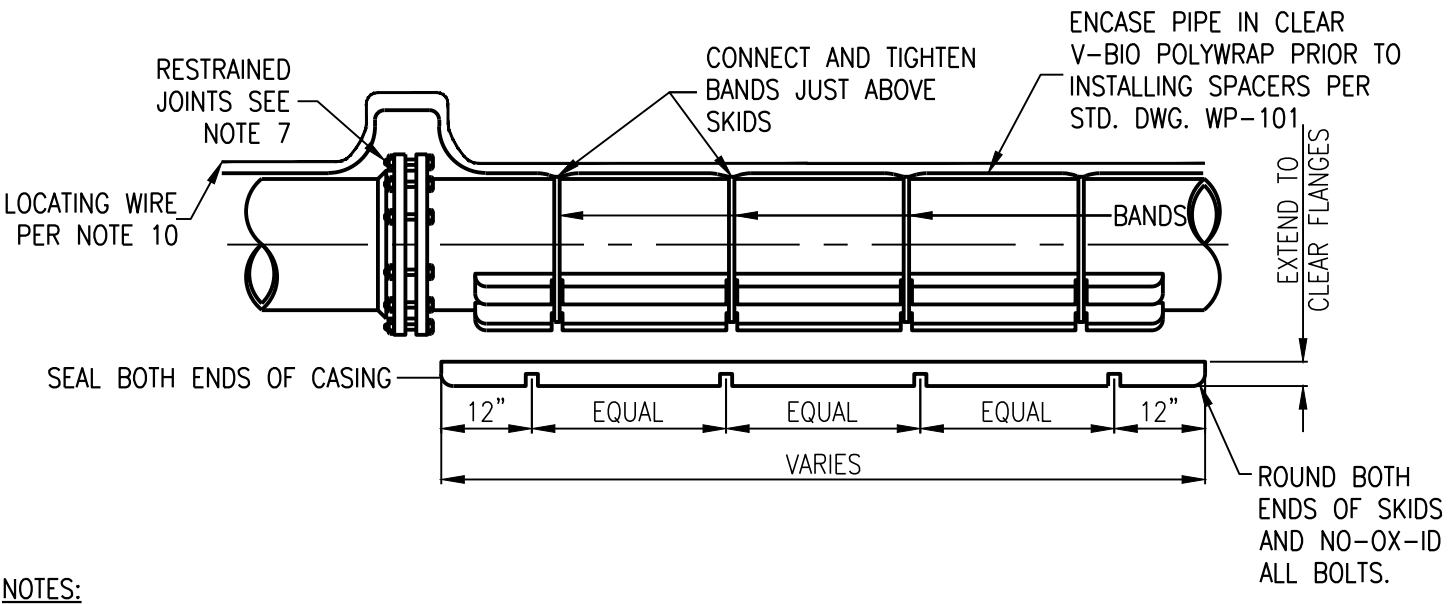
CHIEF ENGINEER

7/20/2022
DATE

STD. DWG.
WP-121

REV. 1.0

SKIDS FOR FLANGE PIPE



NOTES:

1. PRIOR TO AND AGAIN FOLLOWING FINAL BACKFILL AND COMPACTION, A CERTIFIED CORROSION TECHNOLOGIST SHALL VERIFY THAT THE CARRIER PIPE AND CASING ARE ELECTRICALLY ISOLATED FROM ONE ANOTHER. VERIFICATION SHALL BE INCLUDED IN THE FINAL CORROSION REPORT.
2. ALL MATERIAL SUPPLIED SHALL MEET OR EXCEED AWWA & SCVWA SPECIFICATIONS.
3. CASING SPACERS/INSULATORS SHALL BE CENTER RESTRAINING CALPICO MODEL M-8-SS OR EQUAL MIN. 3 PER STICK. SPACING AND DESIGN SHALL BE INSTALLED 12" FROM EACH END OF CASING.
4. RUNNERS SHALL BE MIN 1.25" WIDE CAPABLE OF SUSTAINING WEIGHT OF THE PIPE.
5. ALL HARDWARE SHALL BE 304 STAINLESS STEEL.
6. STAINLESS STEEL BAND SHALL BE 8" WIDE.
7. CARRIER PIPE SHALL BE FULLY RESTRAINED JOINTS AS MANUFACTURED BY US PIPE OR APPROVED EQUAL.
8. INSTALL AIR-VAC ON HIGH SIDE AND INSTALL BLOW-OFF ON LOW SIDE, A MINIMUM OF ONE AIR-VAC AND BLOW IS REQUIRED, MORE MAY BE NECESSARY AS DIRECTED BY AGENCY REPRESENTATIVE, LOCATED PER STD. DWG. WP-107.
9. WATER PIPE TO BE RESTRAINED DUCTILE IRON OR WELDED CML&C STEEL, CL 350.
10. INSTALL BLUE LOCATING WIRE, 12 GAUGE HMWPE SOLID STRAND W/ 3M GREASE TUBE NUT (DBR/Y6) OR EQUAL. USE PURPLE LOCATING WIRE FOR RECYCLED WATER PIPELINES.
11. THE ANNULAR SPACE SHALL BE FILLED WITH AIR BLOWN SAND.
12. ALL STEEL CASING JOINTS SHALL BE WELDED THE FULL CIRCUMFERENCE.
13. SPACERS, INSULATORS, AND ALL HARDWARE SHALL BE DESIGNED BY THE MANUFACTURER FOR THE APPLICATION GIVEN THE PARTICULAR CASING AND CARRIER PIPE CHARACTERISTICS INCLUDING MATERIAL, LENGTH, DIA. AND WEIGHT.
14. STEEL PIPE CASINGS MUST BE BUTT-WELDED SHEETS FOR STRAIGHT SEAM STEEL CASING PIPE AND COMPLY WITH THE FOLLOWING:
    - 14.1 ASTM A 36/A 36M, ASTM A 283/ A 283M, GRADE D, OR ASTM A 568/A 568M, GRADE 33.
    - 14.2 STEEL CASING SIZED 20 INCH OR SMALLER MUST HAVE A MINIMUM WALL THICKNESS OF 3/8 INCH.
    - 14.3 STEEL CASINGS SIZED LARGER THAN 20 INCH MUST HAVE A MINIMUM WALL THICKNESS OF 1/2 INCH.
    - 14.4 ALL JOINTS MUST BE FULL PENETRATION WELDS THAT COMPLY WITH AWWA C206, AWS D1.1.

TYPICAL BORE AND SKIDS

SCV WATER

SANTA CLARITA VALLEY WATER AGENCY
ENGINEERING SERVICES SECTION

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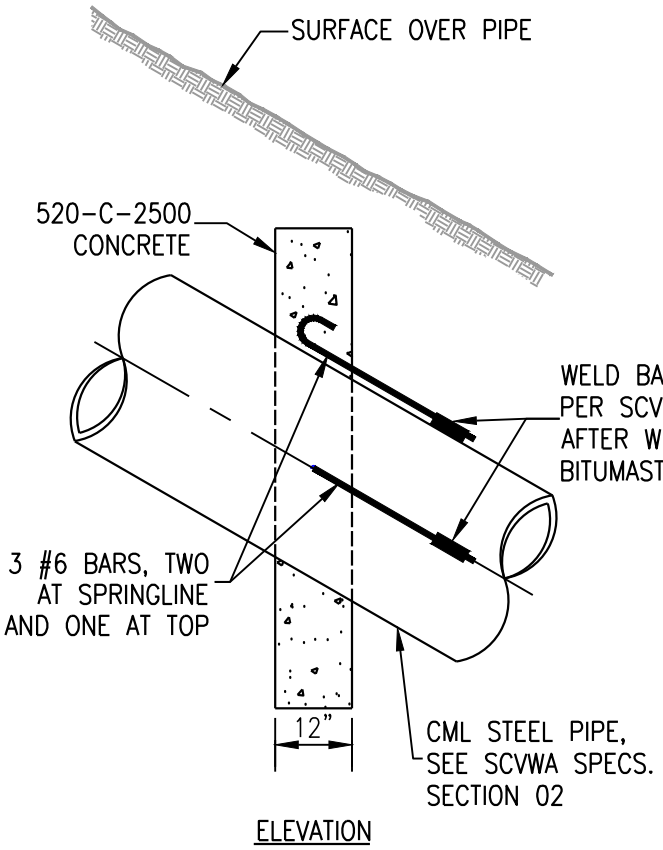
CHIEF ENGINEER

7/20/2022
DATE

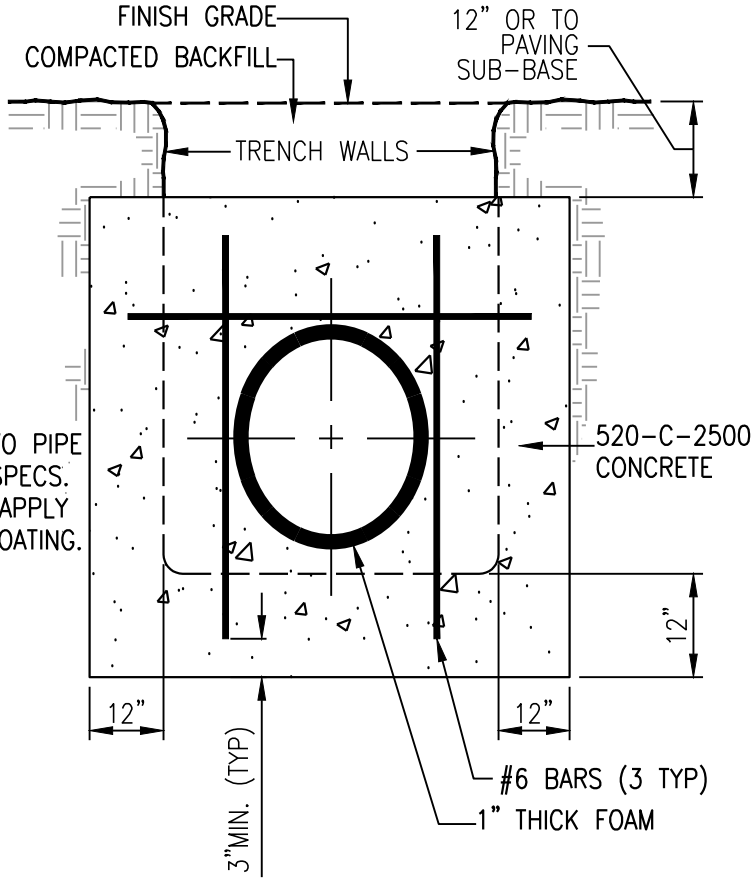
STD. DWG.
WP-121

REV. 1.0

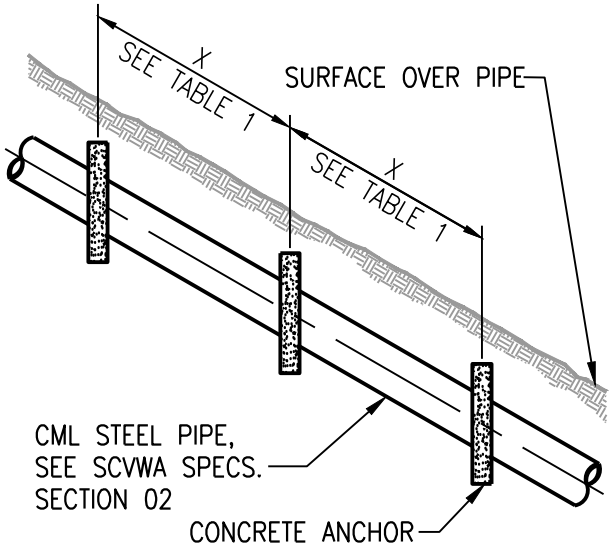
SHEET 2 OF 2



ELEVATION



SECTION



PROFILE

TABLE 1

PIPE SLOPE (%)	PIPE SLOPE	DISTANCE (X)
100	1:1	12'
67	1 1/2:1	14'
50	2:1	16'
40	2 1/2:1	18'
33	3:1	20'

PIPE ANCHOR FOR STEEL PIPE

SCV WATER

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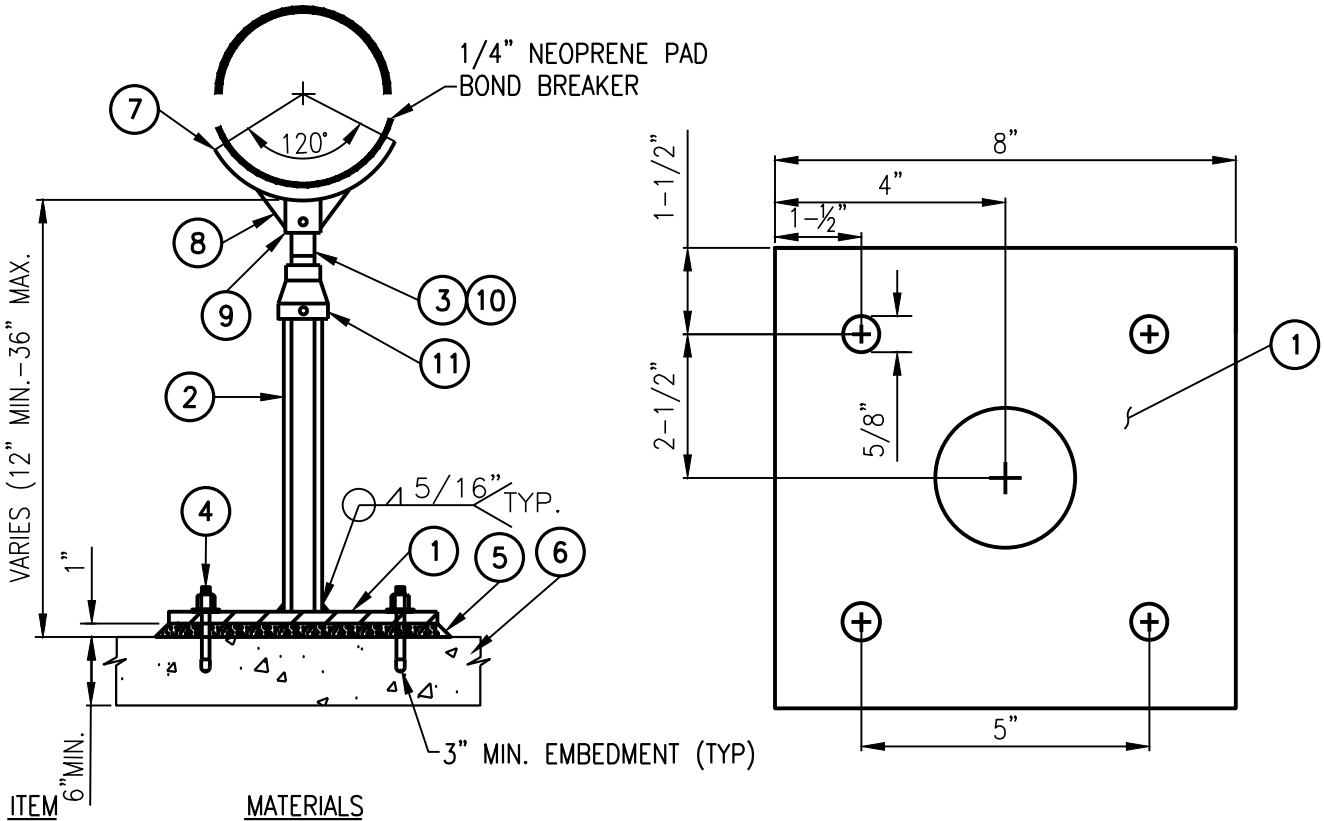
STD. DWG.
WP-122

REV. 1.0

SHEET 1 OF 1



ITEM	MATERIALS
1	8" X 8" X 1/2" GALVANIZED BLACK STEEL BASE PLATE WITH 4-5/8" BOLT HOLES.
2	3" DIAMETER GALVANIZED SCH. 40 BLACK STEEL PIPE WELDED TO BASE PLATE STOCKED @15" LONG TO BE CUT TO SIZE IN THE FIELD.
3	COAT STAINLESS STEEL THREADS WITH LIBERAL AMOUNTS OF ANTI-SEIZE COMPOUND.
4	5/8" DIAMETER RED HEAD GALVANIZED CONCRETE ANCHOR BOLT W/ 5/8" DIAMETER STAINLESS STEEL HEX HEAD ANCHOR NUT AND 1" X 5/8" HEAVY STAINLESS STEEL WASHER DRILL AND MOUNT INTO CONCRETE PAD OR VAULT FLOOR.
5	1" THICK NON-SHRINK GROUT LEVELING COURSE.
6	6" MIN. CONCRETE PAD. 2500 PSI.
7	3/8" THICK X 4" WIDE STAINLESS STEEL SADDLE ASSEMBLY.
8	3/8" GUSSET THINK STAINLESS STEEL GUSSET PLATE.
9	3" DIAMETER SCH. 80 STAINLESS STEEL RECEIVER TUBE W/ 1.2" STAINLESS STEEL ALLEN SET SCREW.
10	2 1/2" DIAMETER SCH. 40 STAINLESS STEEL THREADED RISER PROVIDES APPROX. 6" OF ADJUSTMENT.
11	3" DIAMETER STAINLESS STEEL HEAVY THREADED ADJUSTMENT COUPLING WITH 1/2" DIAMETER STAINLESS STEEL SET SCREW.

NOTES:

1. ALL PIPE SUPPORT COMPONENTS SHALL BE HOT DIP GALVANIZED AFTER FABRICATION WITH THE EXCEPTION OF THE THREADED STAINLESS STEEL PARTS (316 GRADE).
2. ALL PIPE SUPPORT COMPONENTS EXCEPT THE ALL-THREAD ROD SHALL BE PAINTED AFTER FIELD INSTALLATION IN ACCORDANCE WITH SCVWA SPECIFICATIONS (COLOR SHALL MATCH THE SUPPORTED PIPING AND FITTINGS).

GALVANIZED/STAINLESS PIPE SUPPORT

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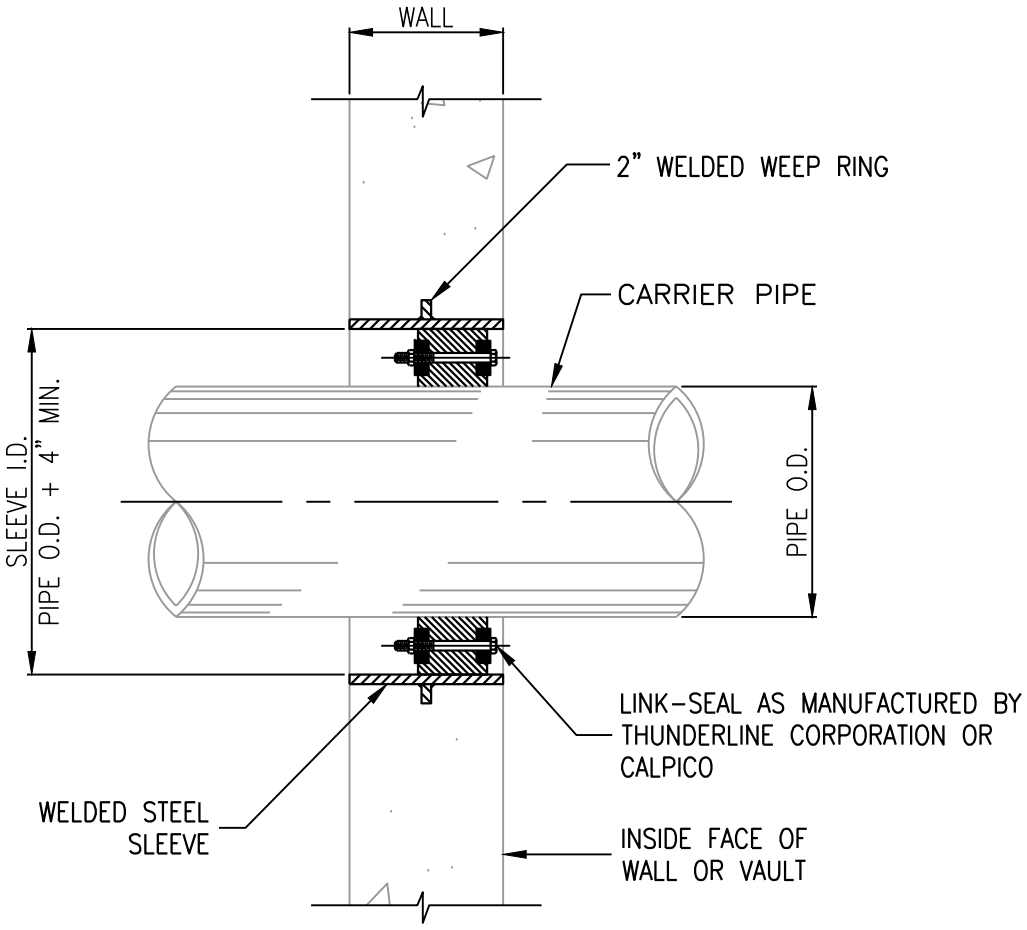
WP-123

REV. 1.0

SHEET 1 OF 1



NOTE:
WALL PENETRATION SEAL IS TO USED FOR ALL PIPE PENETRATING WALLS OR VAULTS.

TYPICAL WALL PENETRATION SEAL

SCV WATER

SANTA CLARITA VALLEY WATER AGENCY
ENGINEERING SERVICES SECTION

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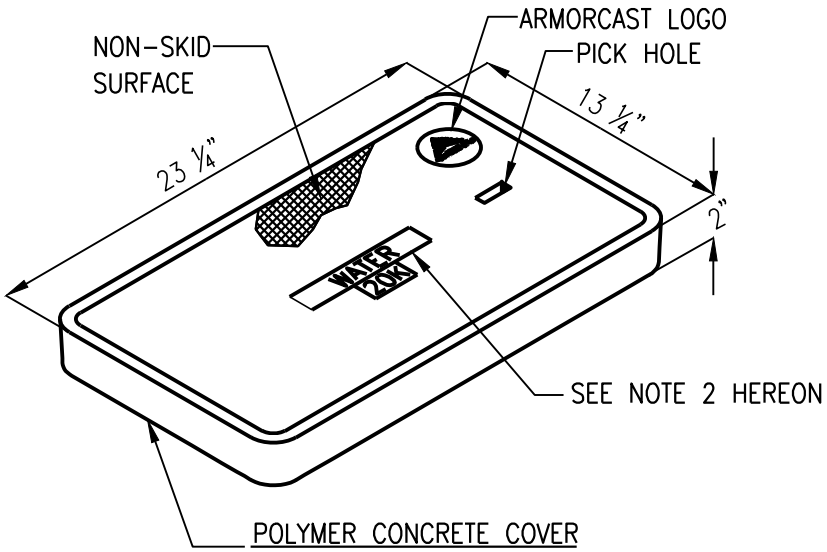
CHIEF ENGINEER

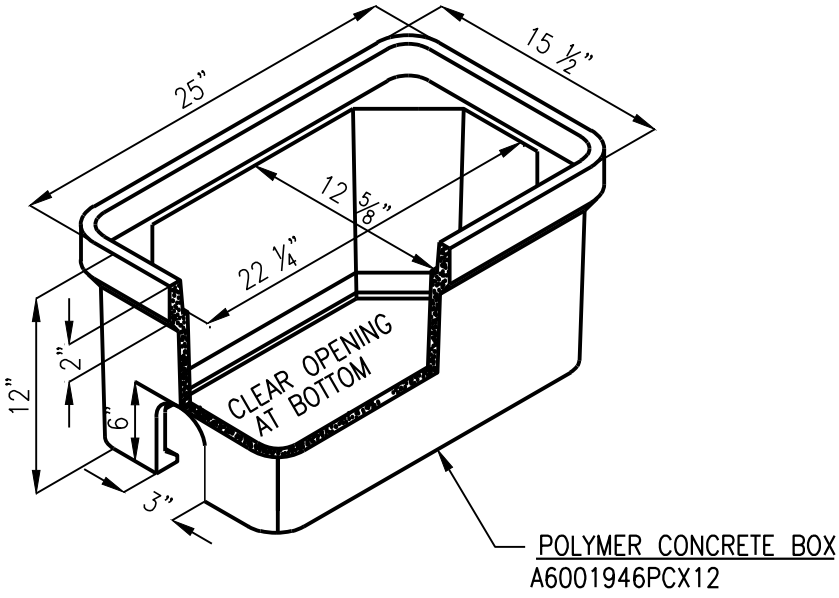
7/20/2022
DATE

STD. DWG.
WP-124

REV. 1.0

SHEET 1 OF 1





NOTES:

1. FOR LIDS, USE THE FOLLOWING: ARMORCAST LID A6001969T (20K) FOR BLOW-OFF ASSEMBLIES AND FOR ALL NEWHALL AND VALENCIA WATER SYSTEM METERS. FOR SANTA CLARITA WATER SYSTEM USE ARMORCAST LID A6001969T-H7 (20K) FOR WATER SYSTEM METERS. METER BOX SHALL BE SET BEHIND SIDEWALK, WHERE SIDEWALK IS ADJACENT TO CURB, OR IN PARKWAY, BETWEEN CURB AND SIDEWALK, ALL WITHIN DEDICATED PUBLIC RIGHT-OF-WAY. NO METERS ALLOWED IN DRIVEWAY AREAS, CUSTOMER WALKWAYS OR TRANSITIONS.
2. WATER METER BOX AND LID, LABELED "WATER", AS MANUFACTURED BY ARMORCAST PRODUCTS. FOR RECYCLED WATER TEMPORARY BLOW-OFFS, BOX AND LID SHALL BE PURPLE AND SAY "RECYCLED WATER" ON LID AS MANUFACTURED BY ARMORCAST.

1" METER BOX AND 2" BLOW-OFF ASSEMBLY METER BOX

SCV WATER

SANTA CLARITA VALLEY WATER AGENCY
ENGINEERING SERVICES SECTION

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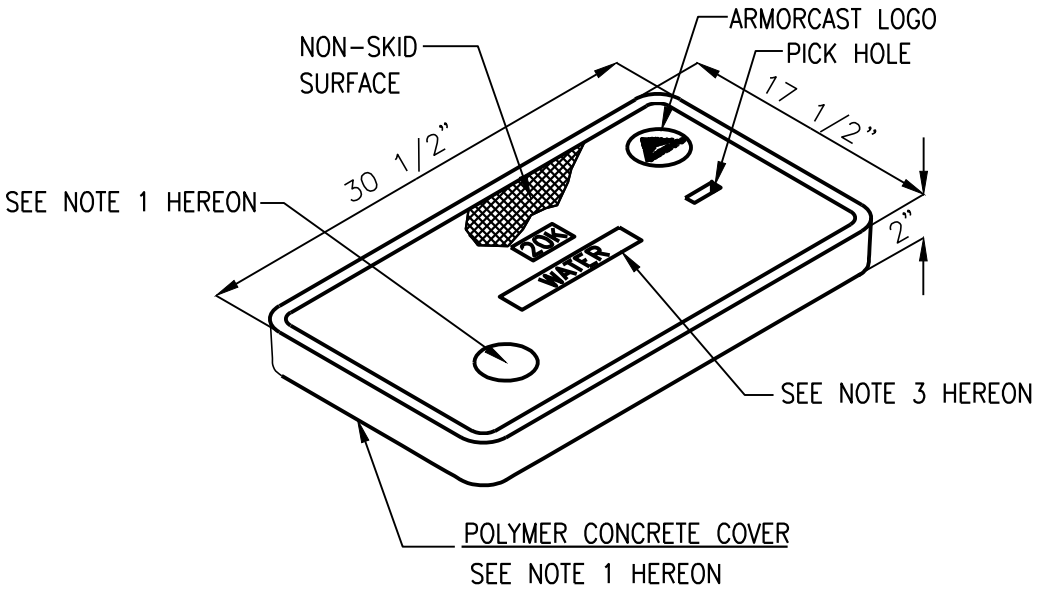
CHIEF ENGINEER

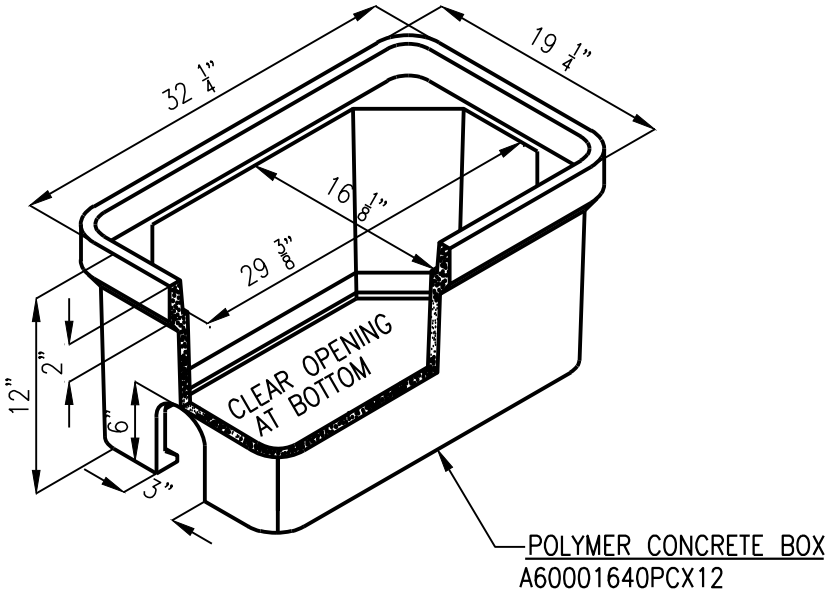
7/20/2022
DATE

STD. DWG.
WP-125A

REV. 1.0

SHEET 1 OF 1





NOTES:

1. FOR LIDS, USE THE FOLLOWING:
   SANTA CLARITA SYSTEM INSTALLATION
   FOR 1.5"-2" USE ARMORCAST LID A6001947T-H7 (20K)
   NEWHALL AND/OR VALENCIA SYSTEM INSTALLATION
   FOR 1.5"-2" ARMORCAST LID A6001947T (20K)
2. METER BOX SHALL BE SET BEHIND SIDEWALK, WHERE SIDEWALK IS ADJACENT TO CURB, OR IN PARKWAY, BETWEEN CURB AND SIDEWALK, ALL WITHIN DEDICATED PUBLIC RIGHT-OF-WAY. NO METERS ALLOWED IN DRIVEWAY AREAS CUSTOMER WALKWAYS, OR TRANSITIONS.
3. WATER METER BOX AND LID, LABELED "WATER", AS MANUFACTURED BY ARMORCAST PRODUCTS. FOR RECYCLED WATER BOX AND LID SHALL BE PURPLE AND SAY "RECYCLED WATER" ON LID AS MANUFACTURED BY ARMORCAST PRODUCTS FOR 2" METERS OR EQUAL.

1.5" & 2" METER BOX

SCV WATER

SANTA CLARITA VALLEY WATER AGENCY
ENGINEERING SERVICES SECTION

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CHIEF ENGINEER

7/20/2022
DATE

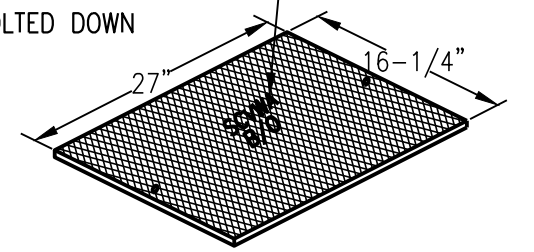
STD. DWG.
WP-125B

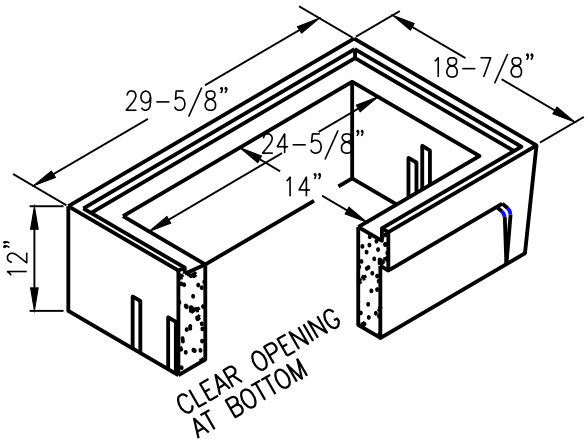
REV. 1.0

SHEET 1 OF 1

LABELED "SCVWA B/O" FOR BLOW-OFFS
OR LABELED "SCVWA WATER" FOR WATER SERVICES.
FOR RECYCLED WATER SERVICES, LABEL SHALL BE "SCVWA RECYCLED WATER" AND "SCVWA RECYCLED B/O" FOR BLOW-OFFS, POWDER COATED WITH OSHA/ANSI SAFETY PURPLE.
MARKINGS SHALL BE DONE BY THE MANUFACTURER.

*LID MUST BE BOLTED DOWN





MANUFACTURED BY:
CHRISTY CONCRETE B1324 (H/20), JENSEN PRECAST HT1324, OR BROOKS 5-T.
CHRISTY B1324 DIMENSIONS SHOWN HERE.

NOTE:
A HIGH DENSITY REINFORCED CONCRETE BOX WITH NON-SETTLING SHOULDERS POSITIONED TO MAINTAIN GRADE AND FACILITATE BACK FILLING.

TRAFFIC BOX

SCV WATER

SANTA CLARITA VALLEY WATER AGENCY
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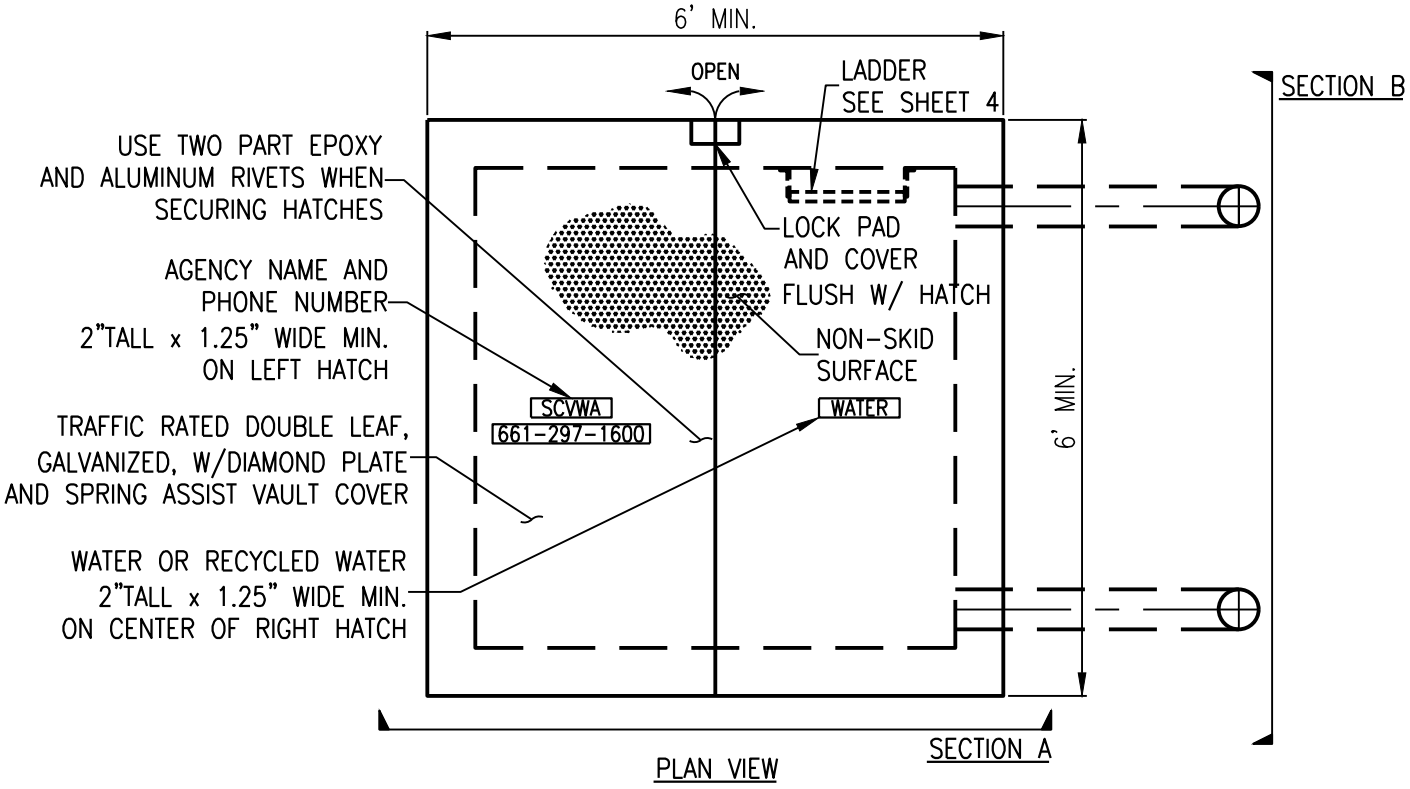
7/20/2022
DATE

STD. DWG.
WP-125C

REV. 1.0

SHEET 1 OF 1



NOTES:

1. THE CONCRETE PRECAST VAULT SHOWN HEREON IS SHOWN TO DEMONSTRATE THE MINIMUM REQUIREMENTS AND DIMENSIONS FOR METER SIZES 3-INCH OR LARGER.
2. FULL SUBMITTAL IS REQUIRED FOR ALL PROJECTS THAT REQUIRE VAULTS AND MUST BE APPROVED BY THE AGENCY PRIOR TO MANUFACTURING AND INSTALLATION.
3. LETTERING ON VAULT COVER SHALL BE LASER ENGRAVED AND SHALL BE OSHA SAFETY BLUE FOR POTABLE WATER SERVICES OR OSHA SAFETY PURPLE FOR RECYCLED WATER SERVICES. NAME PLATES WITH ALUMINUM RIVETS ARE ALLOWED BUT MUST BE APPROVED BY THE AGENCY.
4. PRIOR TO PLACING VAULT, GROUND SHALL BE COMPACTED TO 95% AT ALL FOUR CORNERS AND ONE IN THE CENTER OF WHERE VAULT WILL BE PLACED..
5. PRIOR TO SETTING VAULT CONTRACTOR SHALL PLACE AND COMPACT 3/4-INCH CRUSHED GRAVEL ROCK AT BOTTOM OF VAULT MIN 6-INCHES.
6. PIPE IN VAULTS SHALL NOT EXCEED 36-INCHES IN DEPTH TO TOP OF PIPE. IF WATER MAIN EXCEED THE DEPTH OF 36-INCHES, ALL SERVICES SHALL BE BROUGHT UP TO 36-INCHES IN DEPTH AND APPROPRIATE FITTINGS SHALL BE USED.
7. USE 4" GREEN SDR35 PVC PIPE AND FITTINGS AS NECESSARY (USE PURPLE 4" PVC CLASS 200 (SCH. 40) FOR RECYCLED WATER SERVICES). FITTINGS SHALL BE GLUED OR HAVE SEALS TO PREVENT WATER SEEPAGE.
8. LOCATING WIRE MUST BE BLUE HMWPE 12 GAUGE AND SHALL BE INSTALLED ON ALL PIPE. ATTACH WIRE WITH 3" WIDE TAPE-10 MIL AND TAPED AT 24" INTERVALS. FOR RECYCLED WATER LOCATING WIRE SHALL BE PURPLE HMWPE 12 GAUGE.

CONTINUED ON SHEET 2

3" OR LARGER METER CONCRETE VAULT

SCV WATER

SANTA CLARITA VALLEY WATER AGENCY
ENGINEERING SERVICES SECTION

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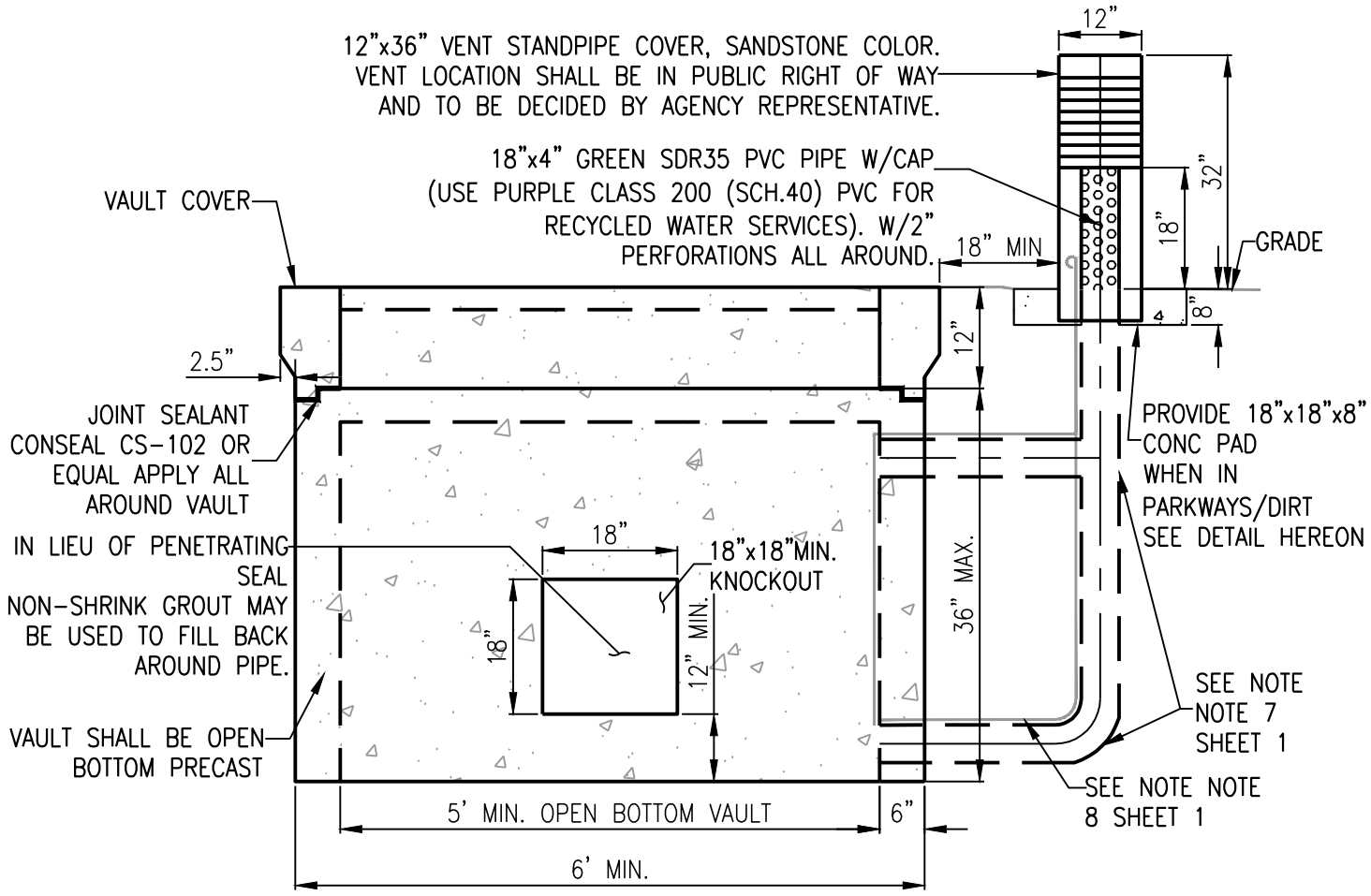
CHIEF ENGINEER

7/20/2022
DATE

STD. DWG.
WP-125D

REV. 1.0

SECTION A



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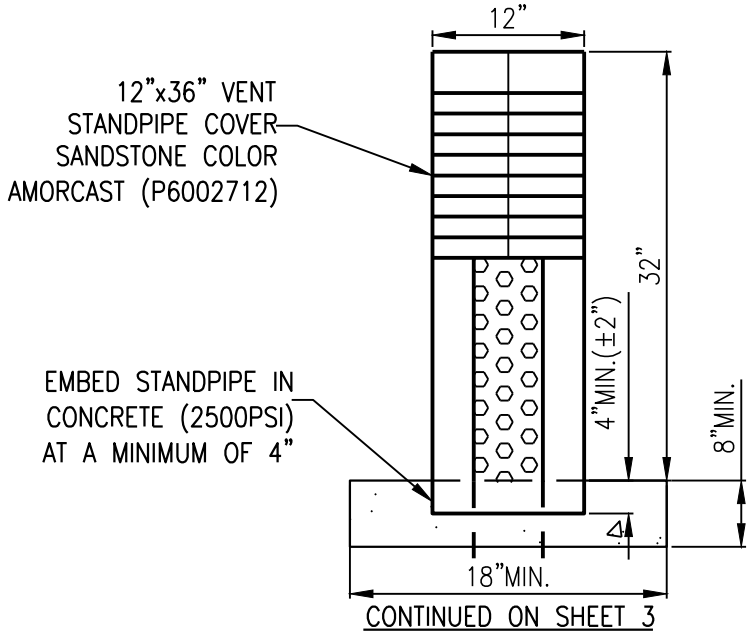

CONTINUED ON SHEET 3

3" OR LARGER METER CONCRETE VAULT

SCV WATER

SANTA CLARITA VALLEY WATER AGENCY
ENGINEERING SERVICES SECTION

APPROVED BY:

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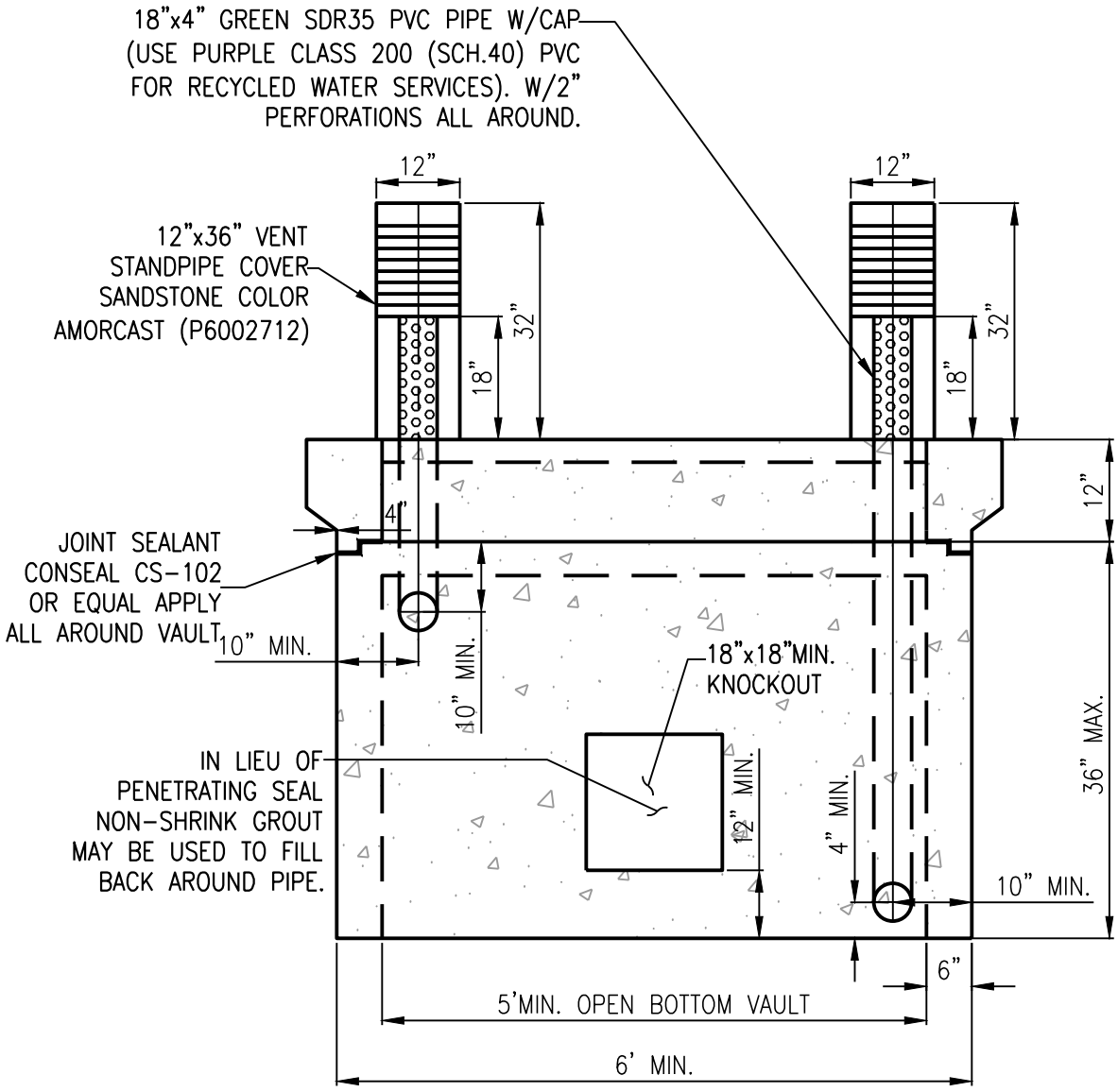
DATE

STD. DWG.
WP-125D

REV. 1.0

SECTION B



CONTINUED ON SHEET 4

3" OR LARGER METER CONCRETE VAULT

SCV WATER

SANTA CLARITA VALLEY WATER AGENCY
ENGINEERING SERVICES SECTION

APPROVED BY:

COURTNEY MAEL, P.E. 84647
CHIEF ENGINEER

7/20/2022
DATE

STD. DWG.
WP-125D

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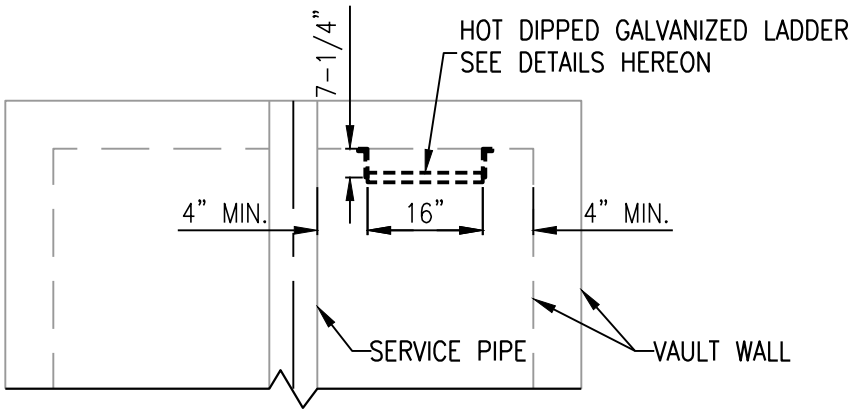

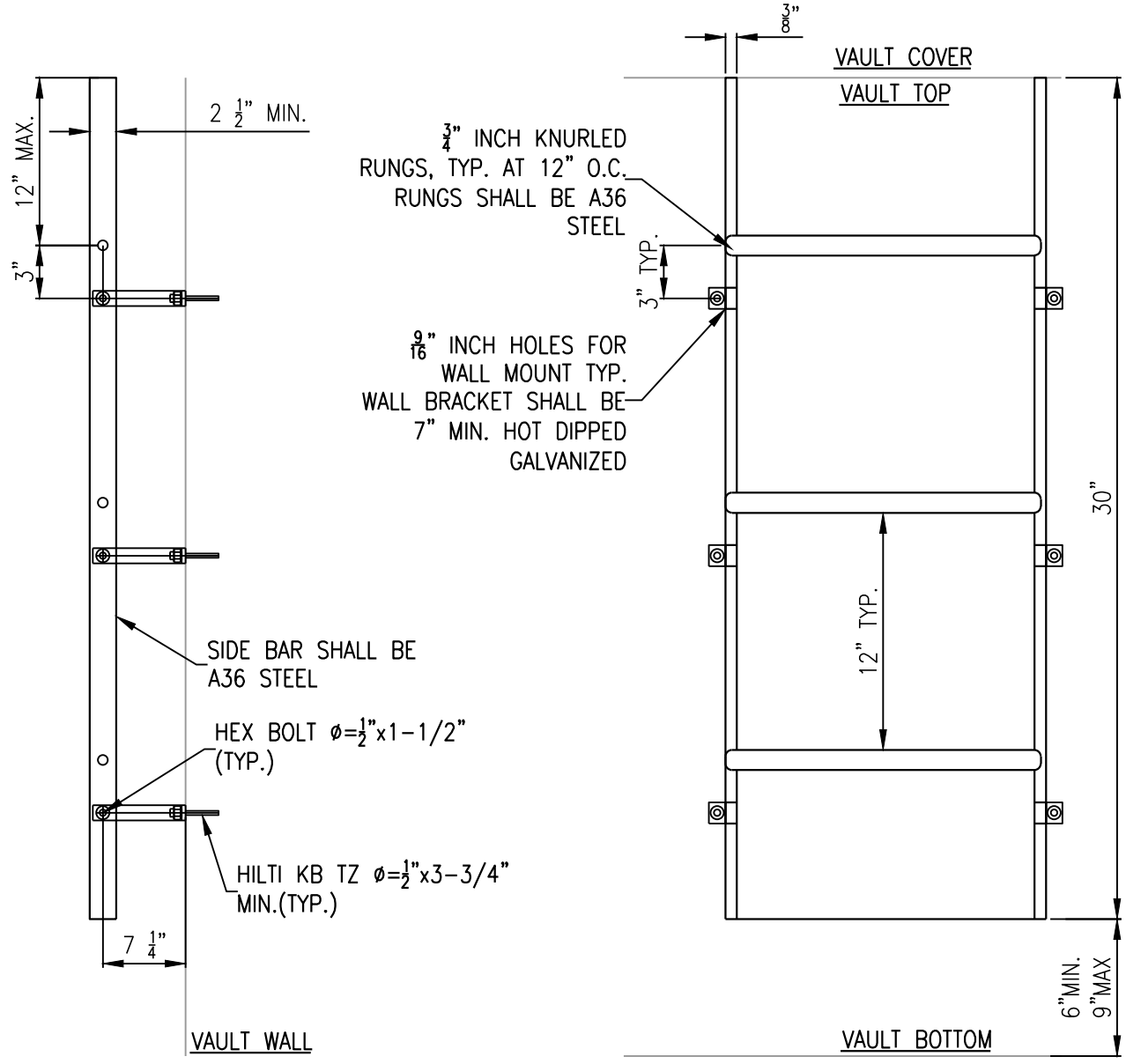

3" OR LARGER METER CONCRETE VAULT

SCV WATER

SANTA CLARITA VALLEY WATER AGENCY
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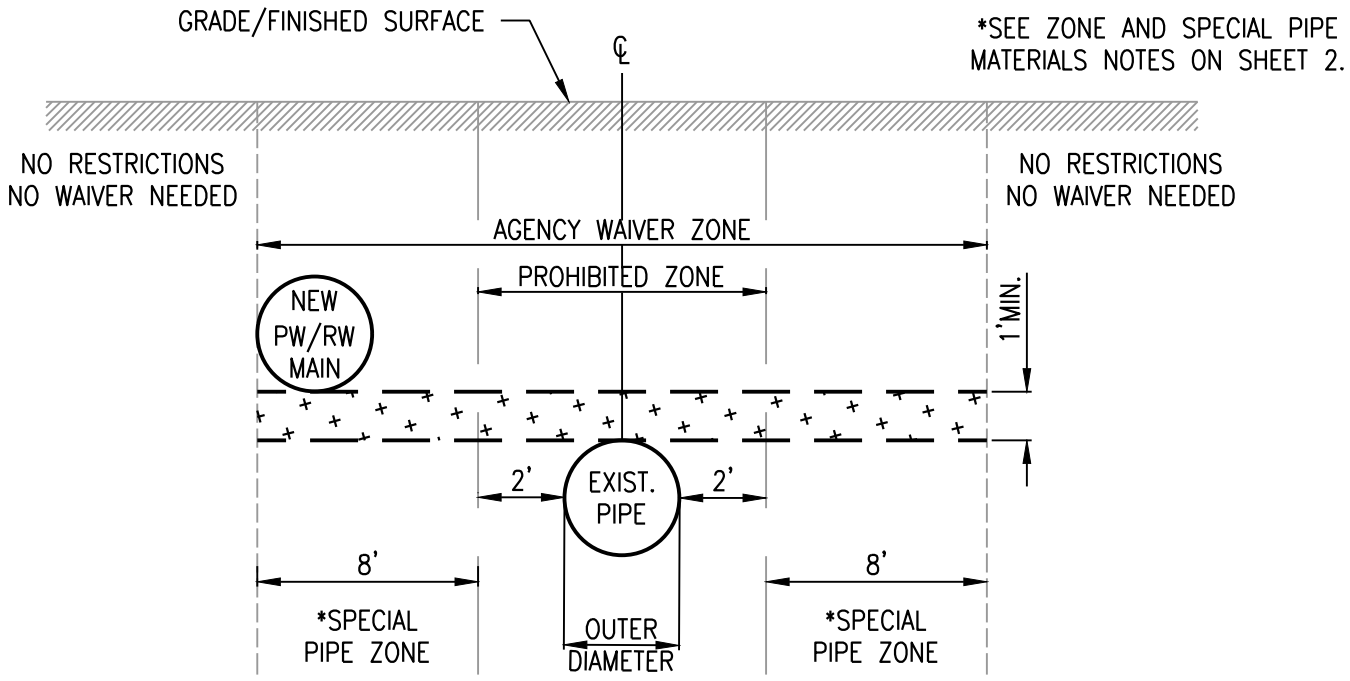
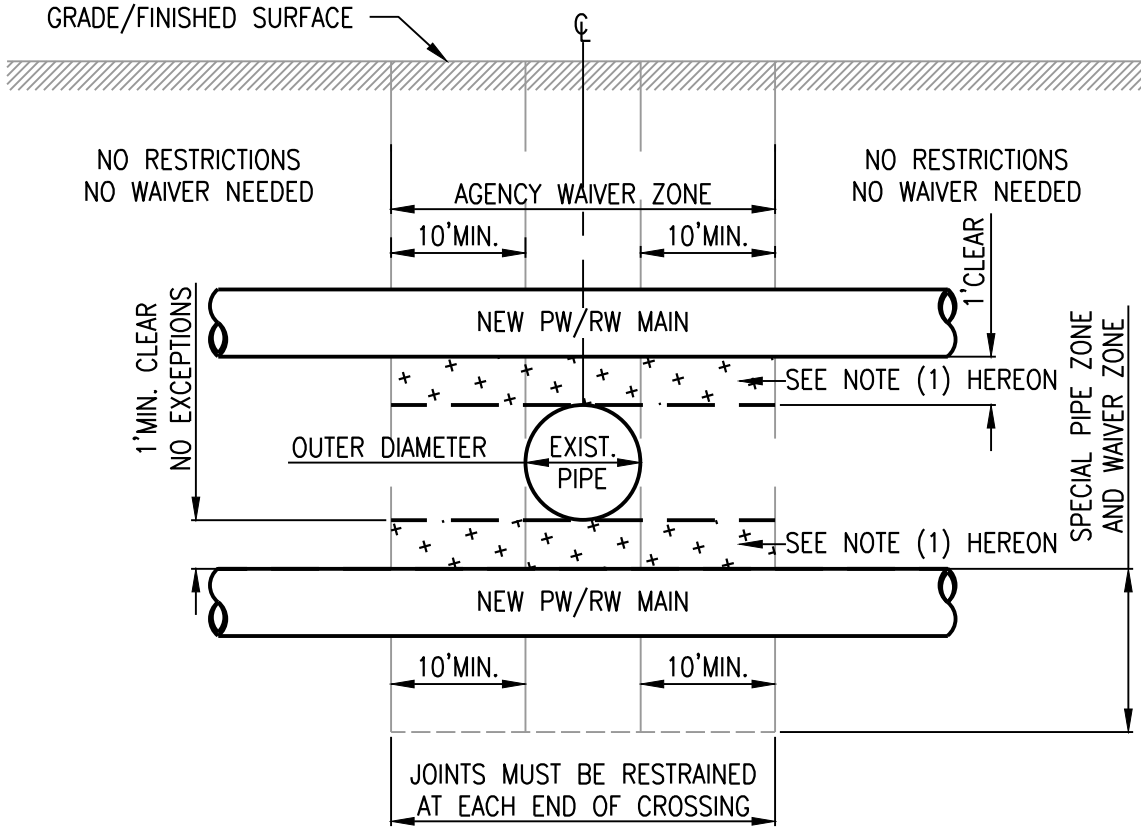
SHEET 4 OF 4

PARALLEL CONSTRUCTION OF POTABLE (PW) AND RECYCLED (RW) WATER MAINS (N.T.S.)



PERPENDICULAR (CROSSINGS) CONSTRUCTION OF POTABLE (PW) AND RECYCLED (RW) WATER MAINS (N.T.S.)



NOTE (1):
NO JOINTS AND CONNECTIONS WITHIN THESE REGIONS.
CROSSING CANNOT BE LESS THAN 45°.

CONTINUED ON SHEET 2

WATER SEPARATION REQUIREMENTS

SCV WATER

SANTA CLARITA VALLEY WATER AGENCY
ENGINEERING SERVICES SECTION

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BASIC SEPARATION STANDARDS

1. PARALLEL CONSTRUCTION: THE HORIZONTAL DISTANCE BETWEEN POTABLE AND RECYCLED WATER LINES SHALL BE AT LEAST 10-FEET, FROM OUTER DIAMETER TO OUTER DIAMETER OF PIPE. FROM ANY EXISTING OR NEW PIPE(S) AS DESCRIBED ON TITLE 22, ALL EFFORT SHALL BE MADE TO CONFORM TO THIS REQUIREMENT.
2. PERPENDICULAR CONSTRUCTION (CROSSINGS): POTABLE AND RECYCLED WATER LINES SHALL BE AT LEAST ONE FOOT ABOVE ANY EXISTING PIPE AS DESCRIBED BY TITLE 22.
3. NO PIPE JOINTS ARE PERMITTED AT ALL CROSSINGS WITHOUT AGENCY APPROVAL.
4. MATERIALS FOR CROSSINGS SHALL BE CONSISTENT WITH THOSE AS DESCRIBE HEREON UNDER "SPECIAL PIPE MATERIAL".
5. THE CRITERIA FOR BASIC SEPARATION REQUIREMENTS ALSO APPLIES TO SEWER LATERALS AND POTABLE WATER SERVICES AND CANNOT BE ANY CLOSER THAN 6-FEET (PARALLEL).
6. SPECIAL PROVISIONS: WHERE THE BASIC SEPARATION STANDARDS CANNOT BE ATTAINED, ALTERNATIVE CONSTRUCTION CRITERIA ARE SHOWN WITHIN THIS STANDARD, WHICH INCLUDE THE USE OF PROFESSIONAL ENGINEERING JUDGEMENT TO PROPOSE CONSTRUCTION THAT IS PROTECTIVE OF THE PUBLIC HEALTH.
7. LESS THAN 12-INCH VERTICAL CLEARANCE AS SHOWN, WILL REQUIRE UPGRADED PIPE MATERIAL AND AGENCY APPROVAL.
8. A PICTURE WITH THE STATION NUMBER SHOWING 12-INCH CLEARANCE OVER THE NON-POTABLE WET UTILITY, USING A TAPE MEASURE WITH NEW WATER MAIN IN THE TRENCH MUST BE TAKEN BY THE AGENCY AT EVERY NON-POTABLE MAIN LINE CROSSING, OR AS DIRECTED BY THE AGENCY FOR THE HEALTH DEPARTMENT.

NOTES FOR DEFINED ZONES:

AGENCY WAIVER ZONE: REQUIRES AGENCY APPROVAL.

PROHIBITED ZONE: AGENCY WILL NOT ALLOW THE INSTALLATION OF ANY POTABLE AND RECYCLED WATER MAINS, NO EXCEPTIONS.

SPECIAL PIPE ZONE: REQUIRES UPGRADED PIPE MATERIAL AND AGENCY APPROVAL. SEE SPECIAL PIPE MATERIAL HEREON.

SPECIAL PIPE MATERIAL:

THE FOLLOWING TYPE OF PIPELINES CAN BE PLACED WITHIN THE SPECIAL PIPE ZONE. HOWEVER, PIPE MATERIAL MUST BE APPROVED BY THE AGENCY PRIOR TO START OF CONSTRUCTION.

- DUCTILE IRON PIPE (DIP), CLASS 350, WITH FULLY RESTRAINED JOINTS.
- WELDED STEEL CYLINDER PIPE (CML&C). THICKNESS SHALL BE AT A MINIMUM OF $\frac{1}{4}$"-INCH.
- HIGH DENSITY POLYETHYLENE PIPE (HDPE), DR 7, WITH FUSION WELDED JOINTS.

ALL FERROUS PIPE SHALL BE DOUBLE CEMENT LINED AND COATED.

CONTINUED ON SHEET 3

WATER SEPARATION REQUIREMENTS

SCV WATER

SANTA CLARITA VALLEY WATER AGENCY
ENGINEERING SERVICES SECTION

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DIVISION OF DRIKING WATER TITLE 22 CODE OF REGULATIONS FOR REFERENCE ONLY (CURRENT AS OF MAY 2021)

WATER MAIN SEPARATION REQUIREMENTS:

(a) NEW WATER MAINS AND NEW SUPPLY LINES SHALL NOT BE INSTALLED IN THE SAME TRENCH AS, AND SHALL BE AT LEAST 10 FEET HORIZONTALLY FROM AND ONE FOOT VERTICALLY ABOVE, ANY PARALLEL PIPELINE CONVEYING:
  (1) UNTREATED SEWAGE,
  (2) PRIMARY OR SECONDARY TREATED SEWAGE,
  (3) DISINFECTED SECONDARY-2.2 RECYCLED WATER,
  (4) DISINFECTED SECONDARY-23 RECYCLED WATER, AND
  (5) HAZARDOUS FLUIDS SUCH AS FUELS, INDUSTRIAL WASTES, AND WASTEWATER SLUDGE.

(b) NEW WATER MAINS AND NEW SUPPLY LINES SHALL BE INSTALLED AT LEAST 4 FEET HORIZONTALLY FROM, AND ONE FOOT VERTICALLY ABOVE, ANY PARALLEL PIPELINE CONVEYING:
  (1) DISINFECTED TERTIARY RECYCLED WATER, AND
  (2) STORM DRAINAGE.

(c) NEW SUPPLY LINES CONVEYING RAW WATER TO BE TREATED FOR DRINKING PURPOSES SHALL BE INSTALLED AT LEAST 4 FEET HORIZONTALLY FROM, AND ONE FOOT VERTICALLY BELOW, ANY WATER MAIN.

(d) IF CROSSING A PIPELINE CONVEYING A FLUID LISTED IN SUBSECTION (A) OR (B), A NEW WATER MAIN SHALL BE CONSTRUCTED NO LESS THAN 45-DEGREES TO AND AT LEAST ONE FOOT ABOVE THAT PIPELINE. NO CONNECTION JOINTS SHALL BE MADE IN THE WATER MAIN WITHIN EIGHT HORIZONTAL FEET OF THE FLUID PIPELINE. SEE SHEET 1 FOR CROSSING DETAILS.

(e) THE VERTICAL SEPARATION SPECIFIED IN SUBSECTIONS (A), (B), AND (C) IS REQUIRED ONLY WHEN THE HORIZONTAL DISTANCE BETWEEN A WATER MAIN AND PIPELINE IS LESS THAN TEN FEET.

WATER SEPARATION REQUIREMENTS

SCV WATER

SANTA CLARITA VALLEY WATER AGENCY
ENGINEERING SERVICES SECTION

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CHIEF ENGINEER

7/20/2022
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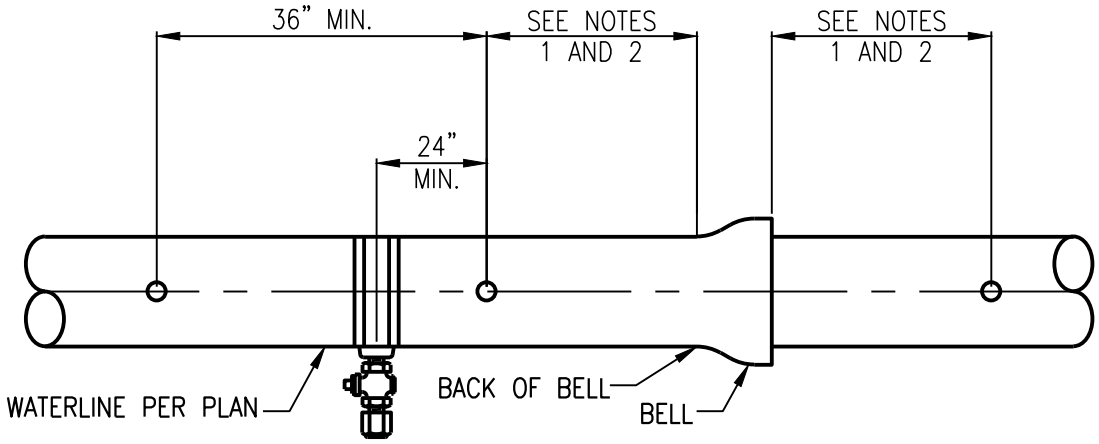
STD. DWG.
WP-126

REV. 1.0

NOTE:

CONTRACTOR MUST EXCAVATE 3' ON EACH DIRECTION FROM TAPPING LOCATION TO DETERMINE IF ANY BELLS/COLLARS ARE PRESENT AND VERIFY IF HOT TAP CAN BE DONE PER THIS STANDARD, IF NOT A CUT-IN TEE PER STD. DWG. WP-129 MUST BE DONE. ALL PVC MAINS MUST HOT TAPPED USING SHELL CUTTERS, NO EXCEPTIONS. PVC PIPE WILL BE DE-ENERGIZED PRIOR TO TAPPING.



SPACING REQUIREMENTS FOR SADDLE TAPPING ON MAINS:

SPACING REQUIREMENTS FOR SADDLE TAPPING PVC MAINS:

(1) FOR 12-INCH PIPE OR SMALLER, THE TAP SHOULD NOT BE LOCATED CLOSER THAN 36 INCHES FROM:
- (a) THE BACK OF THE BELL
- (b) THE SPIGOT INSERTION LINE
- (c) JOINT-RESTRAINT HARDWARE
- (d) FOR 1-INCH AND 2-INCH SERVICE TAPS, SERVICE TAPS WILL ALSO BE STAGGERED BETWEEN EACH TAP.

(2) FOR 14-INCH PIPE OR LARGER, THE TAP SHOULD NOT BE LOCATED CLOSER THAN 36 INCHES FROM:
- (a) THE BACK OF THE BELL
- (b) THE SPIGOT INSERTION LINE
- (c) JOINT RESTRAINT HARDWARE

(3) FOR ALL PIPE, MULTIPLE TAPS SHOULD BE STAGGERED AND KEPT AT LEAST 24 INCHES APART LENGTHWISE. THUS, THE MINIMUM SPACING ALONG THE SAME LINE IS 36 INCHES.

(4) SERVICE CONNECTIONS UP TO 2-INCH SIZE MAY BE MADE USING A SERVICE SADDLE.

SPACING REQUIREMENTS FOR SADDLE TAPPING DIP MAINS:

(5) TAPPING SADDLES SHALL BE SPACED AT A MINIMUM DISTANCE OF 2' OR SPACED SUFFICIENTLY TO ALLOW PROPER INSTALLATION OF THE TAPPING SADDLE, WHICHEVER IS GREATER. THE TAPPING SADDLE SPACING MAY BE LESS THAN 2' PER THE APPROVAL OF THE AGENCY.

SPACING REQUIREMENTS FOR SADDLE TAPPING AC MAINS:

(6) THE SPACE BETWEEN TAPPING SADDLES SHOULD BE A MINIMUM OF 3 TIMES THE MAIN PIPE DIAMETER (24"MIN.). THE TAPPING SADDLE SPACING MAY BE REDUCED PER THE APPROVAL OF THE AGENCY.

TAPPING LOCATIONS

SCV WATER

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ENGINEERING SERVICES SECTION

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CHIEF ENGINEER

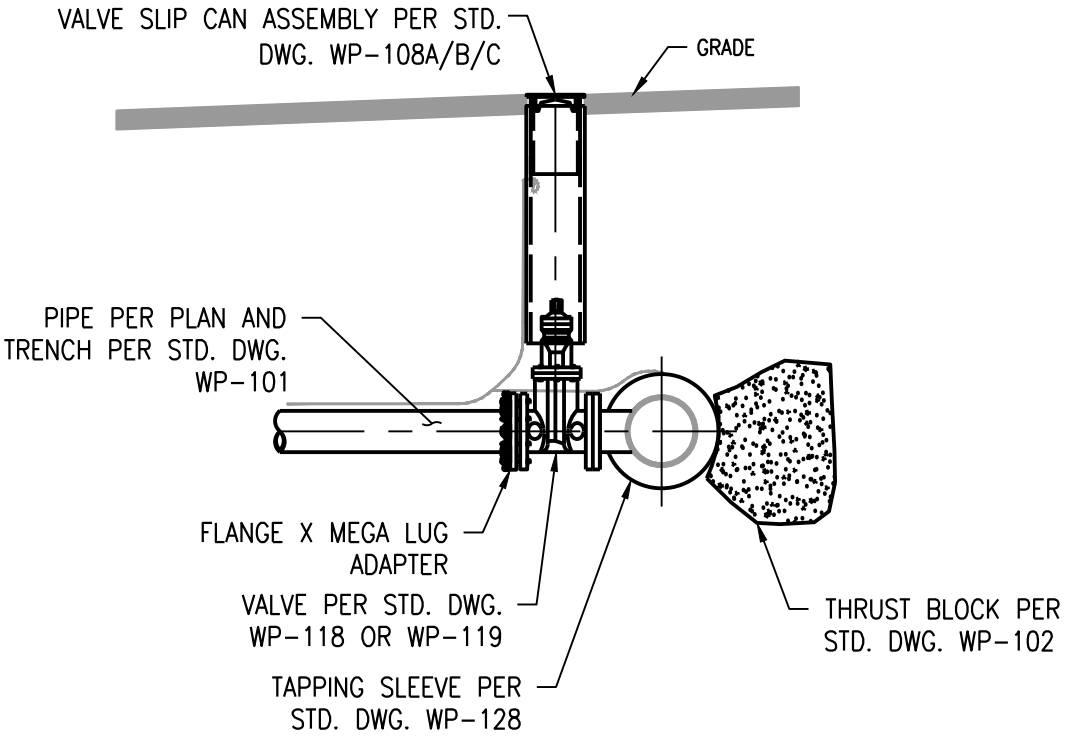
7/20/2022
DATE

STD. DWG.
WP-127

REV. 1.0

NOTE:

CONTRACTOR MUST EXCAVATE 3' ON EACH DIRECTION FROM TAPPING LOCATION TO DETERMINE IF ANY BELLS/COLLARS ARE PRESENT AND VERIFY IF HOT TAP CAN BE DONE PER THIS STANDARD, IF NOT A CUT-IN TEE PER STD. DWG. WP-129 MUST BE DONE. ALL PVC MAINS MUST HOT TAPPED USING SHELL CUTTERS, NO EXCEPTIONS. PVC PIPE WILL BE DE-ENERGIZED PRIOR TO TAPPING.



REQUIREMENTS FOR SLEEVE TAPPING WATER MAINS:

(1) FOR 12-INCH PIPE OR SMALLER, THE TAP SHOULD NOT BE LOCATED CLOSER THAN 24 INCHES FROM:
  (a) THE BACK OF THE BELL
  (b) THE SPIGOT INSERTION LINE
  (c) JOINT-RESTRAINT HARDWARE

(2) FOR 14-INCH PIPE OR LARGER, THE TAP SHOULD NOT BE LOCATED CLOSER THAN 36 INCHES FROM:
  (a) THE BACK OF THE BELL
  (b) THE SPIGOT INSERTION LINE
  (c) JOINT RESTRAINT HARDWARE

(3) WHEN INSTALLING MULTIPLE TAPPING SLEEVES THE MANUFACTURER SHOULD BE CONSULTED FOR SPACING REQUIREMENTS. AT A MINIMUM, SUFFICIENT SPACE SHOULD BE PROVIDED BETWEEN TAPPING SLEEVES TO ALLOW FOR PROPER INSTALLATION.

(4) TAPPING SLEEVE OUTLET SIZE SHOULD BE TWO TIMES SMALLER THAN THE MAIN PIPE. OTHERWISE A CUT-IN TEE IS REQUIRED PER STD. DWG. WP-129.

TAPPING LOCATIONS

SCV WATER

SANTA CLARITA VALLEY WATER AGENCY
ENGINEERING SERVICES SECTION

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DATE

STD. DWG.
WP-127

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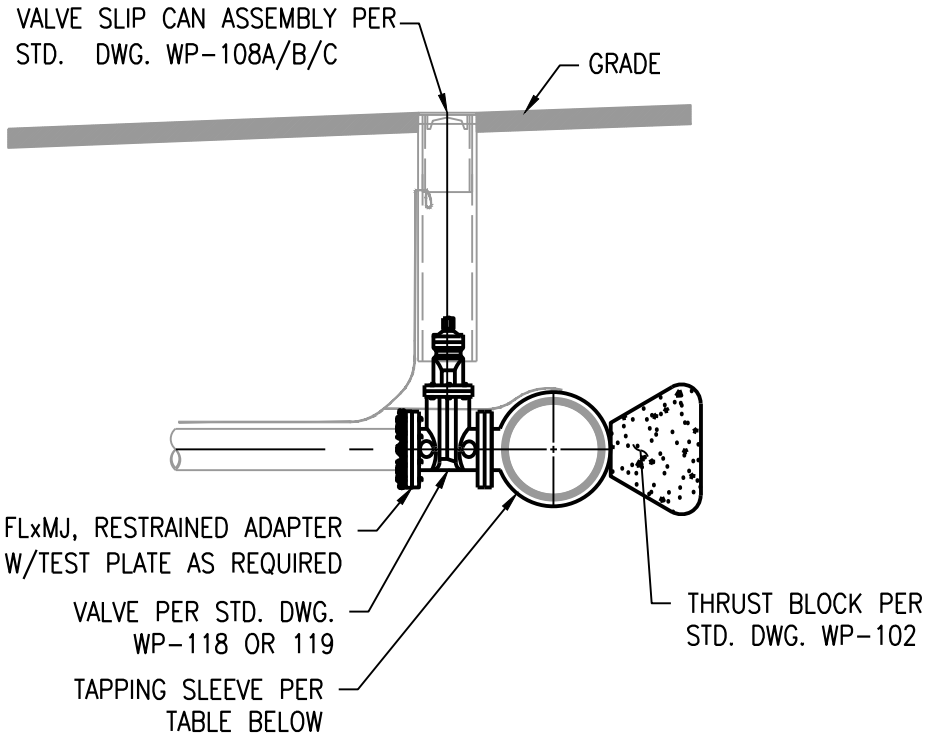
SHEET 2 OF 2



PIPE TYPE	TYPE OF TAPPING SLEEVE
A/C PIPE 4"-12"	*ROMAC SSTIII STAINLESS STEEL TAPPING SLEEVE
A/C PIPE 14" & UP	*ROMAC SSTIII STAINLESS STEEL TAPPING SLEEVE
CAST IRON PIPE 4"-24"	*ROMAC SSTIII STAINLESS STEEL TAPPING SLEEVE
DUCTILE IRON PIPE 4"-24"	*H-615 MUELLER M.J. OR FORD **FTSC-2641-X-AH-EPDM (FOR 24")
PVC C900 PIPE 4"-12"	*ROMAC SSTIII STAINLESS STEEL TAPPING SLEEVE
PVC C900 PIPE 14" & UP	*ROMAC SSTIII STAINLESS STEEL TAPPING SLEEVE
CEMENT COATED STEEL PIPE	TAPPING SLEEVE TO BE FABRICATED AND INSTALLED BY KOPPL CO. OR INTERNATIONAL FLOW CONTROL. NO WELD ON NOZZLES WILL BE PERMITTED.

*OR EQUAL TAPPING SLEEVES PER AWWA STANDARDS.
**X VALUE TO BE DETERMINED BY OUTLET SIZE PER PLAN.

NOTES:

1. ALL VALVES, NUTS, AND BOLTS WILL BE COATED WITH BITUMASTIC AND WRAPPED PER SCVWA SPECIFICATIONS.
2. TAPPING SLEEVE OUTLET SIZE SHOULD EXCEED MORE THAN HALF THE SIZE OF EXISTING PIPELINE. OTHERWISE A CUT-IN TEE IS REQUIRED PER STD. DWG. WP-129.
3. ALL RUBBER MUST BE EPDM, CONTRACTOR/SUPPLIER SHALL SELECT THE EPDM OPTION WHEN ORDERING A TAPPING SLEEVE.
4. SEE STD. DWG. WP-127 FOR LOCATION OF TAPPING SLEEVE ON WATER MAIN.
5. CONTRACTOR MUST EXCAVATE 3' ON EACH DIRECTION FROM TAPPING LOCATION TO DETERMINE IF ANY BELLS ARE PRESENT AND VERIFY IT HOT TAP CAN BE DONE PER STD. DWG. WP-127, IF NOT A CUT-IN TEE PER STD. DWG. WP-129 MUST BE DONE.

HOT TAPS

SCV WATER

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ENGINEERING SERVICES SECTION

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STD. DWG.
WP-128

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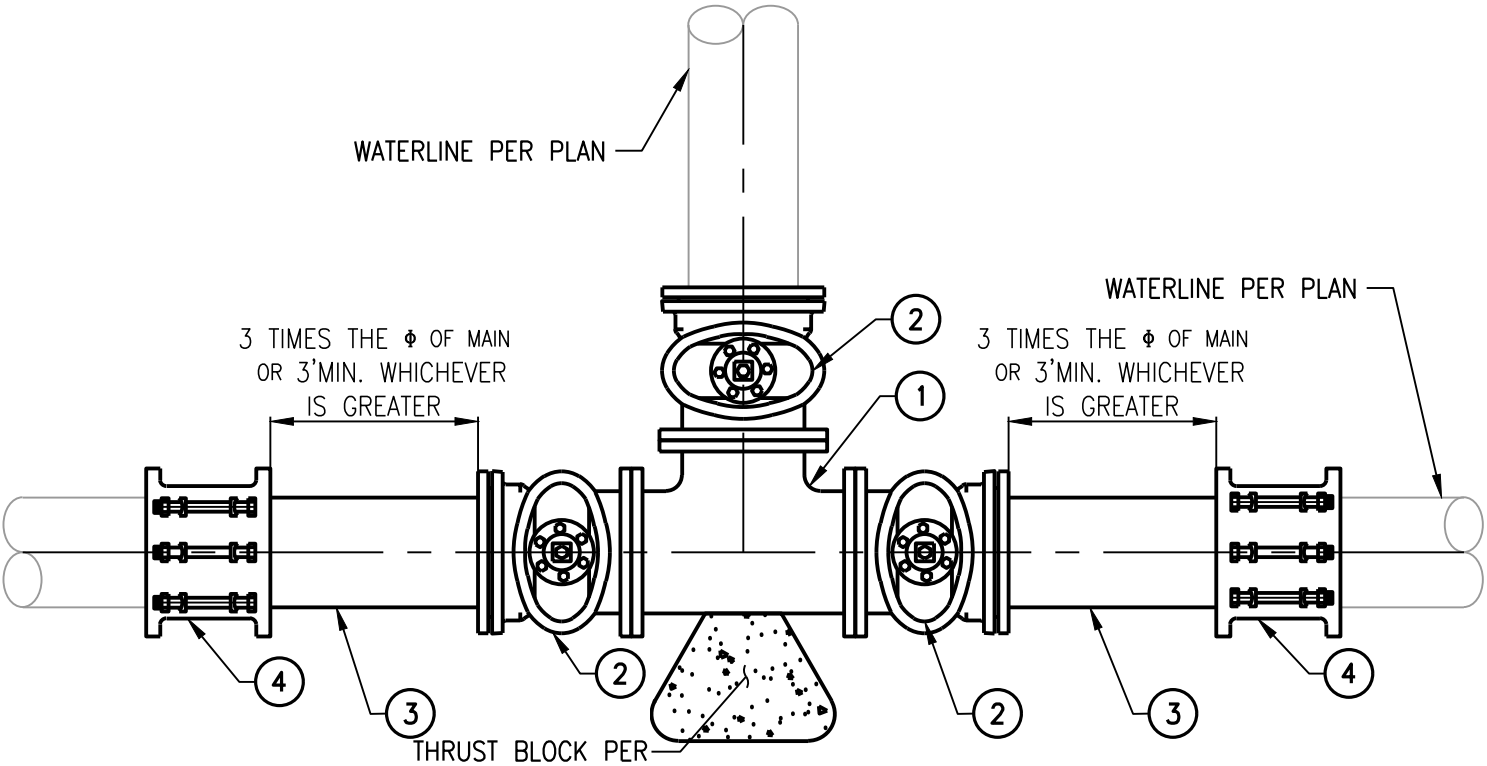
SHEET 1 OF 1

CUT IN TEE FOR PVC, DIP & ACP WATER MAINS



ITEM	MATERIALS
1	DI TEE (FLxFL), SIZE PER PLAN.
2	RW GATE VALVE OR BUTTERFLY VALVE (FLxMJ, RESTRAINED), QUANTITY AND SIZE PER PLAN.
3	DUCTILE IRON PIPE CLASS 350, SIZE & LENGTH PER PLAN.
4	COUPLING, HYMAX OR EQUAL FOR AC AND PVC. RESTRAINED MJ SLEEVE TO BE USED FOR DIP.

NOTES:

1. ALL MATERIALS SUPPLIED SHALL BE NEW AND MEET OR EXCEED AWWA SPECIFICATIONS.
2. THIS METHOD MAY BE USED FOR STEEL WATER MAINS ONLY IF APPROVED BY THE AGENCY.
3. CONTRACT SHALL POTHOLE AND VERIFY DEPTH, COLLAR/BELL, LOCATION AND O.D. OF WATER MAIN PRIOR TO COMMENCING ANY CUT-IN TEE WORK.
4. ENCASE PIPE AND FITTINGS WITH ONE LAYER OF V-BIO 8-MIL POLYETHYLENE FILM. ADD ONE LAYER OF PURPLE 8-MIL POLYETHYLENE FILM OVER V-BIO FILM LAYER FOR RECYCLED WATER SYSTEMS.
5. BLUE LOCATING WIRE, 12 GAUGE HMWPE SOLID STRAND. USE PURPLE LOCATING WIRE FOR RECYCLED WATER SERVICES. SPLICE AS NECESSARY USING 3M GREASE TUBE NUT (DBR/Y6) OR EQUAL
6. APPLY BITUMASTIC COATING TO ALL NUTS, BOLTS AND WASHERS.
7. ALL RUBBER MUST BE E.P.D.M, INCLUDING BINDER ON NON-ASBESTOS GASKETS.
8. NO BELLS/COLLARS ARE ALLOWED WITHIN 3-FEET FROM COUPLING. CONTRACTOR TO DIG IN EACH DIRECTION AND CONFIRM NO BELLS/COLLARS ARE PRESENT.
9. PRIOR TO REMOVING ASBESTOS CEMENT PIPE CONTRACTOR SHALL BE ASBESTOS CEMENT PIPE TRAINED PER CAL OSHA AND SHALL PROVIDE THE AGENCY W/ASBESTOS CEMENT PIPE CERTIFICATION AND SHALL A REMOVAL PLAN TO THE AGENCY PRIOR TO PRE-CONSTRUCTION MEETING.
10. TRENCH AND THRUST BLOCK SHALL BE PER STANDARD DRAWING WP-101 AND WP-102 (NOT SHOWN).

CUT-IN TEE

SCV WATER

SANTA CLARITA VALLEY WATER AGENCY
ENGINEERING SERVICES SECTION

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WP-129

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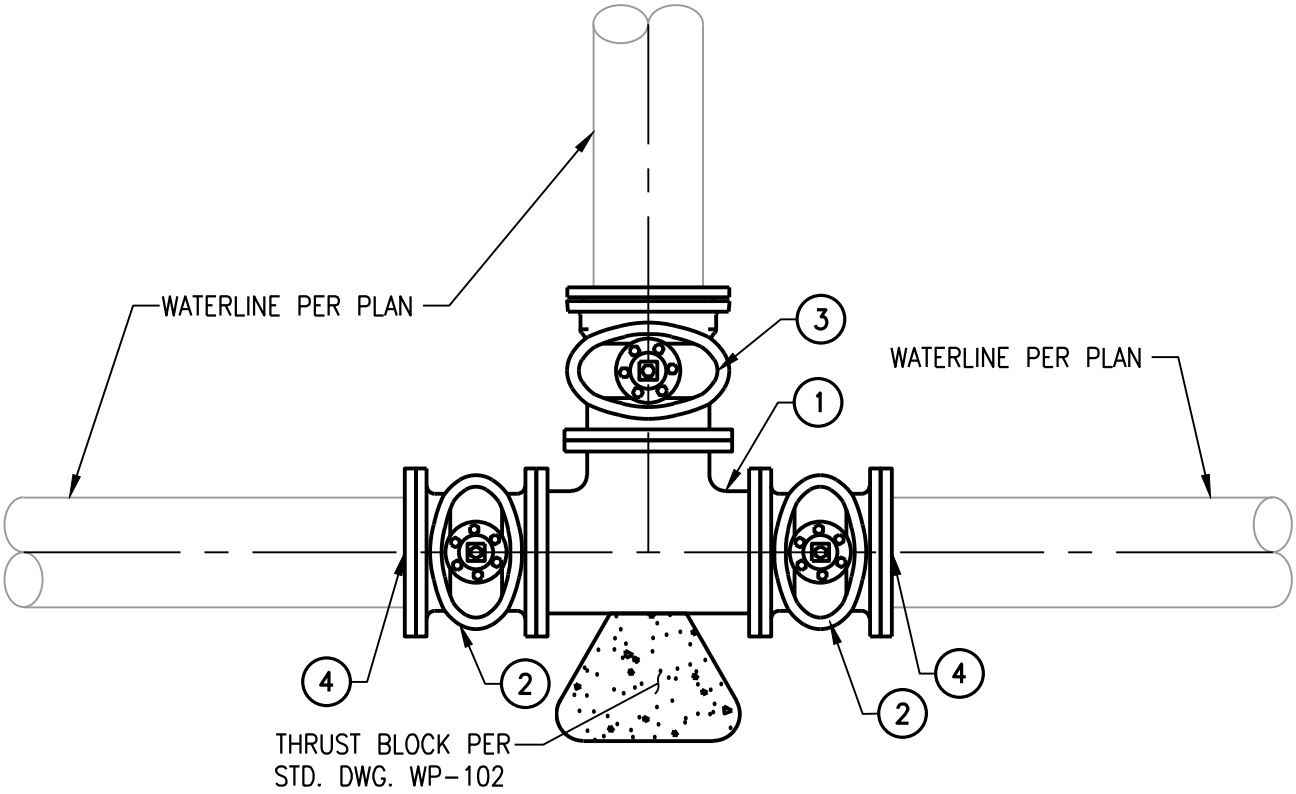
CUT IN TEE FOR STEEL MAINS



ITEM	MATERIALS
1	DI TEE (FLxFL), SIZE PER PLAN.
2	RW GATE VALVE OR BUTTERFLY VALVE (FLxFL).
3	RW GATE VALVE OR BUTTERFLY VALVE (FLxMJ).
4	WELD-ON FLANGE (250 PSI RATING MIN.) SIZED TO FIT STEEL PIPE.

NOTES:

1. ALL MATERIALS SUPPLIED SHALL BE NEW AND MEET OR EXCEED AWWA SPECIFICATIONS.
2. THIS METHOD MAY BE USED FOR STEEL WATER MAINS ONLY IF APPROVED BY THE AGENCY.
3. CONTRACT SHALL POTHOLE AND VERIFY DEPTH, COLLAR/BELL, LOCATION AND O.D. OF WATER MAIN PRIOR TO COMMENCING ANY CUT-IN TEE WORK.
4. ENCASE PIPE AND FITTINGS WITH ONE LAYER OF V-BIO 8-MIL POLYETHYLENE FILM. ADD ONE LAYER OF PURPLE 8-MIL POLYETHYLENE FILM OVER V-BIO FILM LAYER FOR RECYCLED WATER SYSTEM.
5. BLUE LOCATING WIRE, 12 GAUGE HMWPE SOLID STRAND. USE PURPLE LOCATING WIRE FOR RECYCLED WATER SERVICES. SPLICE AS NECESSARY USING 3M GREASE TUBE NUT (DBR/Y6) OR EQUAL
6. APPLY BITUMASTIC COATING TO ALL NUTS, BOLTS AND WASHERS.
7. ALL RUBBER MUST BE E.P.D.M, INCLUDING BINDER ON NON-ASBESTOS GASKETS GARLOCK OR APPROVED EQUAL.
8. STEEL LINING AND COATING SHALL BE REPLACED IN KIND.
9. NO BELLS/COLLARS ARE ALLOWED WITHIN 3-FEET FROM COUPLING. CONTRACTOR TO DIG IN EACH DIRECTION AND CONFIRM NO BELLS/COLLARS ARE PRESENT.
10. TRENCH AND THRUST BLOCK SHALL BE PER STANDARD DRAWING WP-101 AND WP-102 (NOT SHOWN).
11. ALL PIPE SHALL BE RECOATED WITH APPROVED MORTAR PER AWWA C205.

CUT-IN TEE FOR STEEL WATER MAINS

SCV WATER

SANTA CLARITA VALLEY WATER AGENCY
ENGINEERING SERVICES SECTION

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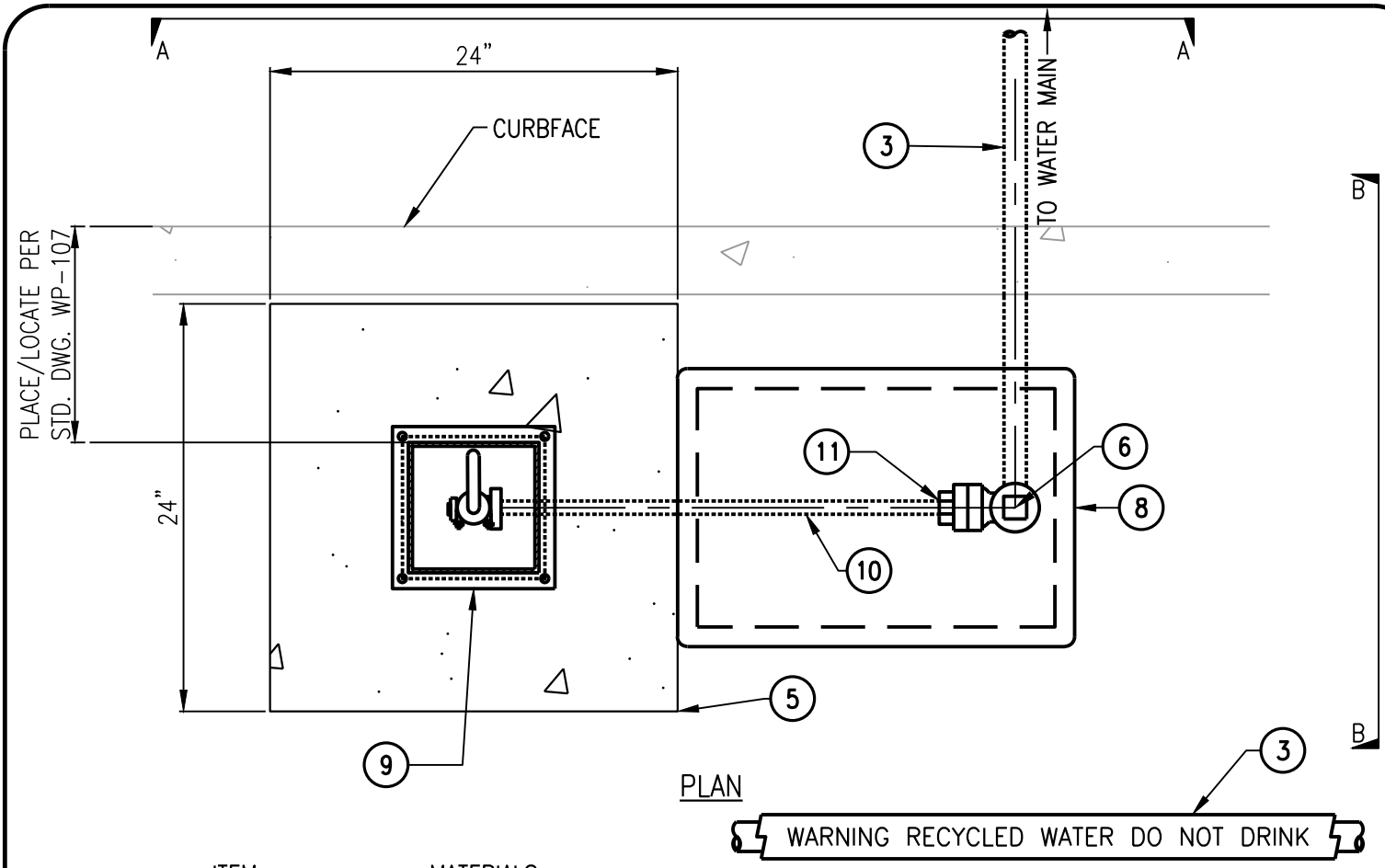

ITEM	MATERIALS
1	1"SADDLE/OUTLET (VARIES BY PIPE) FIPT, SEE SHEET 2.
2	1" MIPTx COMP CTS-PJ BALL TYPE, CORP STOP, ROTATE TOP OF NUT TO 90°.
3	1" BLUE MUNICIPEX-REHAU WITH INSERTS. USE PURPLE MUNICIPEX FOR RECYCLED WATER SYSTEMS IF AVAILABLE. IF UNAVAILABLE. ENCASE IN PURPLE SLEEVE LABELED "WARNING RECYCLED WATER DO NOT DRINK".
4	BLUE LOCATING WIRE, 12 GAUGE HMWPE SOLID STRAND WITH 3M GREASE TUBE NUT (DBR/Y6) OR EQUAL. USE PURPLE LOCATING WIRE FOR RECYCLED WATER SYSTEMS.
5	24"x24"x8" CONCRETE PAD (2500 PSI).
6	1" ANGLE METER STOP W/METER COUPLING, BALL TYPE ANGLE STOP PACK JOINT OR EQUAL EPDM.
7	1"x 90° COPPER SOLDER JOINT ELBOW.
8	METER BOX PER STD. DWG. WP-125A.
9	AMC SAMPLING STATION EZ-01F-ST, 44" TALL, OR APPROVED EQUAL.
10	1/2" RIGID COPPER TYPE K.
11	1-1/4"x1" COPPER SOLDER JOINT MIP.

CONTINUED ON SHEET 2

WATER SAMPLE STATION

SCV WATER

SANTA CLARITA VALLEY WATER AGENCY
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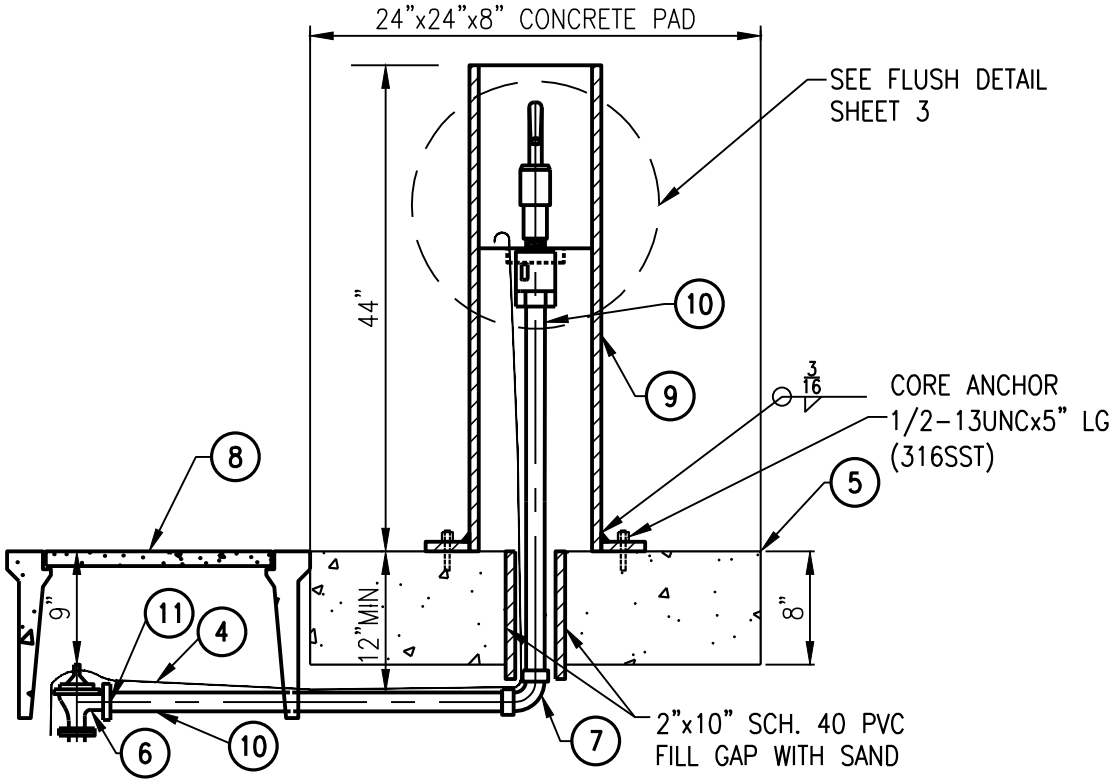
PIPE TYPE	SADDLE/OUTLET TYPE
*ACP (ASBESTOS CEMENT PIPE)	1" FORD #202B SERIES
*C-900 (POLYVINYL CHLORIDE PIPE)	1" ROMAC STYLE 202B W/EDPM
DIP (DUCTILE IRON PIPE)	1" FORD #202B SERIES
STEEL PIPE	1" WELD O LET
CML&S	1" WELD O LET

OR EQUAL EPDM
*ONLY APPLIES WHEN INSTALLING A NEW SERVICE ON AN EXISTING WATER SYSTEM.



SECTION A-A
NOT TO SCALE
SEE SHEET 1 FOR ITEMS AND MATERIALS

CONTINUED ON SHEET 3

WATER SAMPLE STATION

SCV WATER

SANTA CLARITA VALLEY WATER AGENCY
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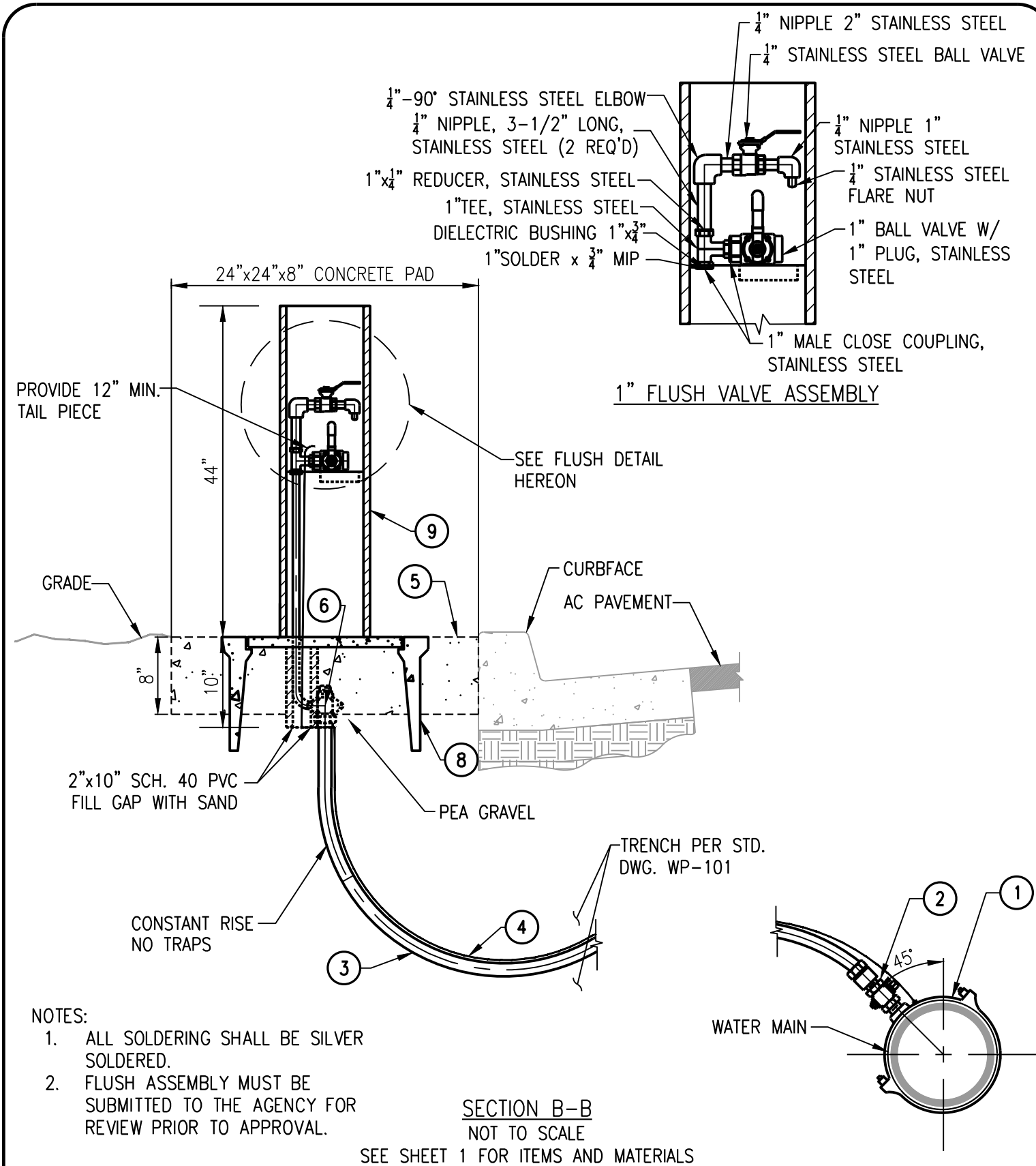

NOTES:

1. ALL SOLDERING SHALL BE SILVER SOLDERED.
2. FLUSH ASSEMBLY MUST BE SUBMITTED TO THE AGENCY FOR REVIEW PRIOR TO APPROVAL.

SECTION B-B
NOT TO SCALE

SEE SHEET 1 FOR ITEMS AND MATERIALS

WATER SAMPLE STATION

SCV WATER

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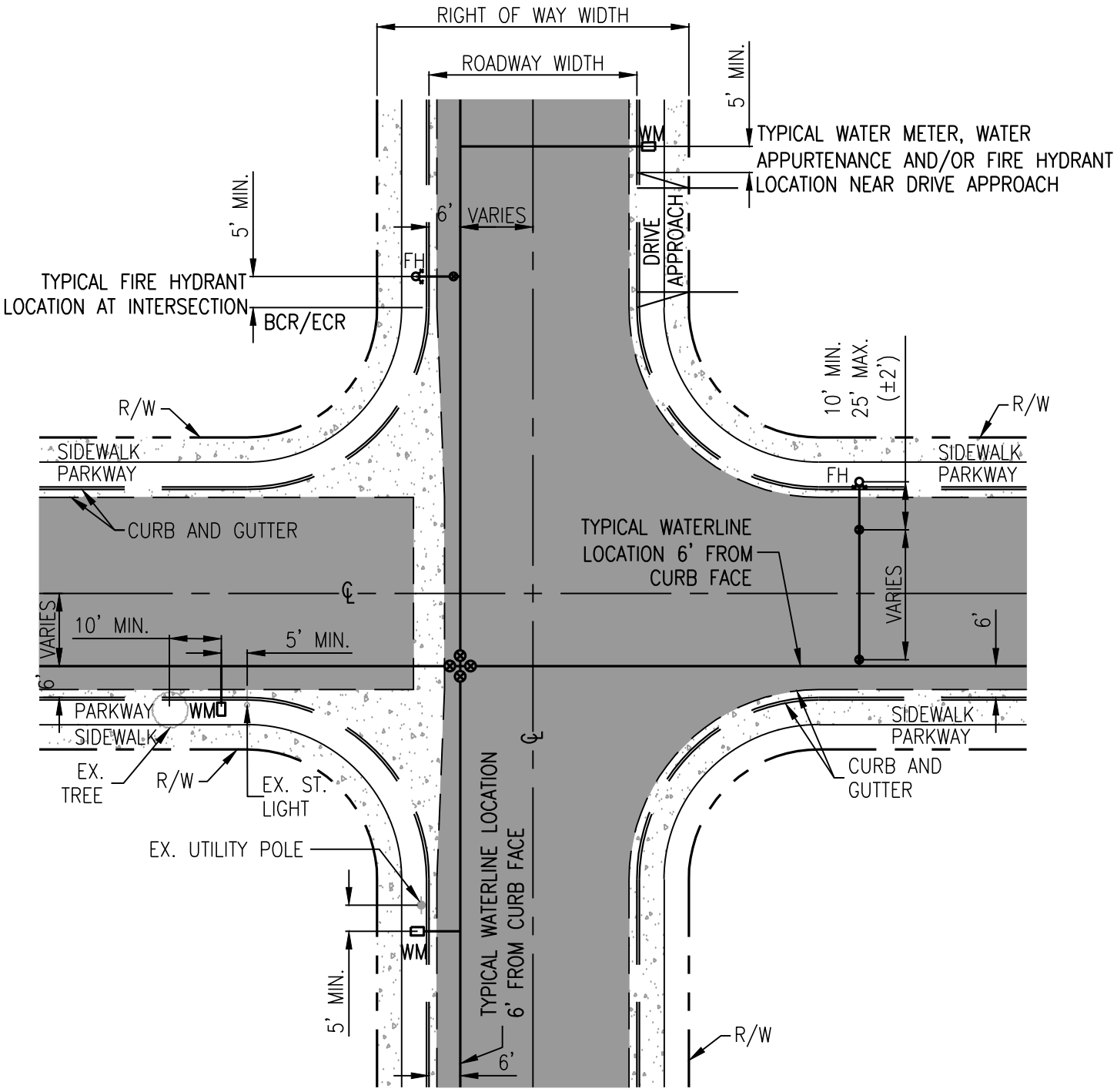
SHEET 3 OF 3



CONTINUED ON SHEET 2

TYPICAL WATER FACILITY INSTALLATION

SCV WATER

SANTA CLARITA VALLEY WATER AGENCY
ENGINEERING SERVICES SECTION

APPROVED BY:

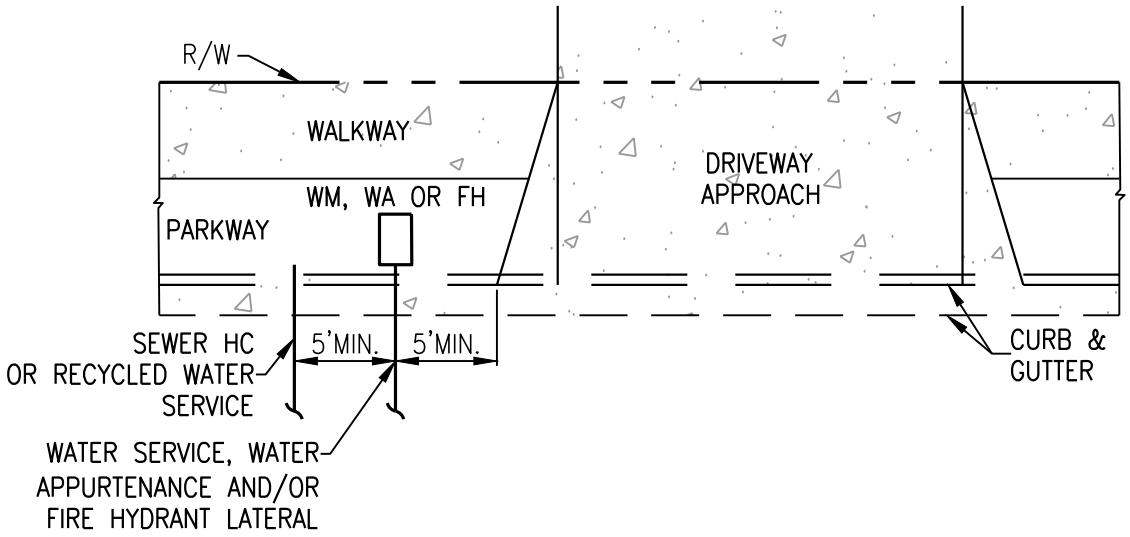
COURTNEY MAEL, P.E. 84647
CHIEF ENGINEER

7/20/2022
DATE

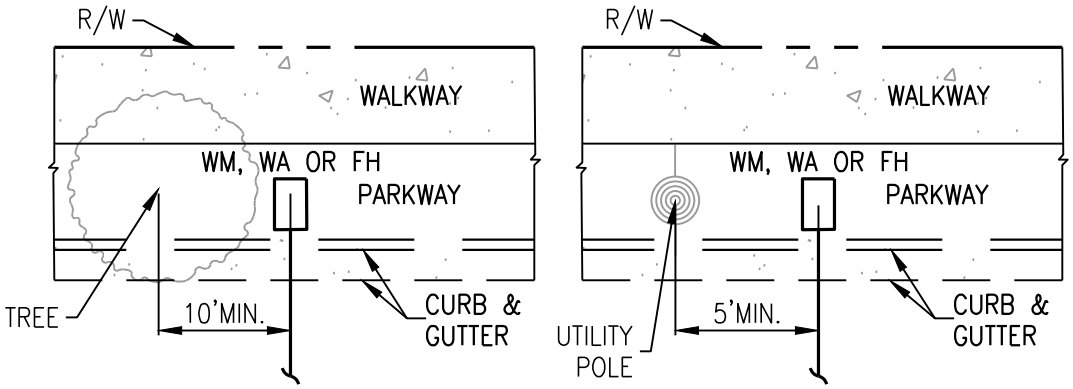
STD. DWG.
WP-131

REV. 1.0

TYPICAL WATER METER, WATER APPURTENANCE AND/OR FIRE HYDRANT LOCATION NEAR DRIVEWAY APPROACHES



TYPICAL WATER METER WATER METER, WATER APPURTENANCE AND/OR FIRE HYDRANT LOCATION LOCATION NEAR TREES AND LIGHT POST/UTILITY POLES



NOTES:

1. WATERLINE SIZE TO BE DETERMINED BY PLANNING STUDY AND/OR WATER PLANS.
2. GATE VALVES AND VALVE BOX ASSEMBLY NOT TO BE LOCATED IN CONCRETE GUTTER.
3. NEW WATER MAINS SHALL BE INSTALLED ON THE OPPOSITE SIDE OF THE STREET FROM SEWER MAINS AND SHALL BE 10' MIN. AWAY FROM ANY SEWER OR NON-POTABLE LINE. SEE STD. DWG. WP-126.
4. ANY EXISTING OR NEW WATER APPURTENANCE THAT MAY INTERFERE WITH ANY PROPOSED DRIVEWAY, OTHER UTILITY OR APPURTENANCE MUST BE RELOCATED AT THE EXPENSE OF THE APPLICANT, IN ORDER TO MEET ALL CLEARANCES SHOWN HEREON.
5. MINIMUM SEPARATION FROM ANY BCR/ERC SHALL BE 5-FEET FROM ANY WATER APPURTENANCE.
6. ROOT BARRIER(S) SHALL BE INSTALLED FOR ANY WATER MAIN (OR WATER APPURTENANCE) THAT IS LESS THAN 10-FEET FROM A TREE OR AT THE DISCRETION OF THE AGENCY REPRESENTATIVE.

TYPICAL WATER FACILITY INSTALLATION

SCV WATER

SANTA CLARITA VALLEY WATER AGENCY
ENGINEERING SERVICES SECTION

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7/20/2022
DATE

STD. DWG.
WP-131

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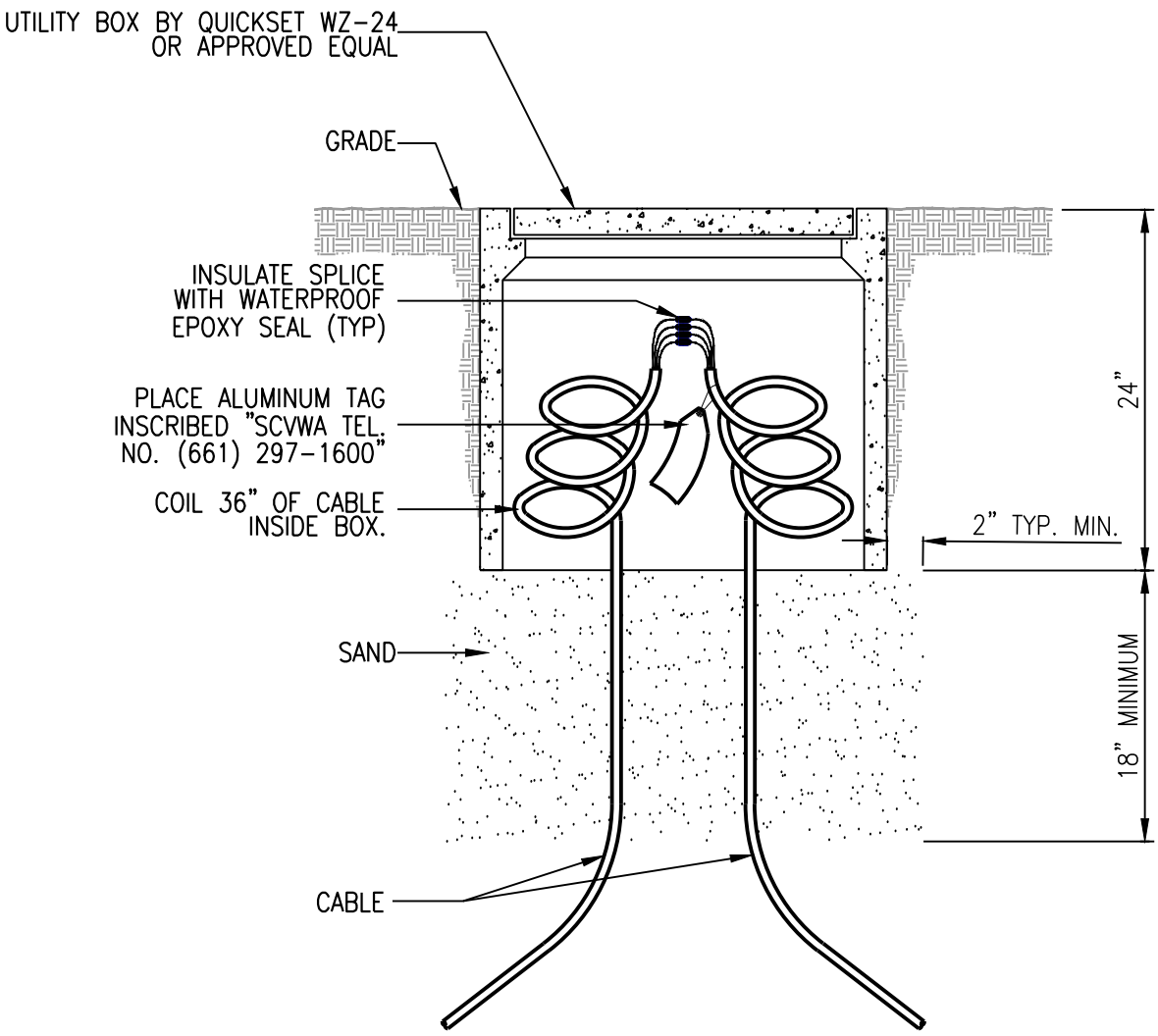
SHEET 2 OF 2



DIRECT BURIAL CONTROL CABLE SPLICE

SCV WATER

SANTA CLARITA VALLEY WATER AGENCY
ENGINEERING SERVICES SECTION

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7/20/2022
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STD. DWG.
WP-134

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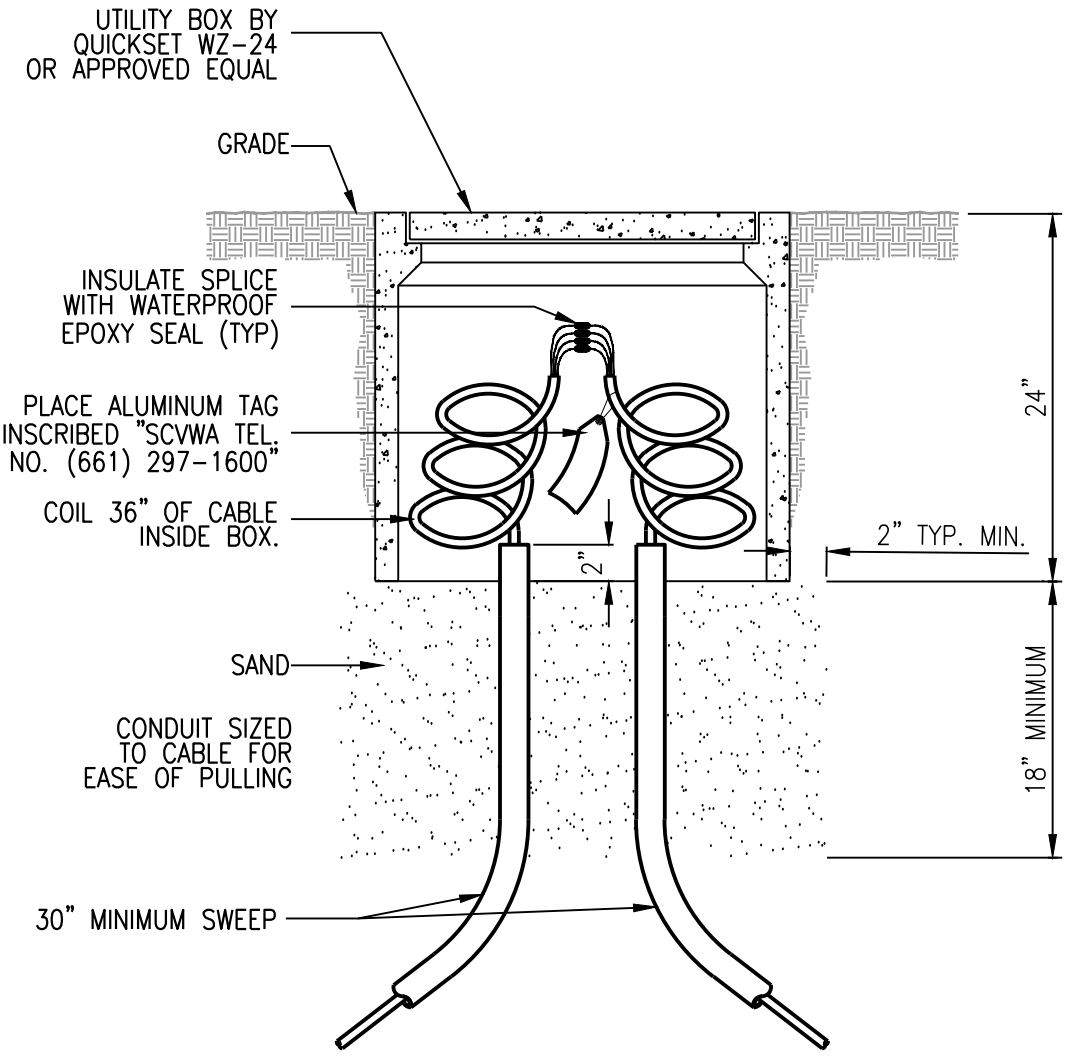
SHEET 1 OF 1



TYPICAL CONTROL CABLE SPLICE

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ENGINEERING SERVICES SECTION

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7/20/2022
DATE

STD. DWG.
WP-135

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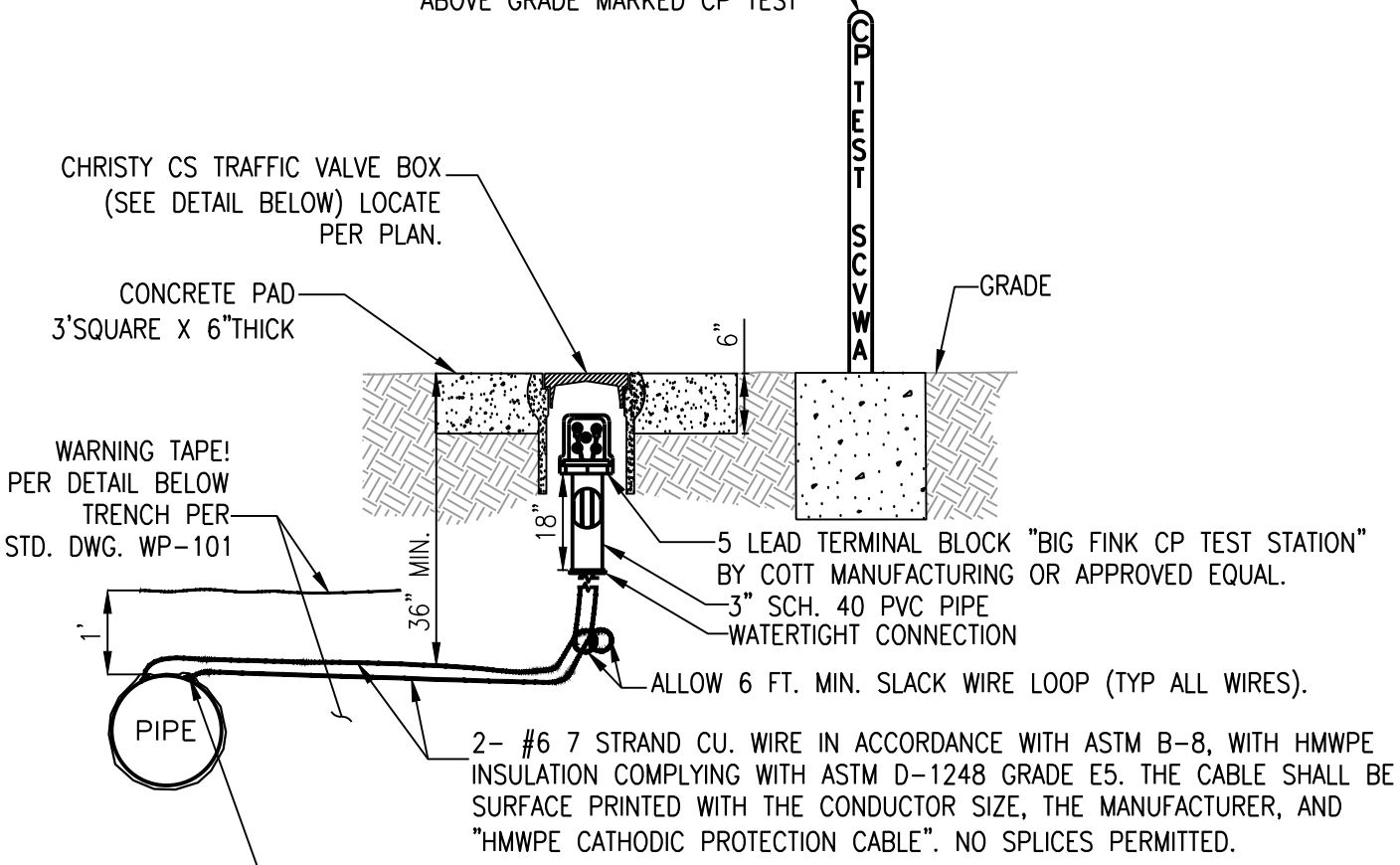
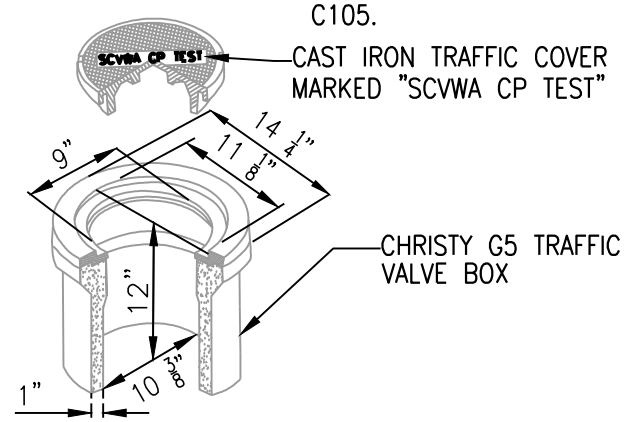
SHEET 1 OF 1

INSTALL ONE 4" GALVANIZED STEEL POST (PAINTED WITH VISIBILITY OSHA YELLOW) AT ONE CORNER OF CONCRETE PAD ON TRAFFIC SIDE, IMBED POST IN 24" OF CONCRETE 2' BELOW GRADE AND EXTEND 3' ABOVE GRADE MARKED CP TEST





CHRISTY CS TRAFFIC VALVE BOX

WARNING TAPE: POLYETHYLENE, 6" WIDE, APWA RED, IMPRINTED CONTINUOUSLY WITH: CAUTION,BURIED CATHODIC PROTECTION LINE BELOW IN BLACK

WARNING TAPE

TEST STATION WIRING DIAGRAM
NOT TO SCALE

CONTINUED ON SHEET 2

CATHODIC PROTECTION

SCV WATER

SANTA CLARITA VALLEY WATER AGENCY
ENGINEERING SERVICES SECTION

APPROVED BY:

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7/20/2022
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WP-136

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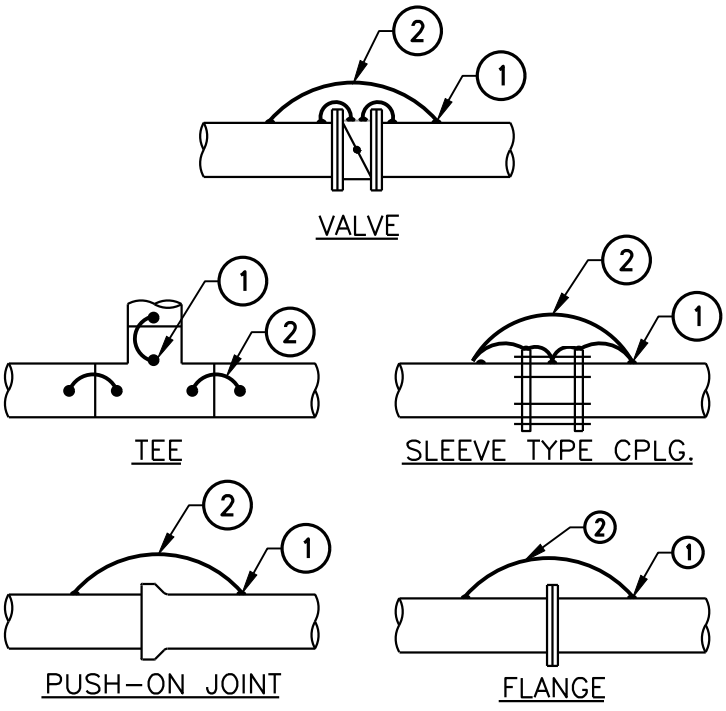

(1) CLEAN SURFACE WITH WIRE BRUSH METHOD AND GRIND TO BRIGHT METAL PRIOR TO WELDING. ATTACH WIRES TO PIPE USING EXOTHERMIC WELDING PROCESS IN ACCORDANCE WITH ERICO ENGINEERING SPECIFICATION A 160-A05. COAT EACH WELD WITH A ROYSTON "HANDY CAP" NO. 2 WELD COVER TAKING CARE TO ENSURE THAT ALL EXPOSED METAL IS COVERED.

(2) INSTALL #2 STRAND CU. WIRE IN ACCORDANCE WITH ASTM B-8, WITH HMWPE INSULATION COMPLYING WITH ASTM D-1248 GRADE E5. THE CABLE SHALL BE SURFACE PRINTED WITH THE CONDUCTOR SIZE, THE MANUFACTURER, AND "HWMPE CATHODIC PROTECTION CABLE". NO SPLICES PERMITTED.

NOTE:
THE MINIMUM NUMBER OF BONDING WIRES SHALL BE 3 EA. PER PIPE 18" & LARGER PLACED SYMMETRICALLY AROUND PIPE, 2 EA. FOR PIPE 16" & SMALLER PLACED 180° APART.

BONDING DETAIL
NOT TO SCALE

CATHODIC PROTECTION

SCV WATER

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7/20/2022
DATE

STD. DWG.
WP-136

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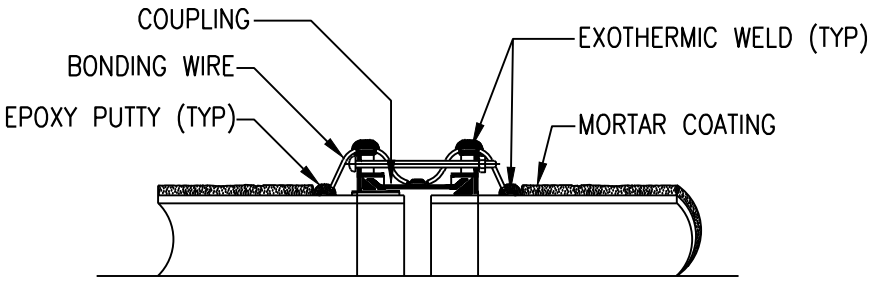
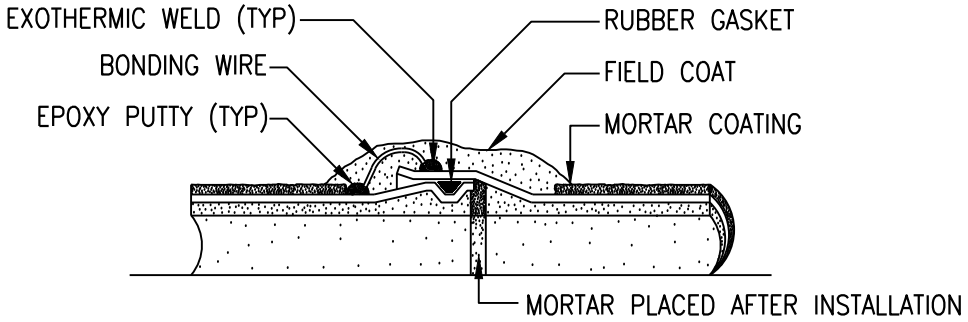
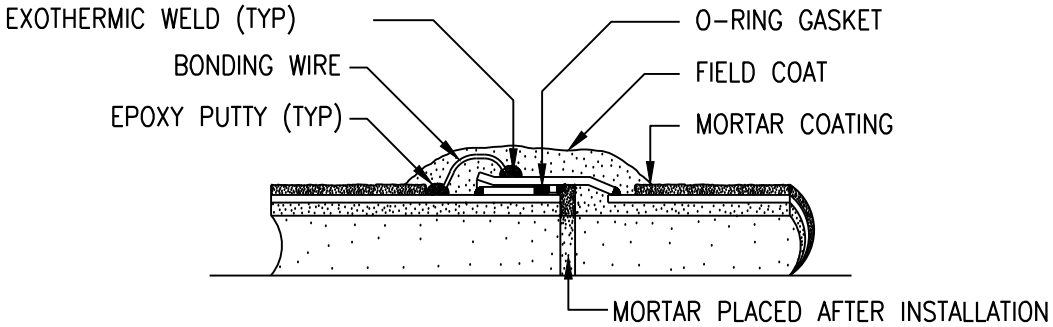


SLEEVE TYPE COUPLING



ROLLED SPIGOT JOINT



O-RING JOINT

NOTES:

1. FOR EXOTHERMIC CONNECTION GUIDE SEE STD. DWG. NO. WP-138. USE CAST IRON CHARGE FOR ALL APPLICATION.
2. MIX AND FIRMLY APPLY EPOXY PUTTY TO PROVIDE A WATER TIGHT SEAL AT LEAST 1/4" THICK OVER WELD AND BARE WIRE. OVERLAP COATING AND WIRE INSULATION BY 1/2".
3. USE STRANDED COPPER WIRE, NO. 8TW, 600 VOLTS, UNLESS OTHERWISE SPECIFIED.

BONDING JUMPERS

SCV WATER

SANTA CLARITA VALLEY WATER AGENCY
ENGINEERING SERVICES SECTION

APPROVED BY:

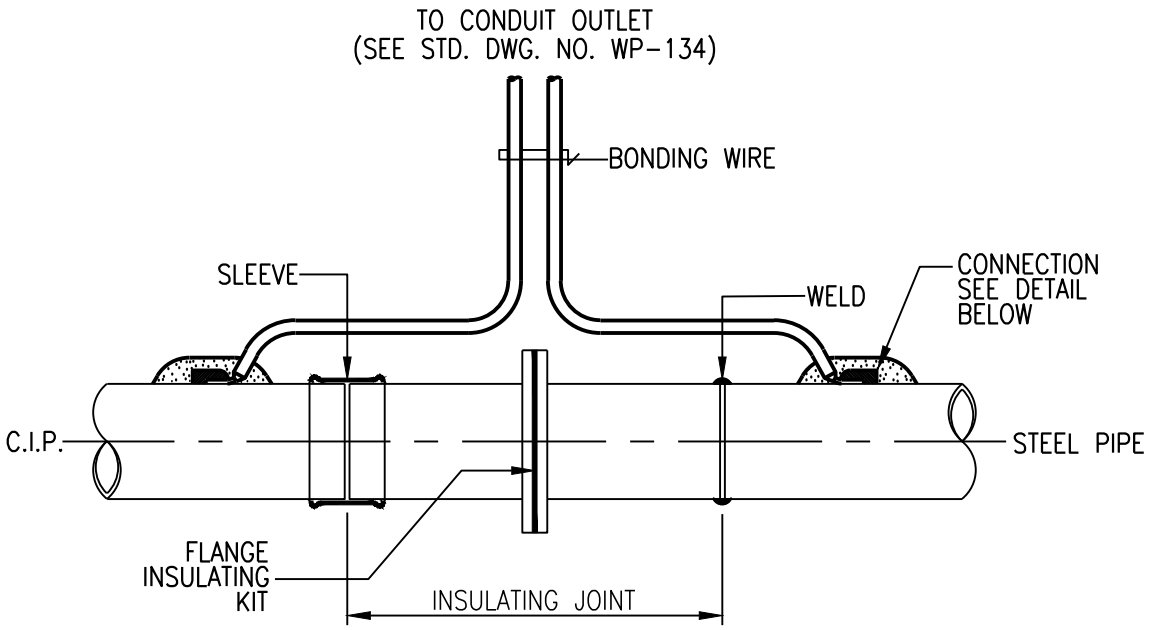
COURTNEY MAEL, P.E. 84647
CHIEF ENGINEER

7/20/2022
DATE

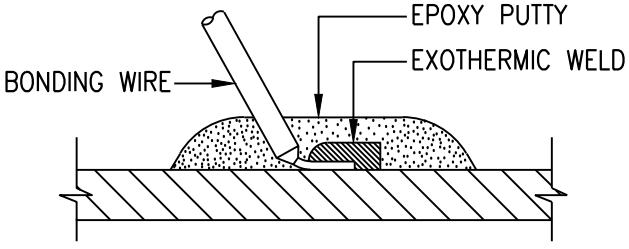
STD. DWG.
WP-137

REV. 1.0

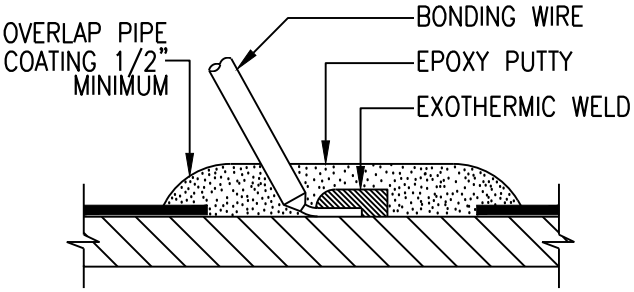
SHEET 1 OF 1



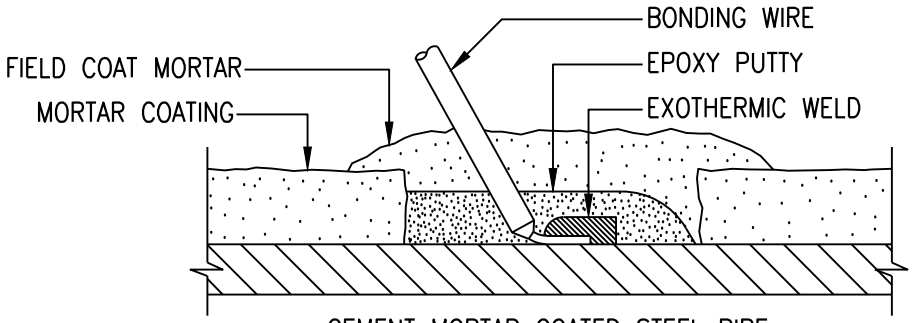
TYPICAL INSULATING JOINT WITH
TEST LEAD CONNECTION



CAST IRON PIPE CONNECTION



COATED STEEL OR DIP CONNECTION



CEMENT MORTAR COATED STEEL PIPE

NOTES:

1. MIX AND FIRMLY APPLY EPOXY PUTTY TO PROVIDE A WATER TIGHT SEAL AT LEAST 1/4" THICK OVER WELD AND BARE WIRE. OVERLAP COATING AND WIRE INSULATION BY 1/2".
2. USE STRANDED COPPER WIRE, NO. 8TW, 600 VOLTS, UNLESS OTHERWISE SPECIFIED.

TYPICAL JUMPER CONNECTIONS

SCV WATER

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ENGINEERING SERVICES SECTION

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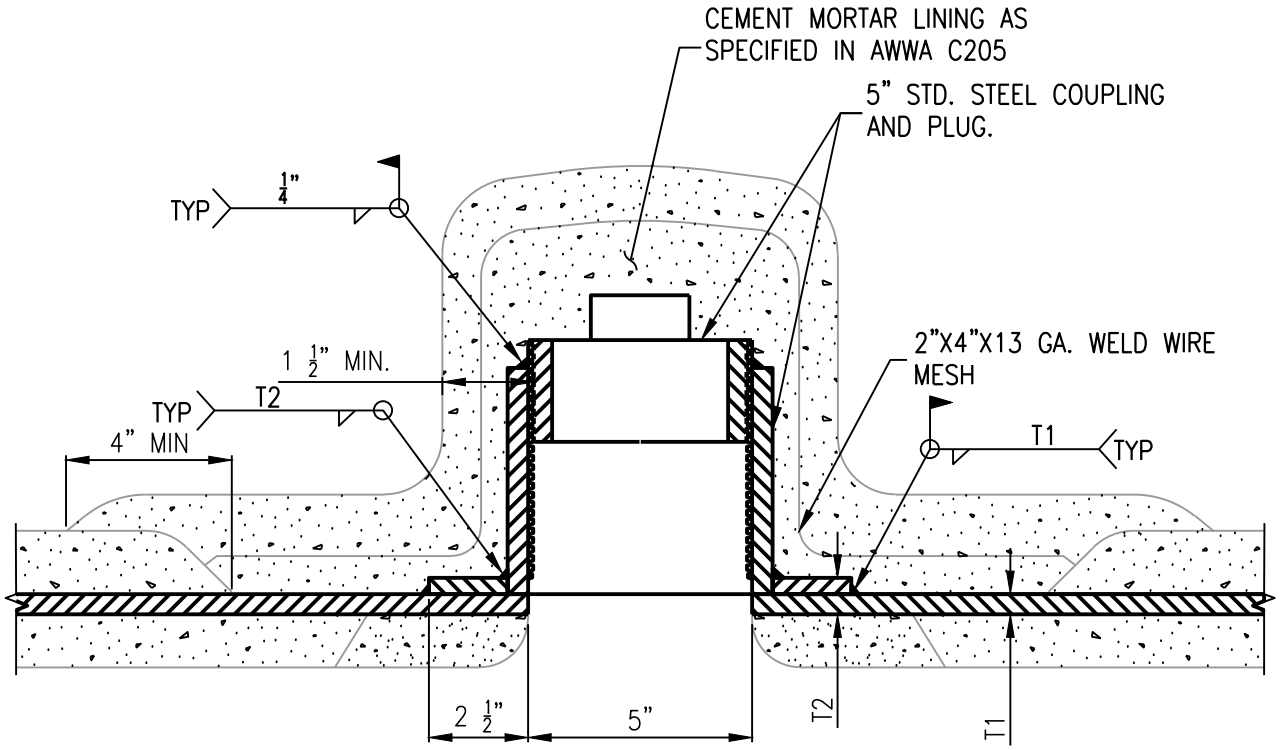
CHIEF ENGINEER

7/20/2022
DATE

STD. DWG.
WP-138

REV. 1.0

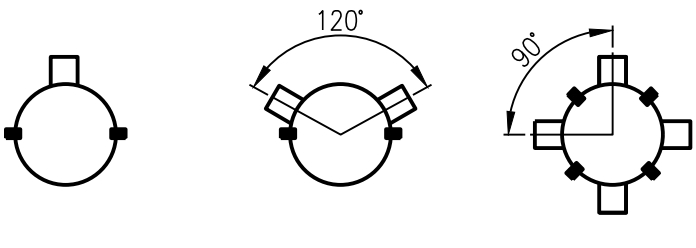
SHEET 1 OF 1



HANDHOLE

HANDHOLE NOTES

1. ONE HANDHOLE IS REQUIRED FOR PIPE DIAMETER 16" OR LESS. SEE BELOW FOR ORIENTATION.
2. TWO HANDHOLES ARE REQUIRED FOR PIPE DIAMETER 18" TO 24". SEE BELOW ORIENTATION.
3. FOUR HANDHOLES ARE REQUIRED FOR PIPE DIAMETER 30" OR LARGER. SEE BELOW FOR ORIENTATION
4. HANDHOLES ARE NOT REQUIRED FOR PIPELINES IF MANWAYS ARE WITHIN 1000 FEET. FOR PIPELINES 24 INCHES DIAMETER AND LARGER.



LEGEND

■ BUT WELD LOCATION FOR JOINING COLLAR PIECES

HANDHOLE LOCATION

GENERAL NOTES

1. ROLLED STEEL WELD COLLARS ("BUT STRAPS") SHALL NOT BE HEATED OR HAMMERED TO FIT O.D. OF SMALLER PIPE. USE FILLER BAR AS SHOWN, WHERE NECESSARY.
2. WELD IS REQUIRED ONLY WHERE FILLER BAR IS USED.

MORTAR LINED AND COATED STEEL PIPE BUTT-STAP

SCV WATER

SANTA CLARITA VALLEY WATER AGENCY
ENGINEERING SERVICES SECTION

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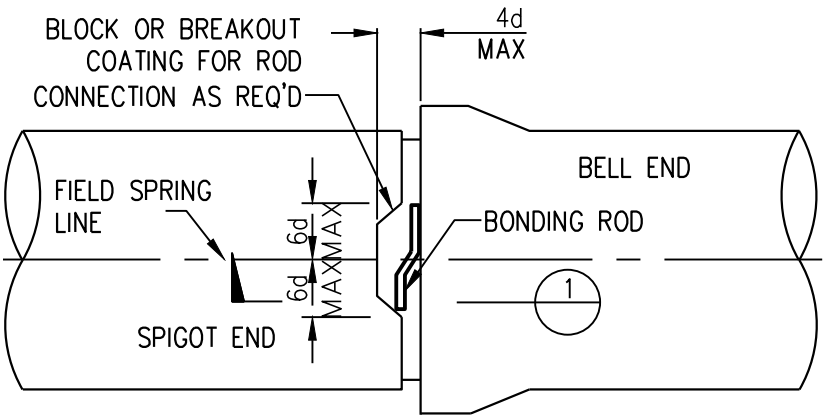
7/20/2022
DATE

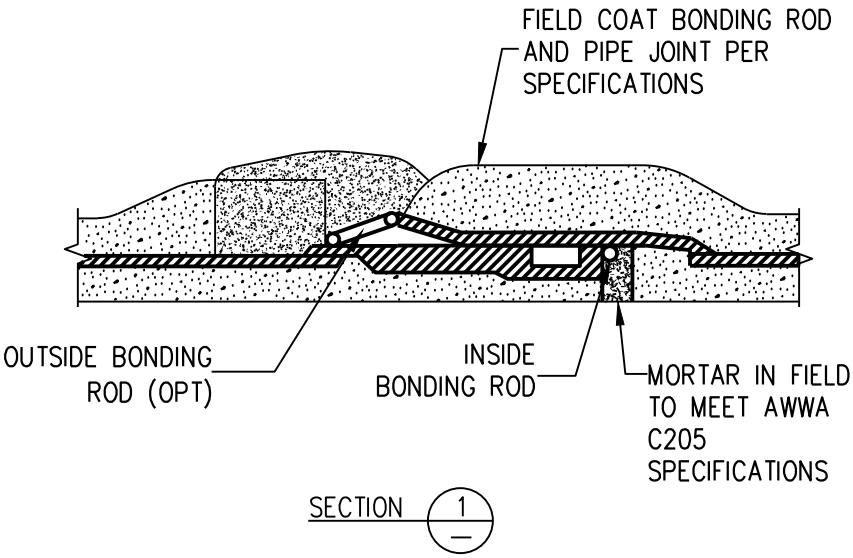
STD. DWG.
WP-139

REV. 1.0

SHEET 1 OF 1

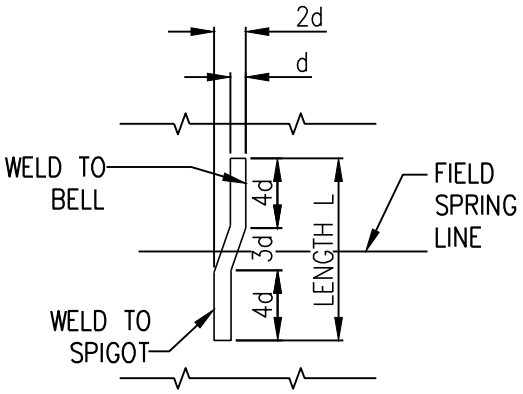


SIDE VIEW



SECTION 1

ALL PIPE JOINTS SHALL BE BONDED, EXCEPT FOR WELDED JOINTS.



BONDING ROD

PIPE DIA	UNDER 27"	27" AND LARGER
d	0.25"	0.50"
L	3.75"	5.50"
NO. OF RODS PER JOINT	2	3

JOINT BONDING-WELDED STEEL PIPE

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DATE

STD. DWG.
WP-140

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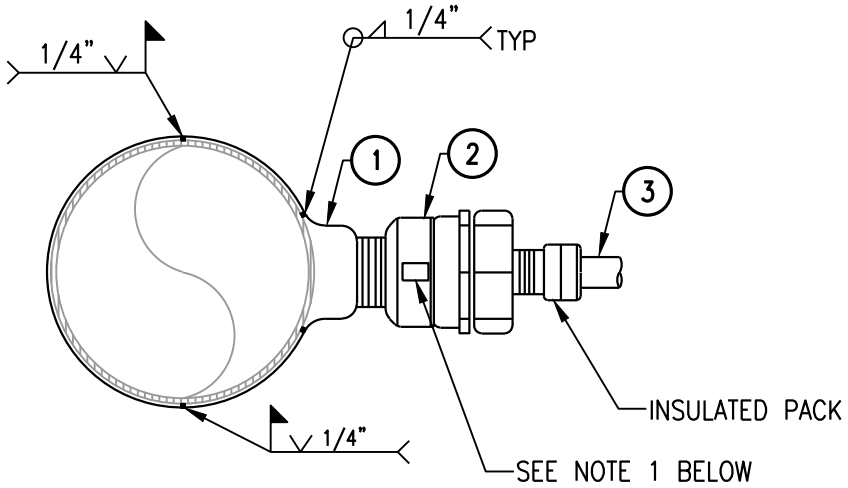
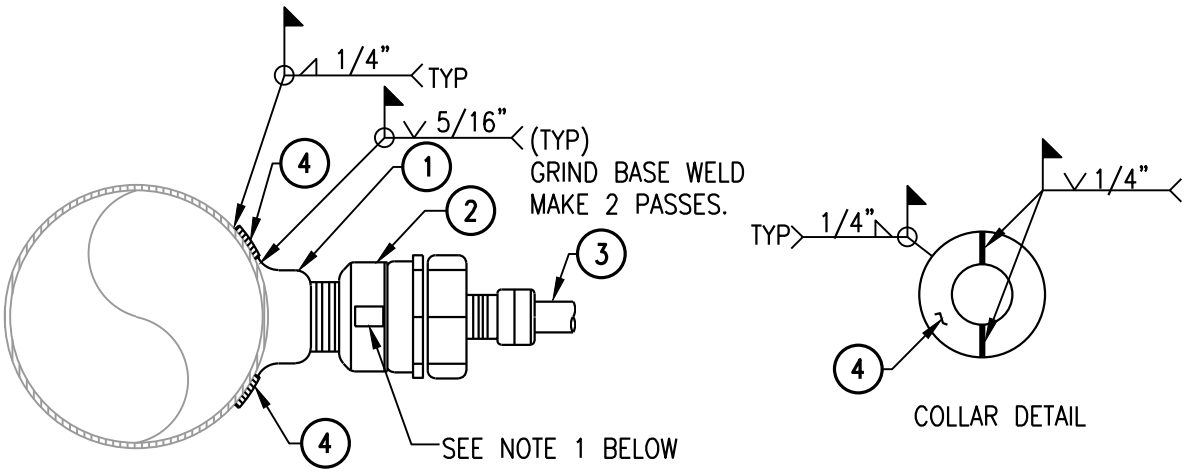
SHEET 1 OF 1



STEEL PIPE 3/16" OR THINNER

ITEM	MATERIALS
1	1/4" THICK 2-PIECE 6" WIDE ROLLED WEDDING BAND REINFORCING STRAP WITH EXTRA HEAVY WELDED STEEL OUTLET (THREAD-O-LET) COUPLING, W/ 1" OR 2" F.I.P.T. OUTLET.
2	1" OR 2" INSULATING BRONZE BALL CORPORATION STOP, M.I.P.T. X COMPRESSION.
3	1" OR 2" MUNICIPEX-REHAU W/INSERTS, SEE STD. DWG NO. WP-101 & WP-109.



STEEL PIPE 1/4" OR THICKER

ITEM	MATERIALS
1	EXTRA HEAVY WELDED STEEL OUTLET (THREAD-O-LET) COUPLING, WITH 1" OR 2" F.I.P.T. OUTLET.
2	1" OR 2" INSULATING BRONZE BALL CORPORATION STOP, M.I.P.T. X FIPT.
3	1" OR 2" MUNICIPEX-REHAU W/INSERTS, SEE STD. DWG NO. WP-101 & WP-109.
4	3" WIDE, 2-PIECE STEEL ANNULAR REINFORCING COLLAR 1/4" THICK PLATE, ROLL TO FIT PIPE RADIUS.

NOTES:
1. PLACE OPERATING NUT POSITION AS SHOWN.
2. OUTLET SIZE SHALL BE SIZED ACCORDINGLY TO ACCOMMODATE A DIELECTRIC BUSHING.

1-INCH OR 2-INCH SERVICE CONNECTION TO STEEL PIPE

SCV WATER

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ENGINEERING SERVICES SECTION

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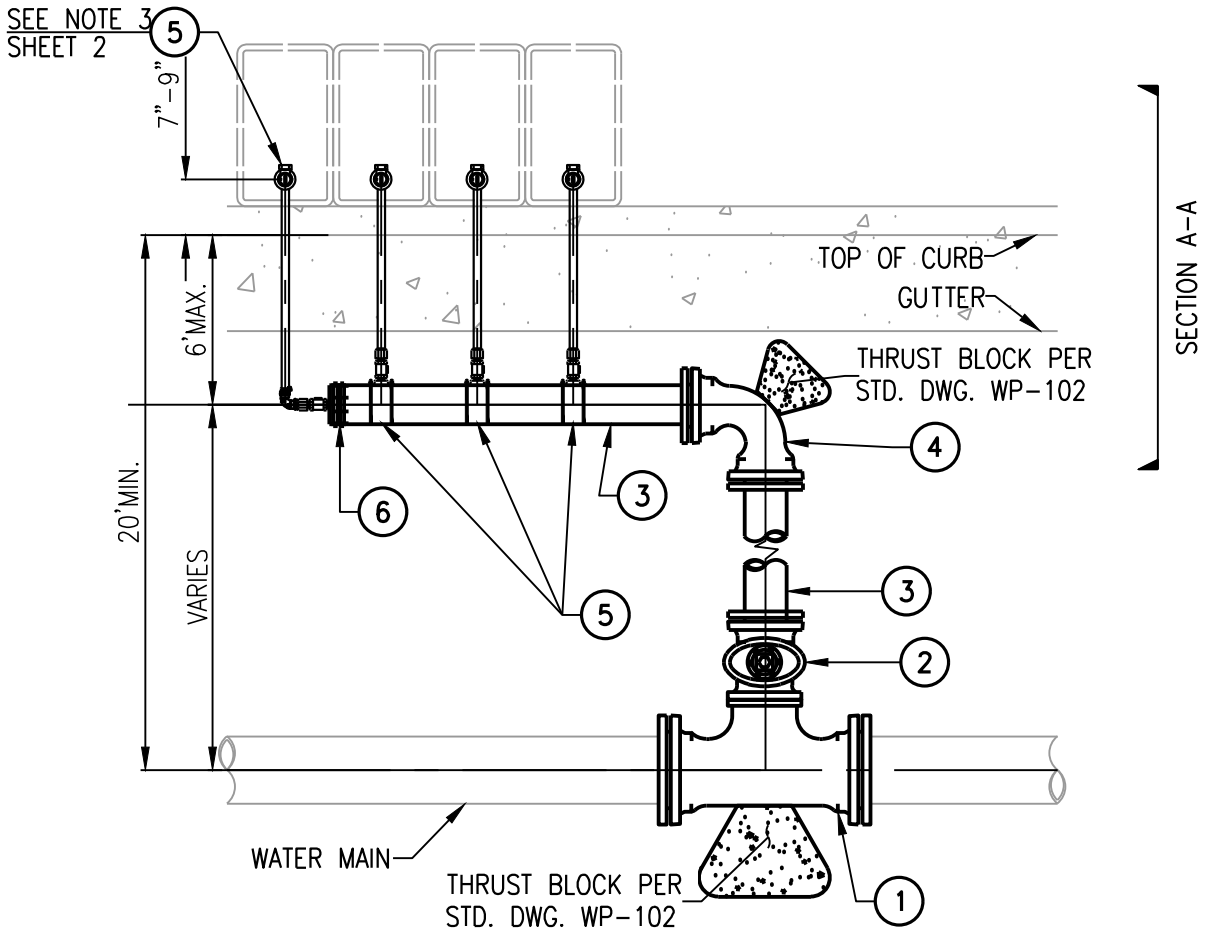
7/20/2022
DATE

STD. DWG.
WP-141

REV. 1.0

SHEET 1 OF 1

SERVICE MANIFOLD:



ITEM	MATERIALS
1	MJxFL DI TEE, RESTRAINED, MIN SIZE 8"x6", MAX OUTLET SIZE 8".
2	RW GATE VALVE, SAME SIZE AS OUTLET SIZE. MIN. 6"–MAX 8".
3	DIP CLASS 350, RESTRAINED, SAME SIZE AS OUTLET & LENGTH PER PLAN.
4	90° DI BEND MJxMJ, RESTRAINED, SAME SIZE AS OUTLET.
5	1" OR 2" SERVICE PER STD. DWG. WP–109, SEE SHEET 2.
6	END CAP MJxMJ W/1" OR 2" OUTLET, RESTRAINED.

CONTINUED ON SHEET 2

SERVICE MANIFOLD

SCV WATER

SANTA CLARITA VALLEY WATER AGENCY
ENGINEERING SERVICES SECTION

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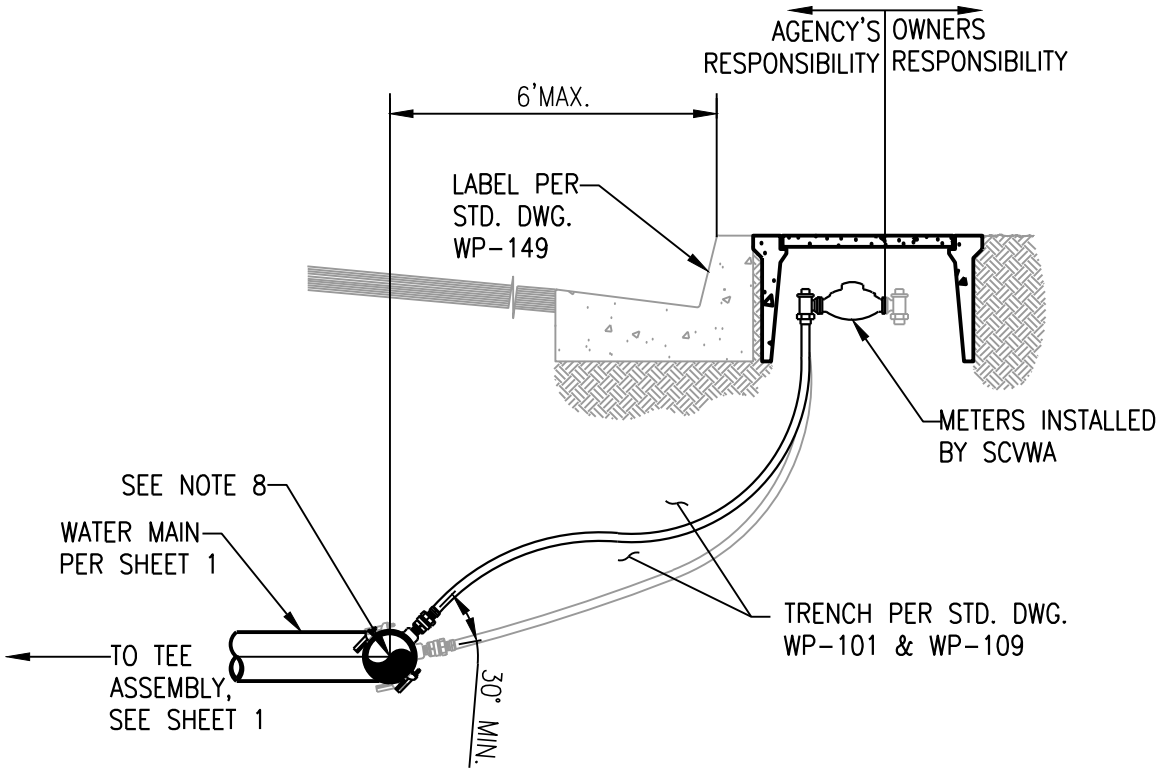
7/20/2022
DATE

STD. DWG.
WP-142

REV. 1.0

SECTION A-A



NOTES:

1. SERVICE MANIFOLDS MAY NOT BE HOT TAPPED.
2. MAXIMUM NUMBER OF SERVICES ALLOWED PER MANIFOLD ARE 6 AND SHALL HAVE A MINIMUM OF 3 SERVICES.
3. THIS END SERVICE SHALL BE TYPICALLY RESERVE FOR LANDSCAPE SERVICE.
4. ALL SERVICE MANIFOLDS SHALL BE FULLY RESTRAINED.
5. MANIFOLD SERVICE TRENCH SHALL BE IN ACCORDANCE TO STD DWG. WP-101.
6. THE TOTAL NUMBER OF SERVICES OUTLET SIZE TOTAL SHALL NOT EXCEED THAT OF THE TEE OUTLET.
7. WATER SERVICE ASSEMBLY SHALL BE PER STANDARD DRAWING NO. WP-109.
8. STAGGER WATER SERVICES, 30" MIN.
9. BLUE LOCATING WIRE, 12 GAUGE HMWPE SOLID STRAND WITH 3M GREASE TUBE NUT (DBR/Y6) OR EQUAL. TAPE WIRE AT 24" INTERVALS. USE PURPLE LOCATING WIRE FOR RECYCLED WATER SERVICES.

SERVICE MANIFOLD

SCV WATER

SANTA CLARITA VALLEY WATER AGENCY
ENGINEERING SERVICES SECTION

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WP-142

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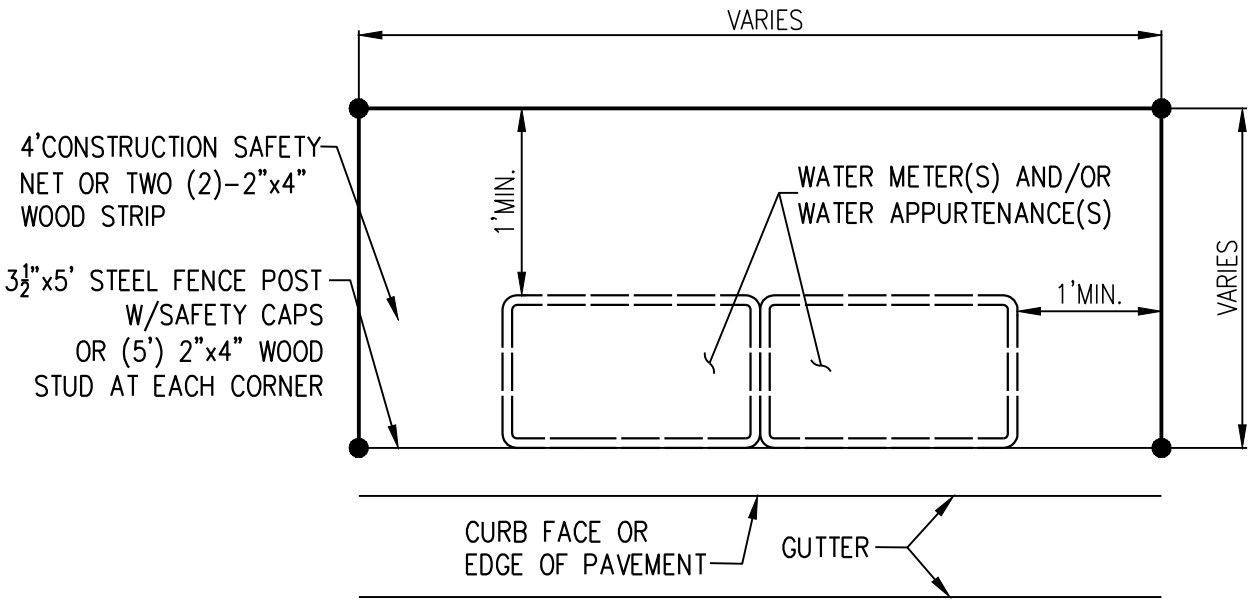
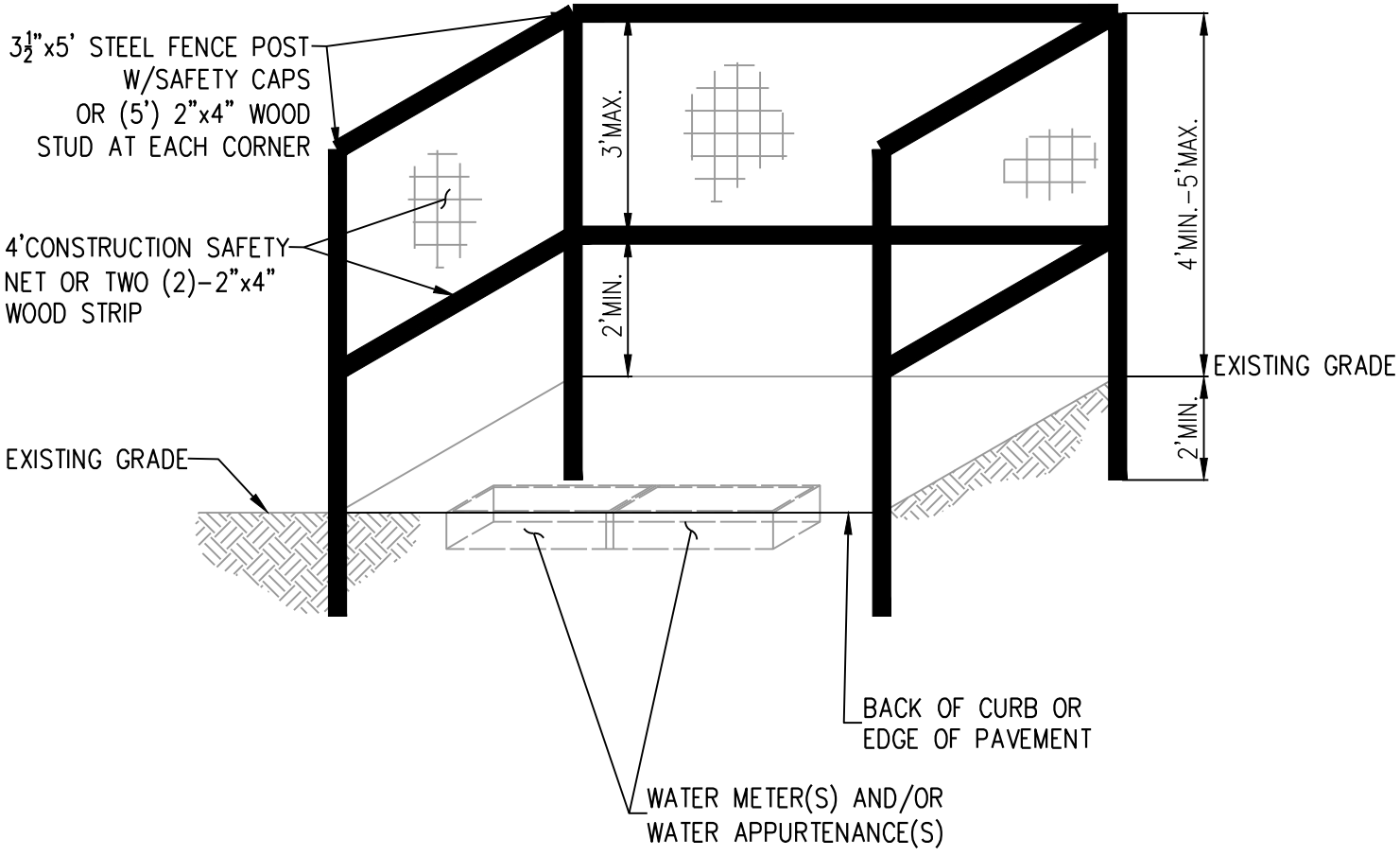
PLAN VIEW





NOT TO SCALE

TEMPORARY WATER APPURTENANCE PROTECTION (CONSTRUCTION)

SCV WATER

SANTA CLARITA VALLEY WATER AGENCY
ENGINEERING SERVICES SECTION

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CHIEF ENGINEER

7/20/2022
DATE

STD. DWG.
WP-146

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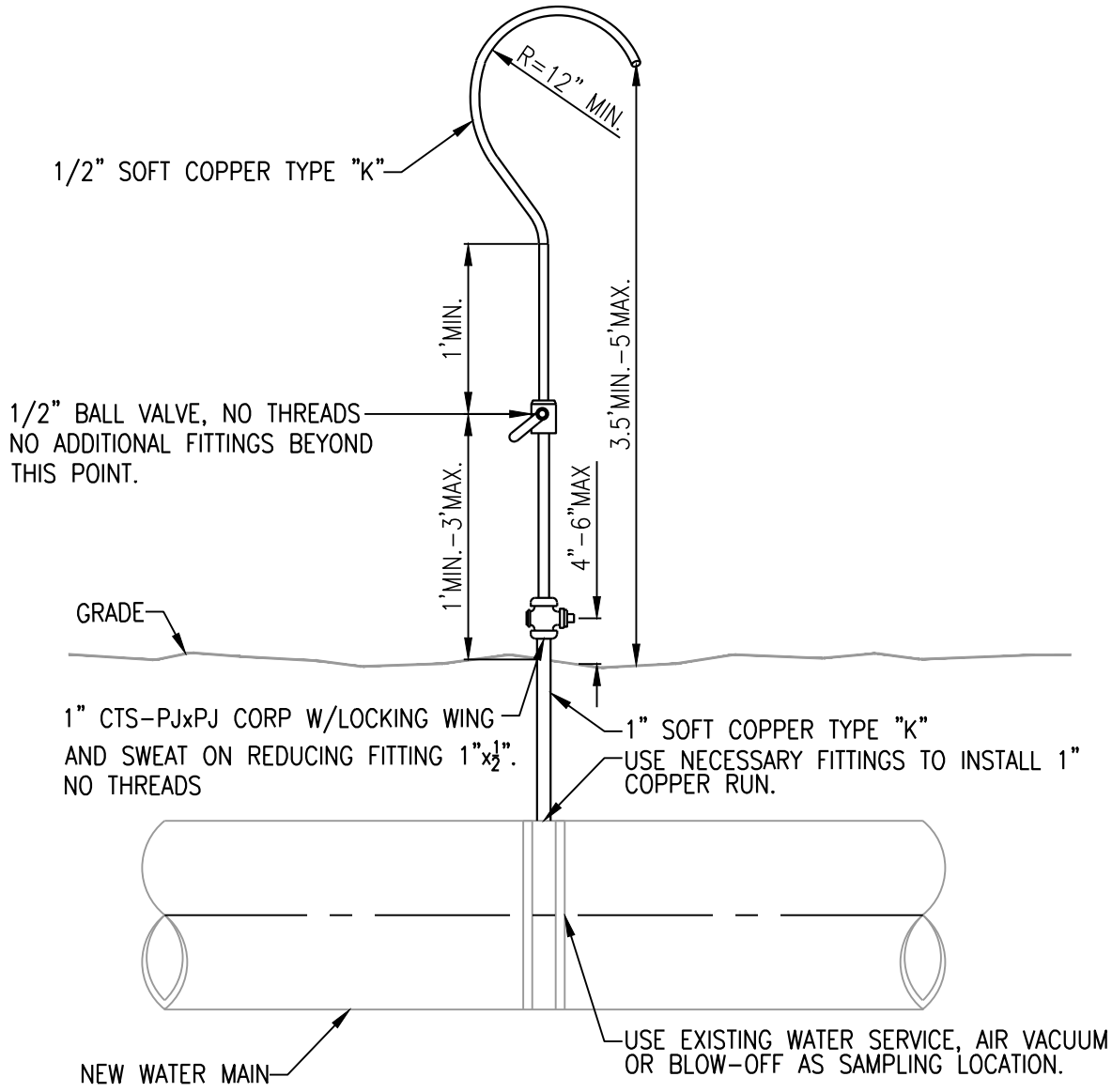
SHEET 1 OF 1



NOTES:

1. IF SADDLE IS INSTALLED ON MAIN FOR A TEMPORARY WATER SAMPLING STATION. AFTER SAMPLING IS COMPLETE AND ALL NECESSARY TEST HAVE PASSED. CONTRACTOR MUST REMOVE THE CORPORATION STOP AND PLUG SADDLE WITH A BRASS PLUG.
2. SAMPLING STATIONS MAY ALSO BE DONE OF OFF FIRE HYDRANTS AS NEEDED FOR TEMPORARY PURPOSES.

TEMPORARY WATER SAMPLE STATION

SCV WATER

SANTA CLARITA VALLEY WATER AGENCY
ENGINEERING SERVICES SECTION

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7/20/2022
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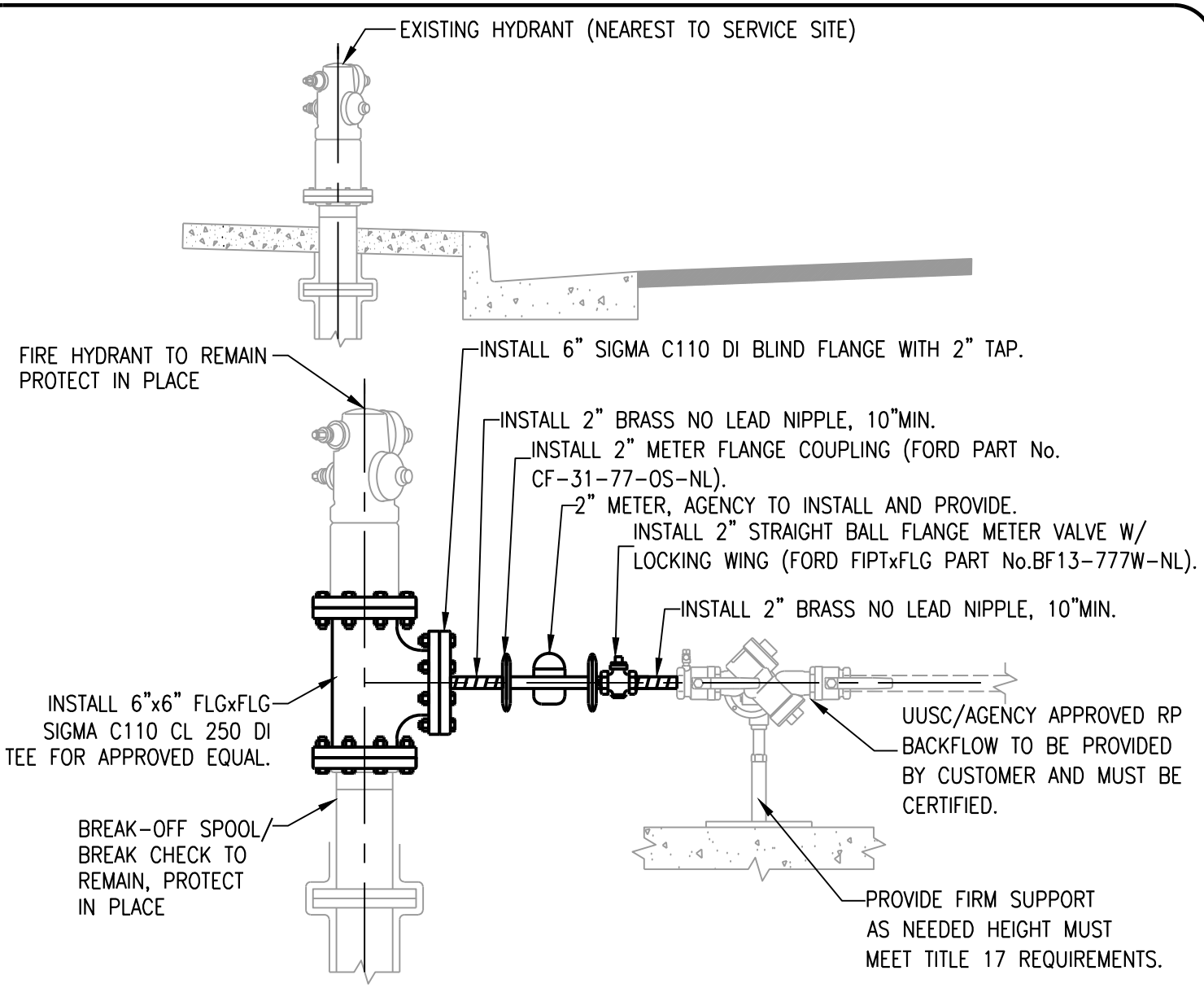
SHEET 1 OF 1



TEMPORARY 2" CONSTRUCTION METER FLANGE CONNECTION

NOTES:

1. AFTER TEMPORARY METER IS NO LONGER NEEDED. CONTRACTOR SHALL RESTORE ANY DAMAGED PAVEMENT, CONCRETE, SIDEWALKS, PARKWAYS, LANDSCAPE AND ANY AGENCY APPURTENANCE IN KIND BACK TO ITS ORIGINAL WORKING FORM.
2. TEMPORARY CONNECTIONS SHALL NOT OBSTRUCT ANY WALKWAY.
3. PROVIDE EPDM GASKETS WHERE NEEDED AND $\frac{1}{16}$" NON-ASBESTOS GASKETS FOR FLANGES (EPDM).
4. HYDRANT VALVE SHALL ONLY BE OPERATED BY AN SCVWA REPRESENTATIVE OR UNDER THE SUPERVISION OF AN SCVWA REPRESENTATIVE.
5. FULL SUBMITTAL REQUIRED PRIOR TO INSTALLING ANY EQUAL PARTS.

TEMPORARY WATER CONNECTIONS TO FIRE HYDRANTS

SCV WATER

SANTA CLARITA VALLEY WATER AGENCY
ENGINEERING SERVICES SECTION

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7/20/2022
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WP-148

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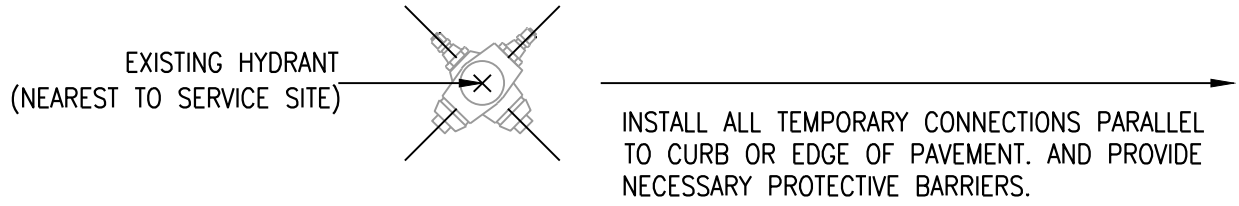
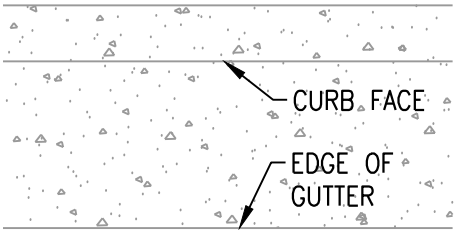
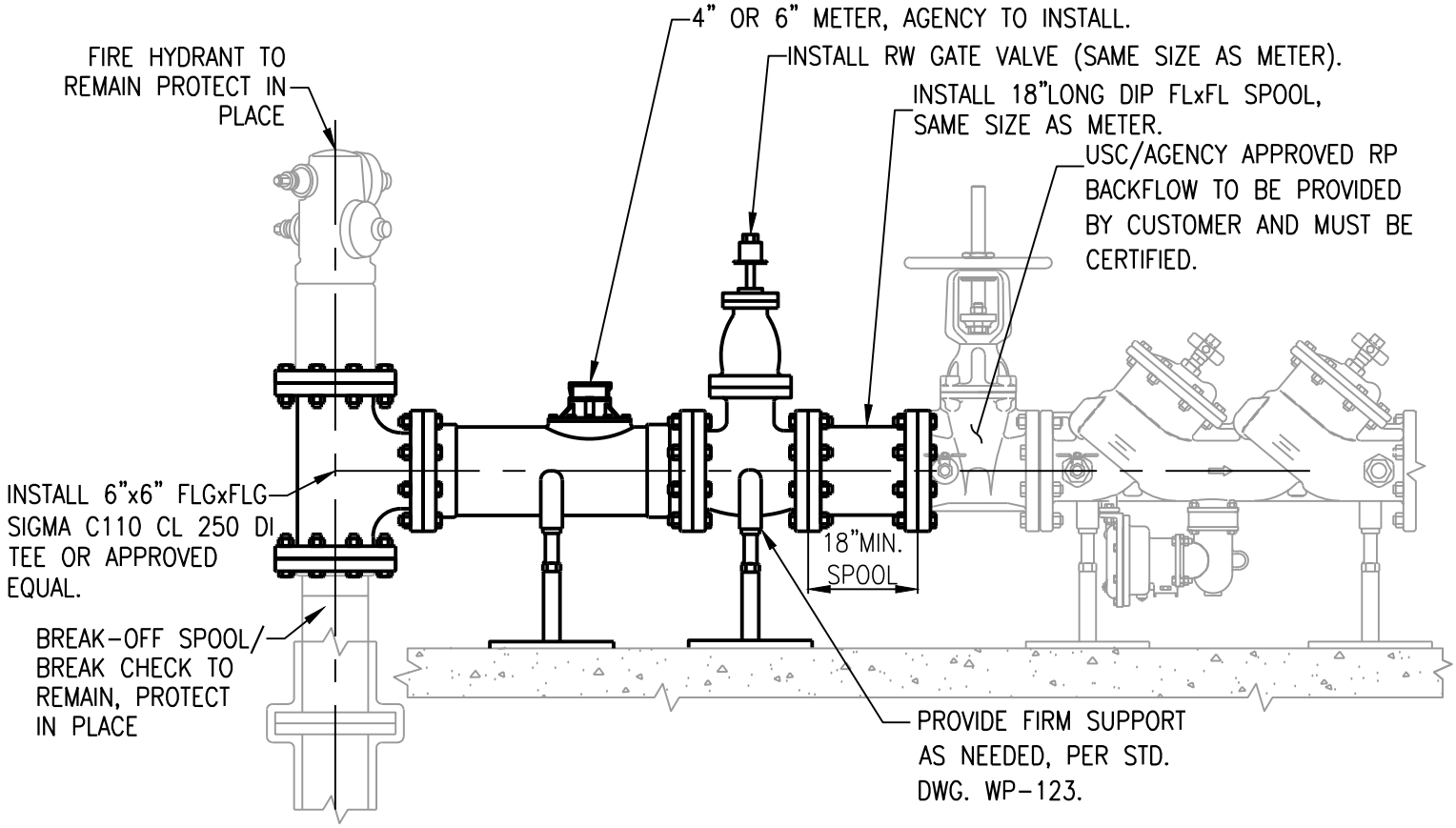




TOP VIEW



TEMPORARY 4" AND 6" SERVICE CONNECTIONS

NOTES:

1. AFTER TEMPORARY METER IS NO LONGER NEEDED. CONTRACTOR SHALL RESTORE ANY DAMAGED PAVEMENT, CONCRETE, SIDEWALKS, PARKWAYS, LANDSCAPE AND ANY AGENCY APPURTENANCE IN KIND BACK TO ITS ORIGINAL WORKING FORM.
2. TEMPORARY CONNECTIONS SHALL NOT OBSTRUCT ANY WALKWAYS.
3. PROVIDE EPDM GASKETS WHERE NEEDED AND $\frac{1}{16}$" NON-ASBESTOS GASKETS FOR FLANGES (EPDM).

TEMPORARY WATER CONNECTIONS TO FIRE HYDRANTS

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SANTA CLARITA VALLEY WATER AGENCY
ENGINEERING SERVICES SECTION

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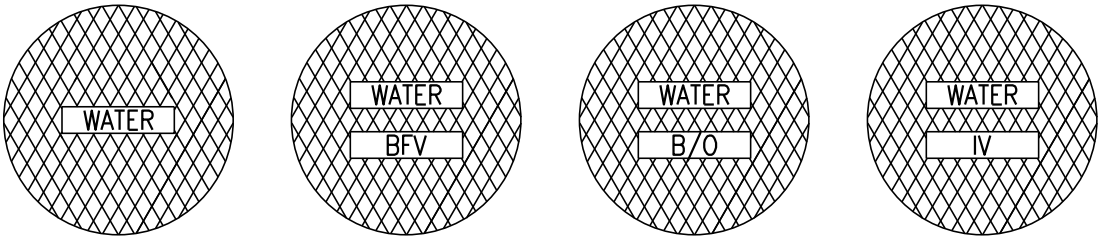
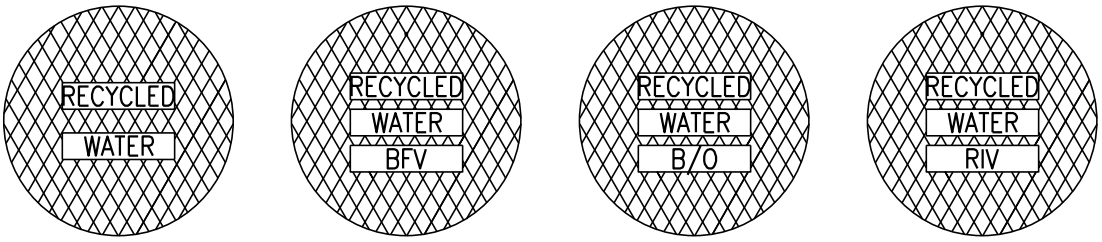
VALVE LIDS

POTABLE WATER

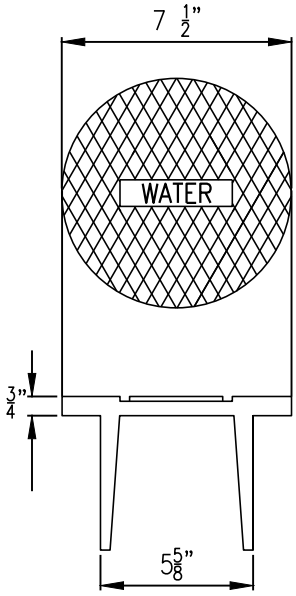


POTABLE WATER | POTABLE WATER BUTTERFLY VALVES | POTABLE WATER BLOW-OFFS | POTABLE WATER INSERTION VALVES

RECYCLED WATER



RECYCLED WATER | RECYCLED WATER BUTTERFLY VALVES | RECYCLED WATER BLOW-OFFS | RECYCLED WATER INSERTION VALVES



CAST IRON COVER MARKED "WATER", POWDER COATED ACCORDING TO STD. DWG. WP-108A. FOR HYDRANTS THAT ARE BLOW-OFFS, LID MUST BE YELLOW AND MARKED "WATER B/O" AND ALL VALVE LIDS FOR BUTTERFLY VALVES SHALL BE MARKED AS "WATER BFV".

POTABLE WATER SYSTEM VALVE	BLUE
ZONE VALVE	RED
FIRE HYDRANT/FIRE SERVICE VALVE	YELLOW
RECYCLED WATER SYSTEM VALVE	PURPLE

CONTINUED ON SHEET 2

ID TAGS AND LABELS FOR AGENCY FACILITIES/APPURTENANCES

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ALL WATER VALVES SHALL SHALL HAVE A 6-INCH VALVE LID MADE OF GREY CAST IRON AND SHALL MEET H-20 WHEEL LOAD REQUIREMENTS.

POTABLE WATER VALVE LID NOTES:

POTABLE WATER LIDS SHALL BE PAINTED AND LABELED AS FOLLOWS:

ALL POTABLE WATER LIDS SHALL BE POWDER COATED OSHA/ANSI SAFETY BLUE AND LABELED "WATER" WITH THE EXCEPTION OF FIRE HYDRANTS WHICH SHALL HAVE A LID POWDER COATED IN OSHA/ANSI SAFETY YELLOW AND CLOSED VALVES WHICH SHALL BE POWDER COATED OSHA/ANSI SAFETY RED.

BUTTERFLY VALVES SHALL BE IDENTIFIED AND LABELED. THEIR VALVE LIDS SHALL READ "WATER BFV". THEY SHALL POWDER COATED OSHA/ANSI SAFETY BLUE UNLESS SAID VALVE IS A HYDRANT VALVE OR CLOSED VALVE AND SHALL BE POWDER COATED AS DESCRIBED ABOVE.

BLOW-OFFS SHALL BE IDENTIFIED AND LABELED, THEIR VALVE LIDS SHALL READ "WATER B/O". THEY SHALL BE POWDER COATED OSHA/ANSI SAFETY BLUE. SHALL A BLOW-OFF VALVE NEED TO BE CLOSED THE VALVE LID SHALL BE POWDER COATED OSHA/ANSI SAFETY RED.

INSERTION VALVES SHALL BE IDENTIFIED AND LABELED. THEIR VALVE LIDS SHALL READ "WATER IV". THEY SHALL POWDER COATED OSHA/ANSI SAFETY BLUE UNLESS SAID VALVE IS A HYDRANT VALVE OR CLOSED VALVE AND SHALL BE POWDER COATED AS DESCRIBED ABOVE.

RECYCLED WATER VALVE LID NOTES:

RECYCLED WATER LIDS SHALL BE PAINTED AND LABELED AS FOLLOWS:

ALL RECYCLED WATER LIDS SHALL BE POWDER COATED OSHA/ANSI SAFETY PURPLE AND LABELED "RECYCLED WATER" WITH THE EXCEPTION OF CLOSED VALVES WHICH SHALL BE POWDER COATED OSHA/ANSI SAFETY RED.

BUTTERFLY VALVES SHALL BE IDENTIFIED AND LABELED. THEIR VALVE LIDS SHALL READ "RECYCLED WATER BFV". THEY SHALL PAINTED OSHA/ANSI SAFETY PURPLE UNLESS SAID VALVE IS CLOSED VALVE AND SHALL BE POWDER COATED AS DESCRIBED ABOVE.

BLOW-OFFS SHALL BE IDENTIFIED AND LABELED, THEIR VALVE LIDS SHALL READ "RECYCLED WATER B/O" AS SHOWN ABOVE. THEY SHALL BE POWDER COATED OSHA/ANSI SAFETY PURPLE. SHALL A BLOW-OFF VALVE NEED TO BE CLOSED THE VALVE LID SHALL BE PAINTED OSHA/ANSI SAFETY RED.

INSERTION VALVES SHALL BE IDENTIFIED AND LABELED. THEIR VALVE LIDS SHALL READ "RECYCLED WATER RIV". THEY SHALL PAINTED OSHA/ANSI SAFETY PURPLE UNLESS SAID VALVE IS CLOSED VALVE AND SHALL BE POWDER COATED AS DESCRIBED ABOVE.

CONTINUED ON SHEET 3

ID TAGS AND LABELS FOR AGENCY FACILITIES/APPURTENANCES

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SANTA CLARITA VALLEY WATER AGENCY
ENGINEERING SERVICES SECTION

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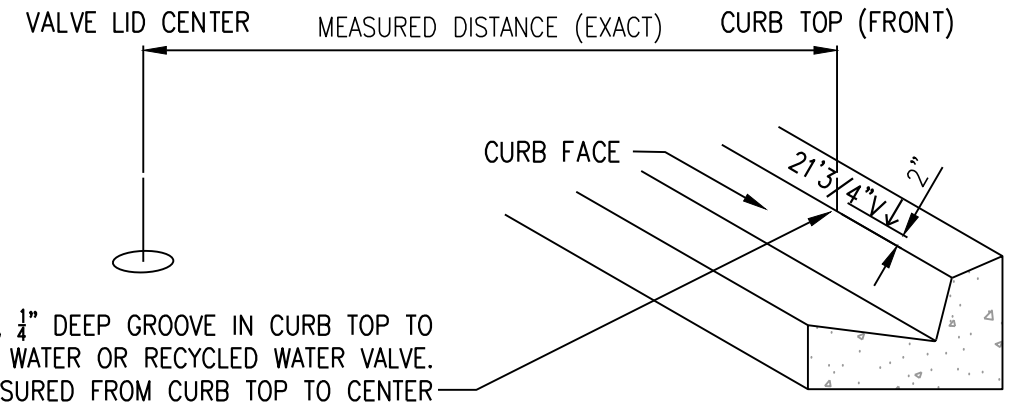
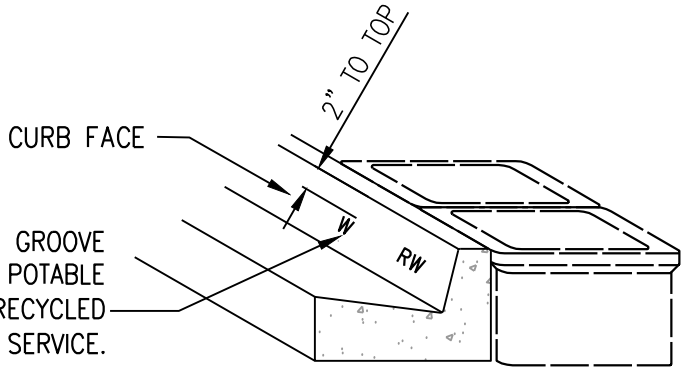


GRIND OR STAMP 2"x2", ¼" DEEP GROOVE IN CURB TOP TO IDENTIFY EACH POTABLE WATER OR RECYCLED WATER VALVE. DISTANCE SHALL BE MEASURED FROM CURB TOP TO CENTER OF VALVE LID WITH THE DISTANCE AND ARROW POINTING PERPENDICULAR IN THE DIRECTION OF THE VALVE. LABELED SHALL BE AS SHOWN HERE ON.

CURB TOP IDENTIFICATION DETAIL
FOR VALVES



GRIND OR STAMP 2"x2" "W", ¼" DEEP GROOVE IN CURB FACE TO IDENTIFY EACH POTABLE WATER SERVICE. GRIND "RW" FOR RECYCLED WATER SERVICE.

CURB FACE IDENTIFICATION DETAIL
FOR WATER SERVICE LINES

CONTINUED ON SHEET 4

ID TAGS AND LABELS FOR AGENCY FACILITIES/APPURTENANCES

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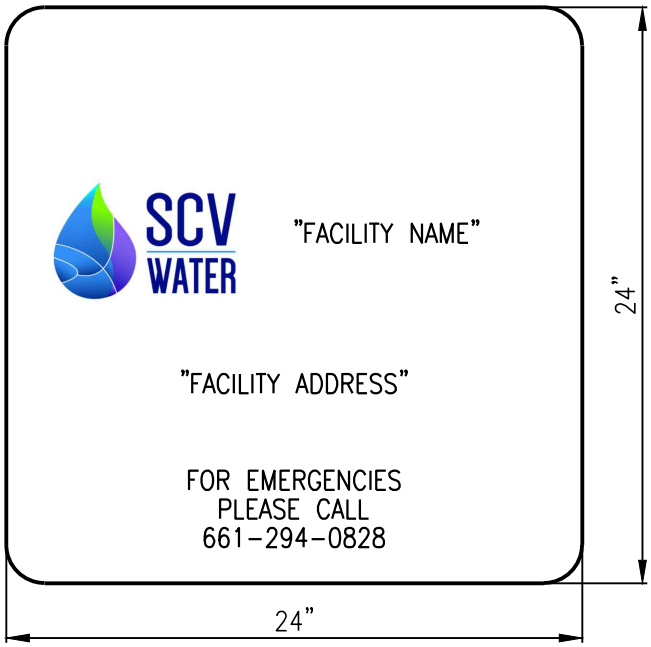
TYPICAL FACILITY SING



NOTES:

1. SIGN SHALL BE ALUMINUM 24"x24", 0.063", HIP WHITE WITH GRAFFITI PROOF COATING.
2. SIGN SHALL BE BOLTED DOWN TO FACILITY WALL, OR SHALL BE ON FACILITY ACCESS GATES AND/OR ACCORDING TO THE AGENCY APPROVED LOCATION(S).
3. CONTRACTOR SHALL COORDINATE WITH THE AGENCY REPRESENTATIVE AND CONFIRM THE NUMBER OF SINGS NEEDED AND FACILITY NAME AND ADDRESS, PRIOR TO INSTALLING AND ORDERING ANY SINGS.
4. ADDITIONAL SINGS MAY BE REQUIRED AT THE DISCRETION OF THE AGENCY.

ID TAGS AND LABELS FOR AGENCY FACILITIES/APPURTENANCES

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ENGINEERING SERVICES SECTION

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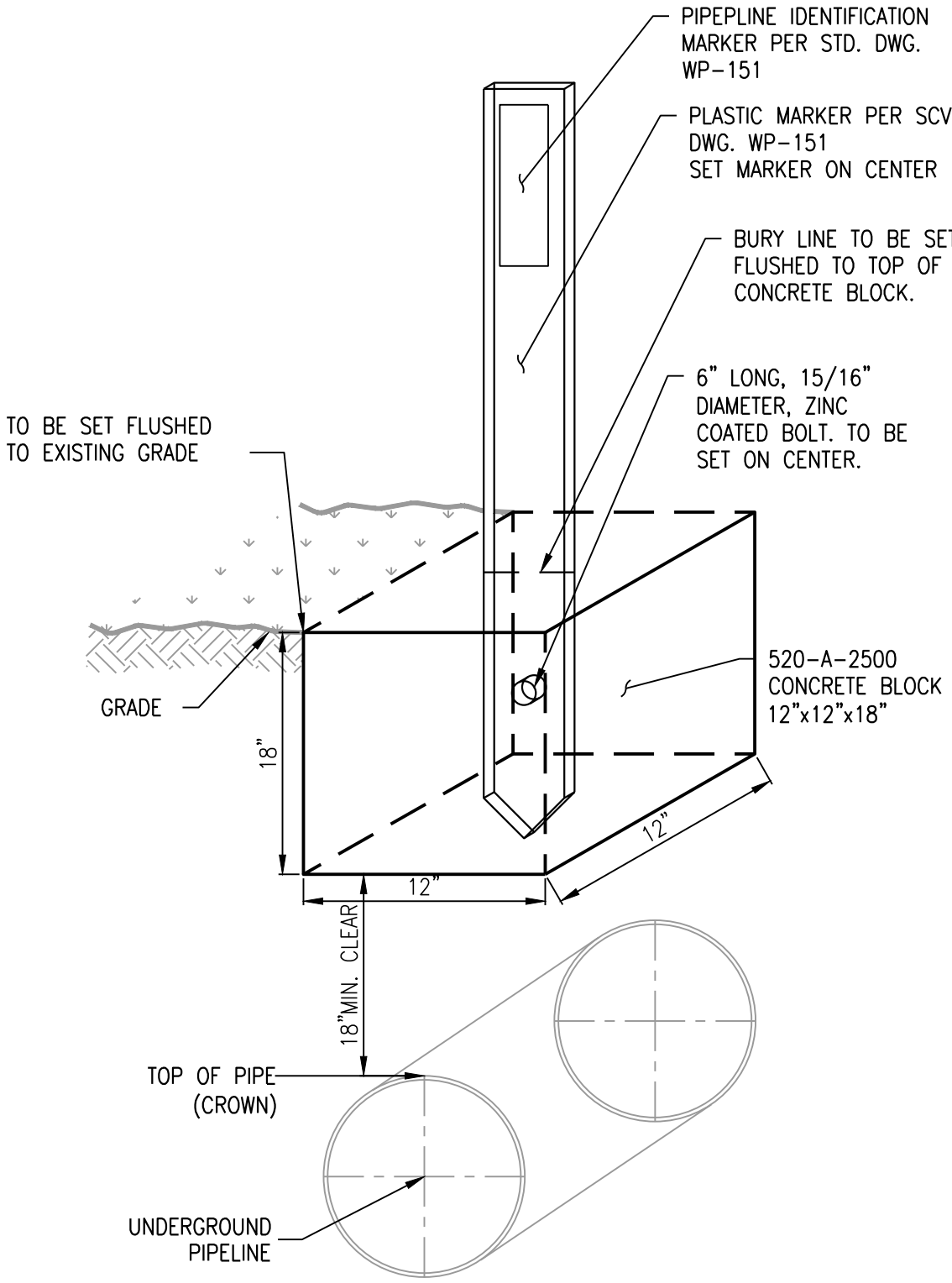

MARKER INSTALLATION

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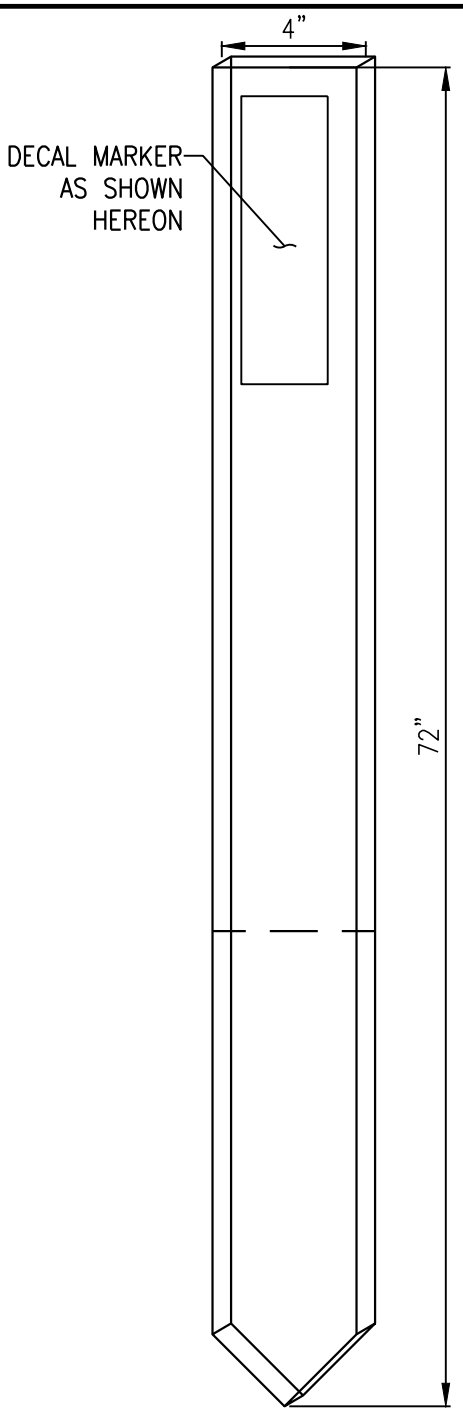
COLOR	USE
BLUE	POTABLE WATER
PURPLE	RECYCLED WATER
RED	ELECTRICAL LINES
ORANGE	FIBER OPTIC CABLES
GREEN	STORM DRAIN OR SEWER

AGENCY NAME AND PHONE NUMBER. SHALL MATCH COLOR OF USE.



TYPICAL RHINO 4-RAIL FIBER GLASS POST

NOTES:

1. PROVIDE UTILITY MARKER AT SCVWA FACILITIES BURIED OUTSIDE PAVED AREAS. COLOR SHALL BE AS SHOWN ON TABLE ABOVE.
2. MARKERS SHALL BE 4-RAIL FIBER GLASS POST (72" TALL) PER RHINO MARKING AND PROTECTION SYSTEMS (DECAL: 2-7/8"x14").
3. PLACE MARKERS EVERY 100 FEET FOR PIPELINES AND AT ALL ABOVE GRADE STRUCTURES.
4. MARKERS TO BE EMBED IN CONCRETE PER STANDARD DRAWING WP-150.

PIPELINE IDENTIFICATION MARKERS

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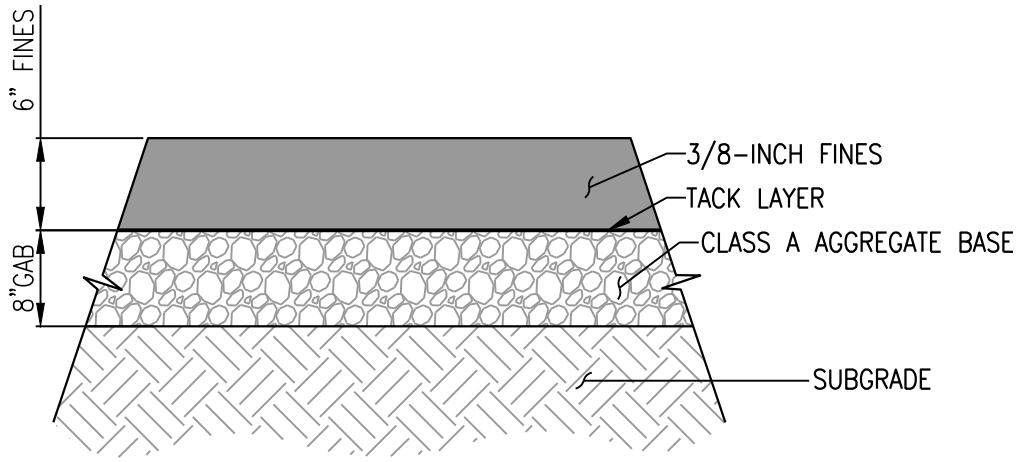
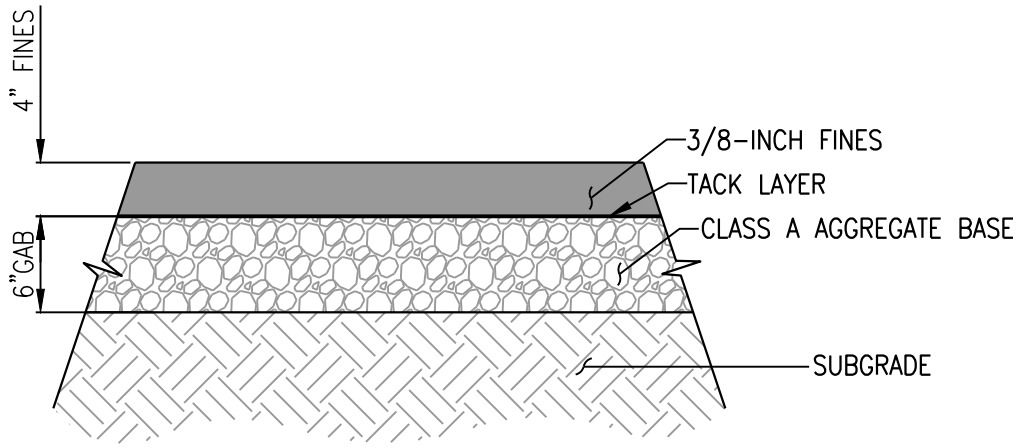


TYPICAL HEAVY DUTY ASPHALT DETAIL



TYPICAL LIGHT DUTY ASPHALT DETAIL

NOTES:

1. ALL TANK SITES SHALL BE PAVED WITH THE TYPICAL HEAVY DUTY ASPHALT DETAIL SHOWN HEREON, UNLESS OTHERWISE SPECIFIED IN THE PLANS, PER AGENCY APPROVED TRAFFIC INDEX RATING.
2. ALL PUBLIC STREET AND PRIVATE STREETS SHALL BE PAVED ACCORDING TO THE GOVERNING JURISDICTION.
3. ALL COMPACTION SHALL BE AT 95%, UNLESS OTHERWISE APPROVED BY THE AGENCY.

TYPICAL PAVEMENT DETAIL

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ENGINEERING SERVICES SECTION

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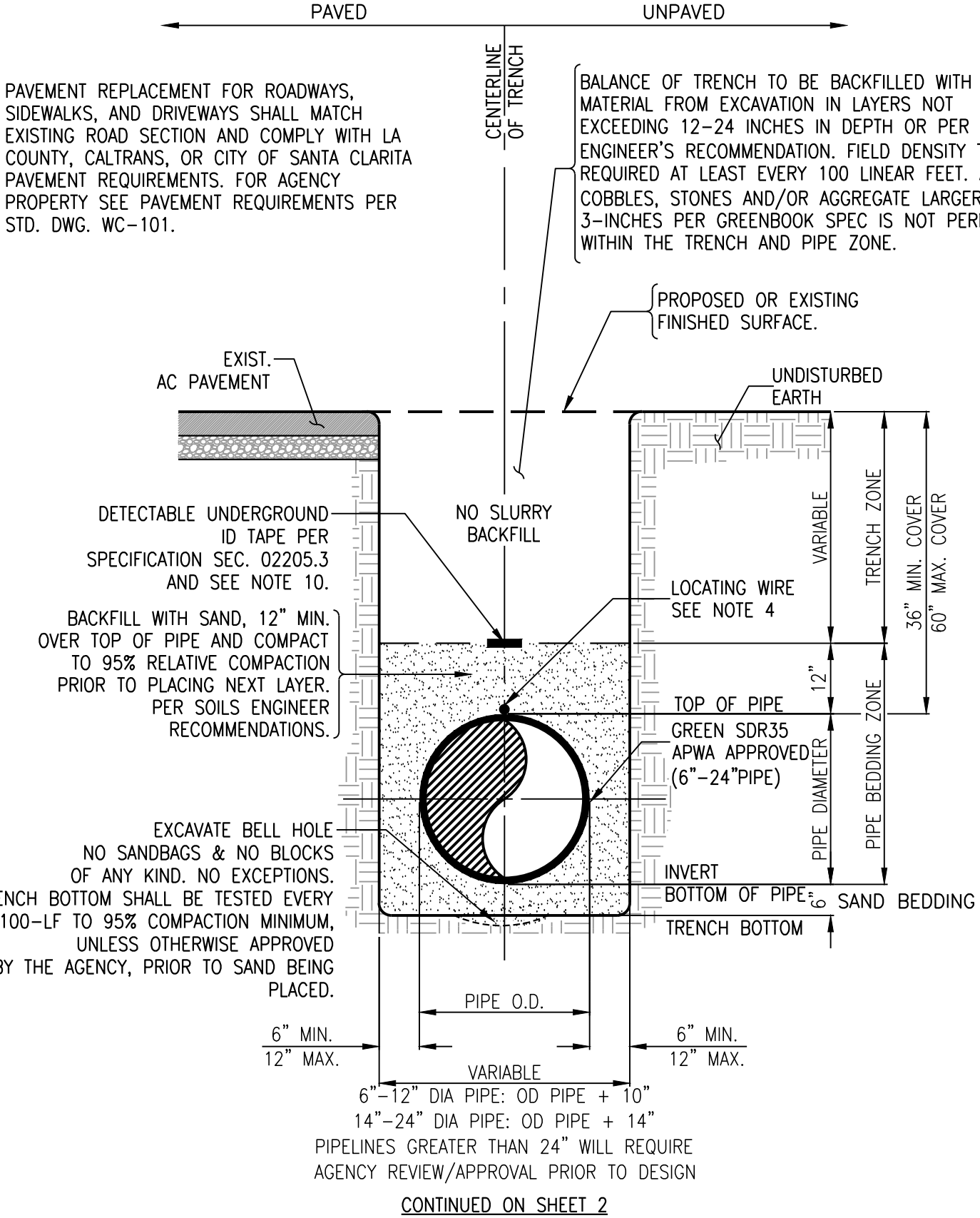
SHEET 1 OF 1



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TYPICAL AGENCY DRAIN LINE TRENCH DETAIL

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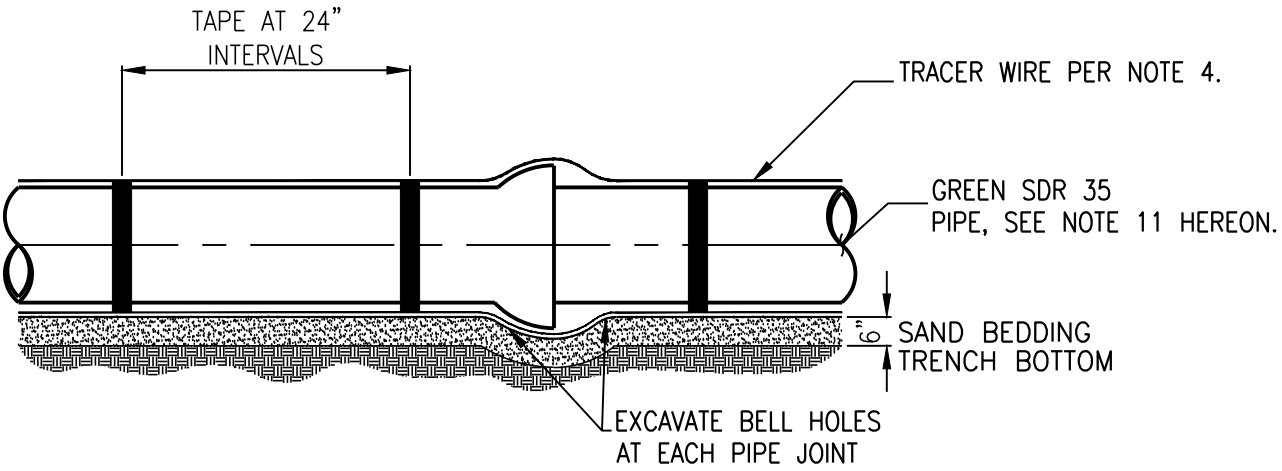

NOTES:

1. ALL PAVEMENT SHALL BE CUT PER LATEST GREENBOOK EDITION OR PER LOCAL GOVERNING AGENCY.
2. IMPORTED BACKFILL MATERIAL TO BE INSTALLED AS DIRECTED IN THE FIELD BY THE AGENCY.
3. ALL MATERIALS SUPPLIED SHALL MEET OR EXCEED LATEST APWA/GREENBOOK SPECIFICATIONS.
4. LOCATING WIRE MUST BE GREEN HMWPE 12 GAUGE AND SHALL BE INSTALLED ON ALL PIPE. ATTACH WIRE WITH 3" WIDE TAPE–10 MIL AND TAPED AT 24" INTERVALS.
5. COMPACT BACKFILL TO 95% RELATIVE COMPACTION WHEN PIPE IS IN PAVED AREAS AND IN UNPAVED AREAS.
6. ALL DRAIN LINES SHALL BE INSTALLED TO MEET TITLE 22 STANDARDS WHEN IN THE VICINITY OF POTABLE WATER PIPELINES. ALL OTHER DRAIN LINE UTILITY CROSSINGS SHALL MAINTAIN A MINIMUM OF 12" VERTICAL CLEARANCE AND ALL OTHER PARALLEL UTILITY INSTALLATIONS SHALL MAINTAIN A MINIMUM 36" HORIZONTAL CLEARANCE.
7. DRAIN LINE PIPELINE DEPTH SHALL BE 55" MAXIMUM TO BOTTOM OF SAND BEDDING AND 36" MINIMUM TO CROWN OF PIPE UNLESS OTHERWISE DIRECTED BY THE AGENCY.
8. COMPACTION REPORTS MUST BE PROVIDED DAILY TO AGENCY'S INSPECTOR OR AGENCY REPRESENTATIVE.
9. SAND NEEDS TO MEET SAND EQUIVALENCY 30.
10. DETECTABLE WARNING TAPE SHALL BE INSTALLED ON ALL UNDERGROUND AGENCY FACILITIES, INCLUDING BUT NOT LIMITED TO MAINS, LATERALS, SERVICES, ETC. IDENTIFICATION TAPE SHALL GREEN FOR AGENCY SD AND SEWER, SEE SPECIFICATION SECTION 02205.3.
11. DRAIN LINES SHALL BE OF GREEN PVC SDR 35 (APWA APPROVED), UNLESS OTHERWISE APPROVED BY THE AGENCY.
12. FOR SLOPES GREATER THAN 10% PIPE SHALL BE RESTRAINED.
13. FOR PIPELINES GREATER THAN 24" THE AGENCY WILL REQUIRE REVIEW AND APPROVAL PRIOR TO DESIGN.
14. ALL ANGLE POINTS WILL REQUIRE THRUST BLOCKS PER STD. DWG. WP–102.
15. NO DRAIN LINES SHALL BE INSTALLED PARALLEL UNDER CURBS, GUTTERS AND PARKWAYS.

TYPICAL AGENCY DRAIN LINE TRENCH DETAIL

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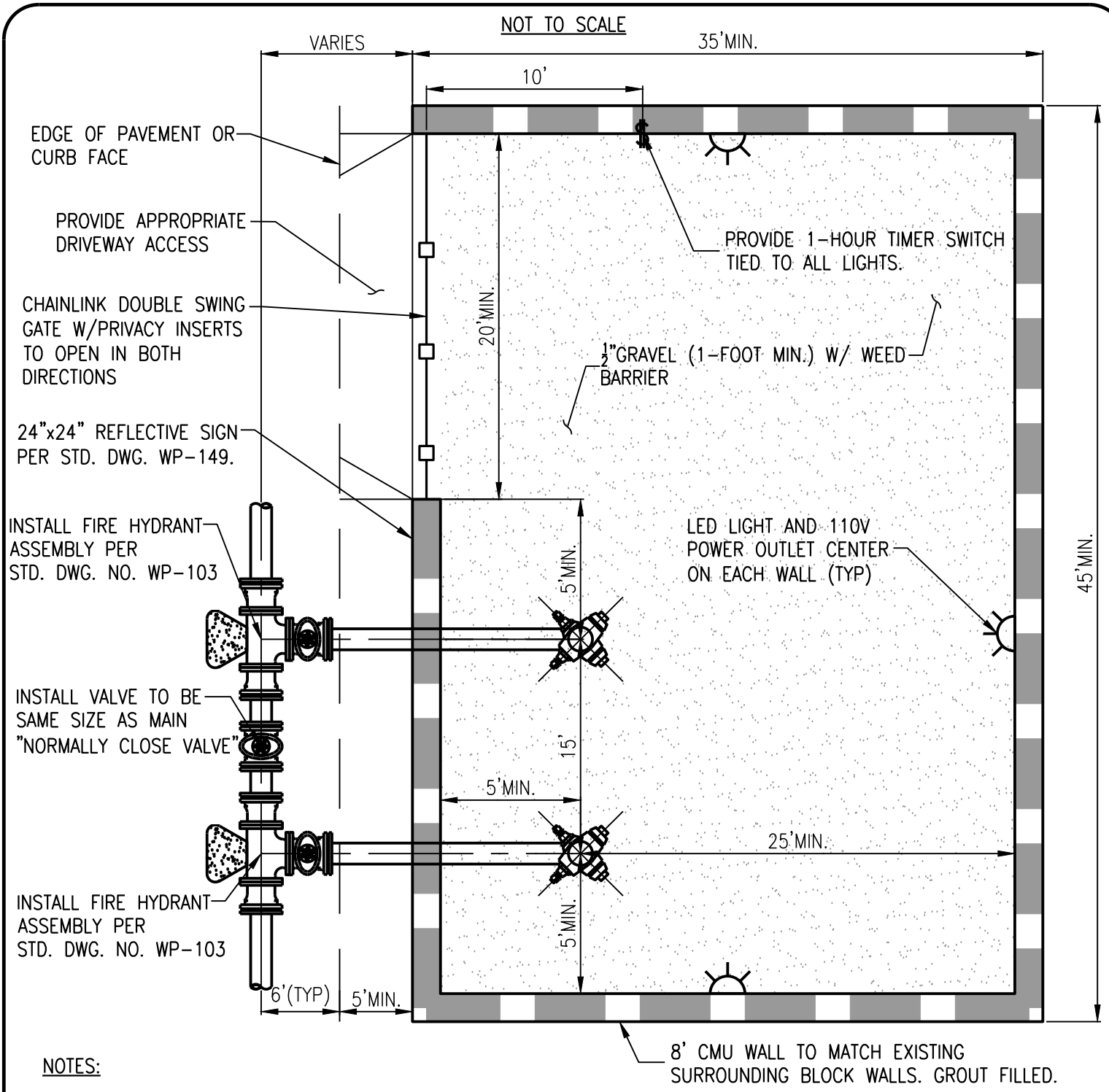
NOT TO SCALE



NOTES:

1. AGENCY MUST APPROVE LOCATION OF BACKUP BOOSTER PRIOR TO THE START OF DESIGN.
2. FACILITY SHALL BE DEEDED TO THE AGENCY AND ANY NECESSARY EASEMENT(S) SHALL BE GRANTED. SEE STD. DWG. NO. SY-101.
3. FACILITY SHALL BE BEHIND EDGE OF PAVEMENT OR CURB.
4. WALL AND WALL FOOTINGS SHALL BE CONSTRUCTION TO MEET PROPOSED SITE CONDITIONS.
5. FACILITY SHALL HAVE APPROPRIATE DRAINAGE TO MEET PROPOSED SITE CONDITIONS.
6. SCE ELECTRICAL POWER SHALL PROVIDED.

STANDARD AGENCY BACKUP BOOSTER STATION

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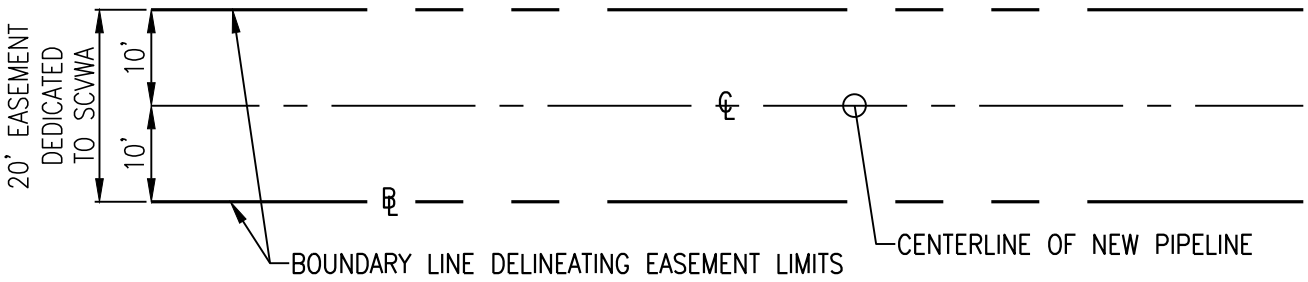
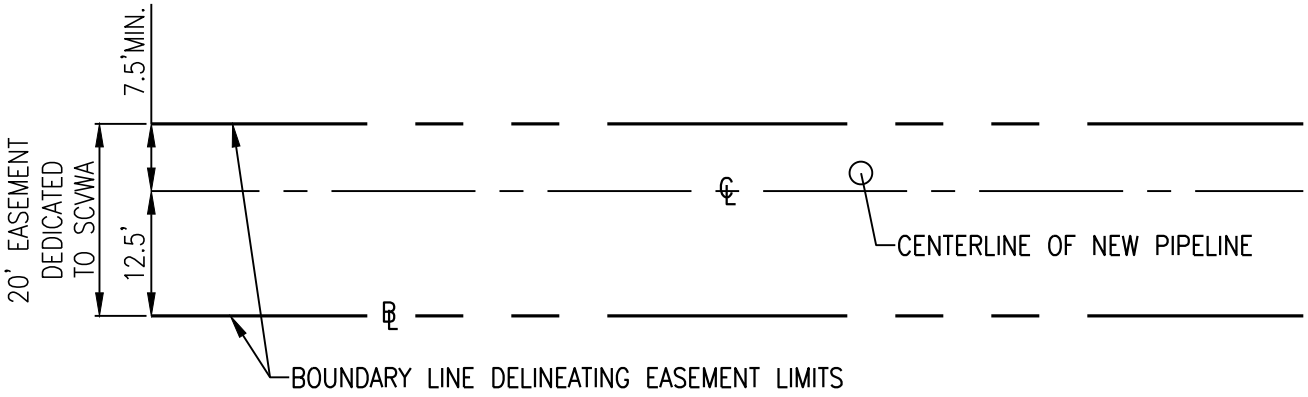
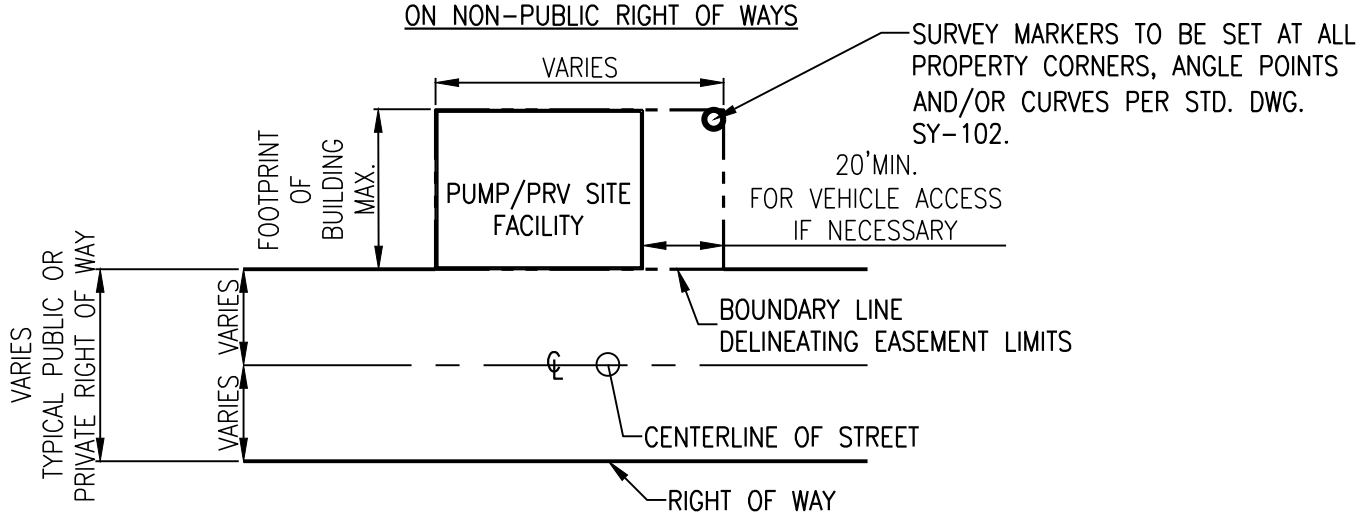


TYPICAL EASEMENT FOR NEW PIPELINE INSTALLATION ON NON-PUBLIC RIGHT OF WAYS



TYPICAL OFFSET EASEMENT FOR NEW PIPELINE INSTALLATION ON NON-PUBLIC RIGHT OF WAYS



TYPICAL EASEMENT LIMITS FOR AGENCY FACILITIES WITHIN PRIVATE PROPERTY BUT NEAR A PRIVATE OR PUBLIC RIGHT OF WAY

CONTINUED ON SHEET 2

TYPICAL EASEMENT/RIGHT OF WAY REQUIREMENTS FOR AGENCY FACILITIES

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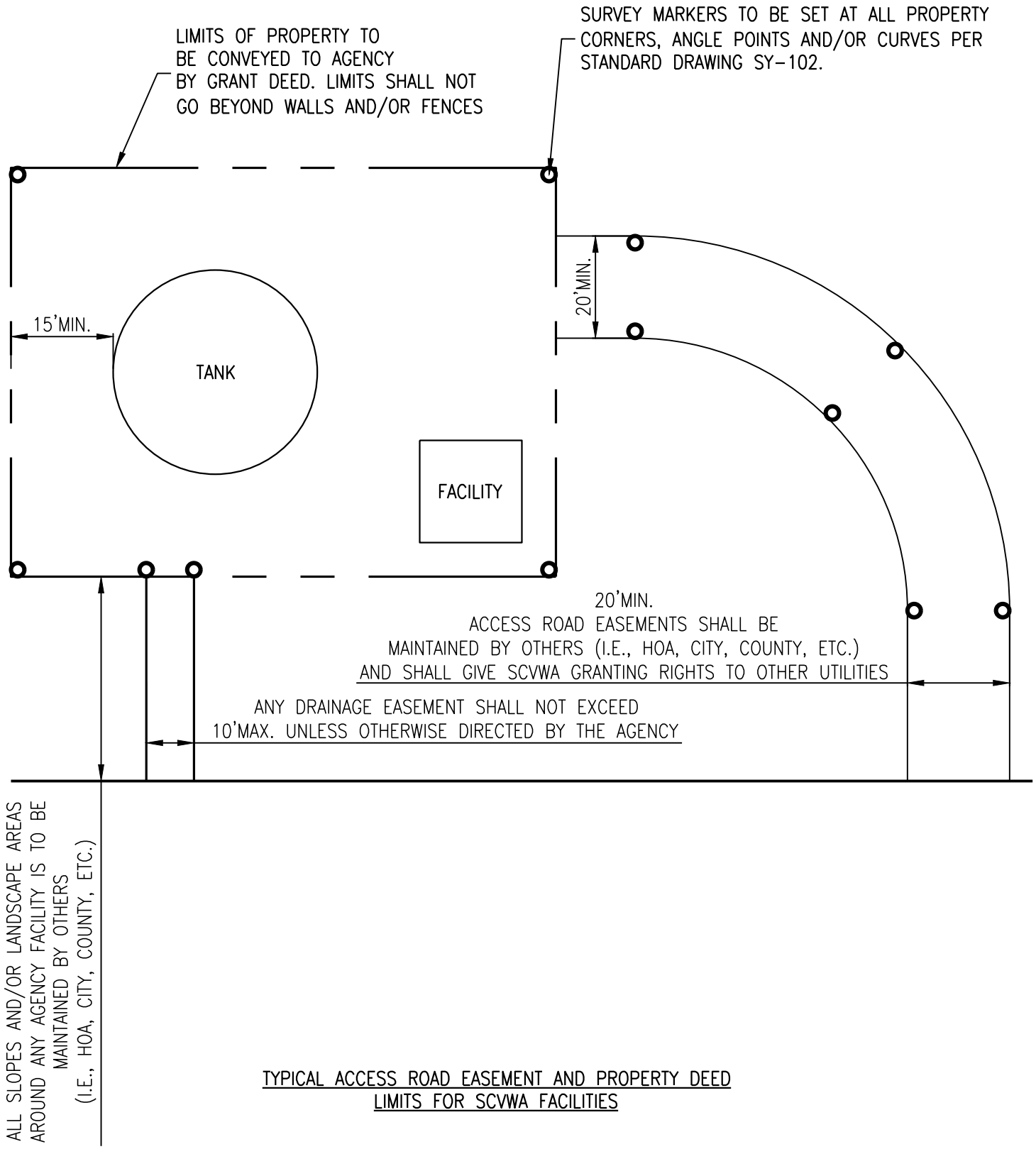

TYPICAL ACCESS ROAD EASEMENT AND PROPERTY DEED LIMITS FOR SCVWA FACILITIES

CONTINUED ON SHEET 3

TYPICAL EASEMENT/RIGHT OF WAY REQUIREMENTS FOR AGENCY FACILITIES

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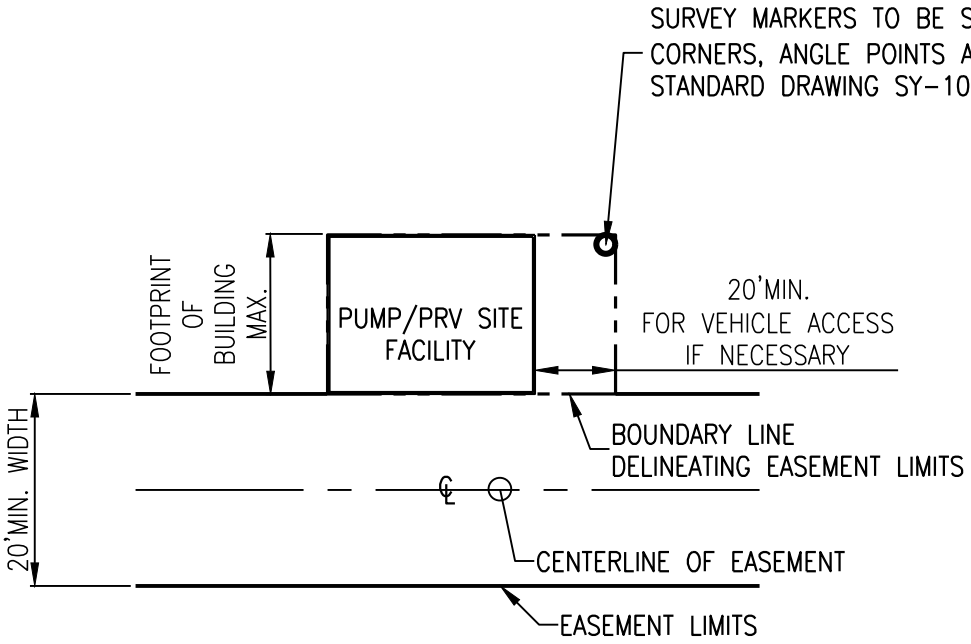

TYPICAL EASEMENT LIMITS FOR AGENCY FACILITIES WITHIN PRIVATE PROPERTY

NOTES:

1. ALL EASEMENTS GRANTED TO THE SANTA CLARITA VALLEY WATER AGENCY SHALL HAVE A MINIMUM WIDTH OF 20' UNLESS OTHERWISE INSTRUCTED BY THE AGENCY.
2. ALL ACCESS ROAD EASEMENTS GRANTED TO THE AGENCY SHALL GIVE THE AGENCY GRANTING RIGHTS TO ANOTHER UTILITY FOR UTILITY PURPOSES.
3. THE AGENCY SHALL DETERMINE WHEN AN OFFSET EASEMENT IS NECESSARY.
4. EASEMENT TEMPLATE AND DEED TEMPLATE ARE AVAILABLE IN THE AGENCY'S CONSTRUCTION MANUAL APPENDIX B.

TYPICAL EASEMENT/RIGHT OF WAY REQUIREMENTS FOR AGENCY FACILITIES

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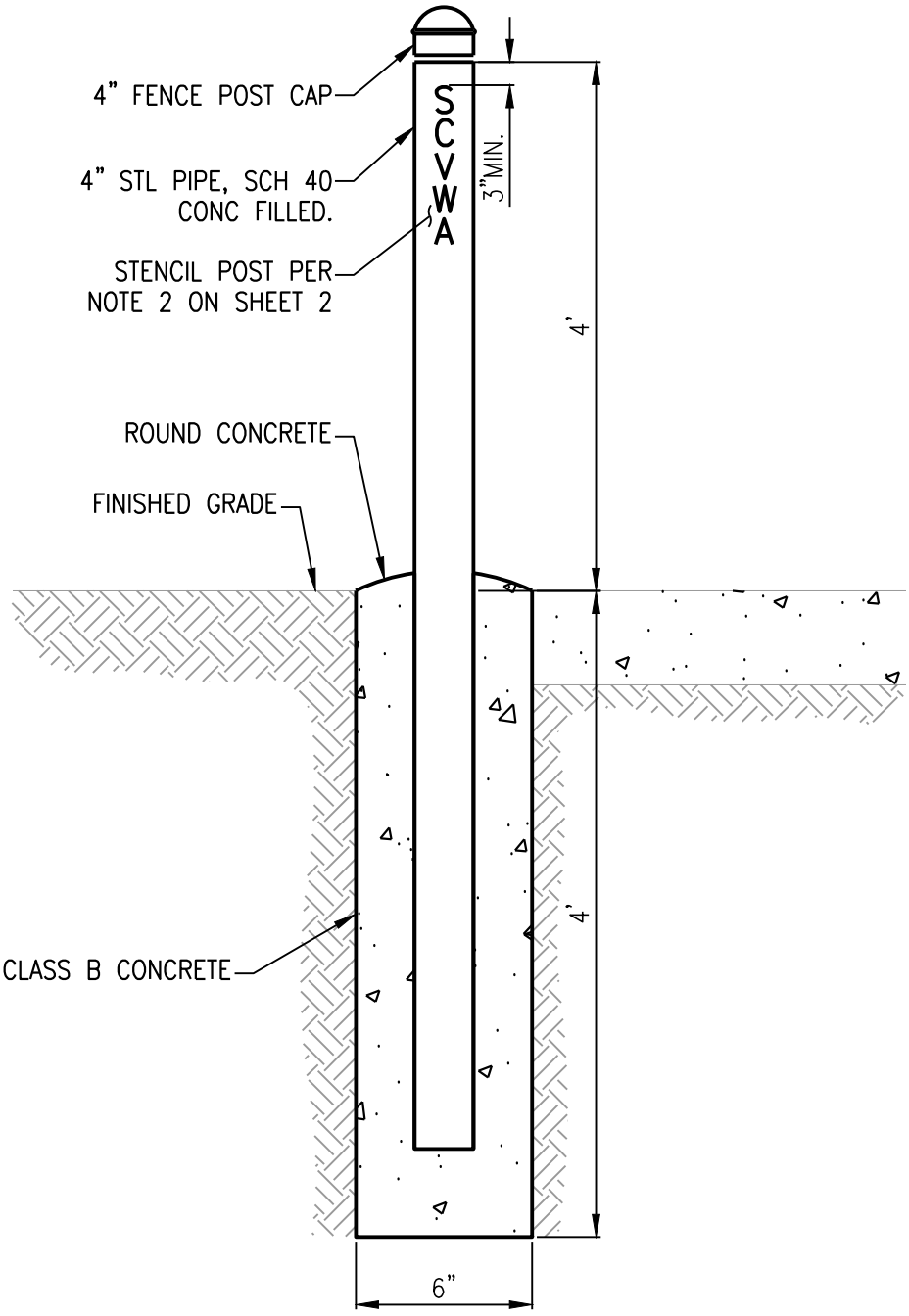
TYPE A SURVEY/EASEMENT AND RIGHT OF WAY MARKER:



CONTINUED ON SHEET 2

TYPICAL AGENCY SURVEY/RIGHT OF WAY AND EASEMENT MARKERS

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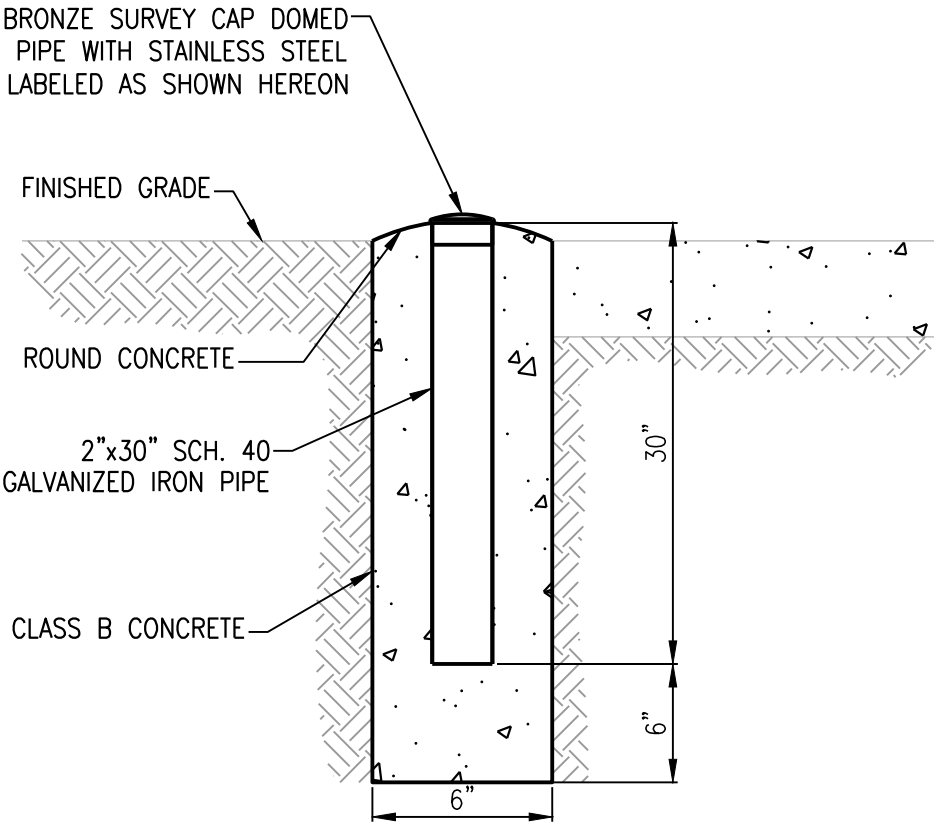
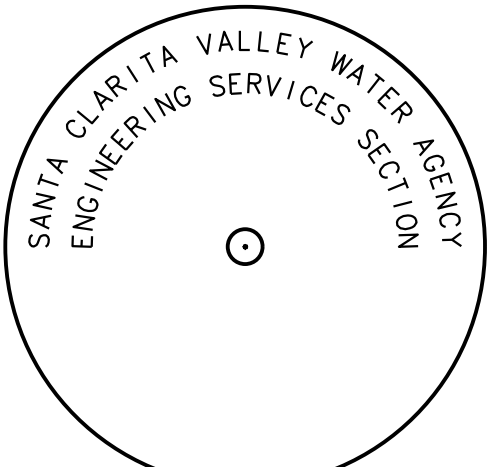
TYPE B SURVEY/EASEMENT AND RIGHT OF WAY MARKER:





DOMED SURVEY CAP

NOTES:

1. EASEMENT MARKERS SHALL BE INSTALLED WHERE CALLED OUT ON THE APPROVED PLANS, PER STANDARD SY-101 OR AS DIRECTED BY THE AGENCY REPRESENTATIVE.
2. EASEMENT MARKER SHALL HAVE A 2-INCH HIGH LETTERING BRANDED/BURNED INTO POST AND SHALL BE LABELED AS "SCVWA" OR AS INSTRUCTED BY THE AGENCY REPRESENTATIVE.
3. STEEL PIPE AND CAP SHALL BE PAINTED WITH TWO COATS OF "ANSI/OSHA SAFETY YELLOW".
4. ALL SURVEY MARKERS/MONUMENTS SHALL BE SET BY A LICENSED LAND SURVEYOR AND SHALL LIE WITHIN THE AGENCY'S EASEMENT LIMITS/PROPERTY, THIS SHALL INCLUDE THE FOOTING.

TYPICAL AGENCY SURVEY/RIGHT OF WAY AND EASEMENT MARKERS

SCV WATER

SANTA CLARITA VALLEY WATER AGENCY
ENGINEERING SERVICES SECTION

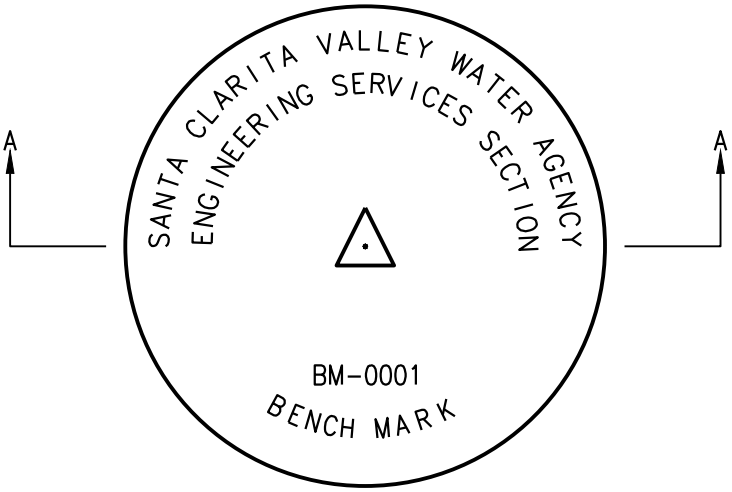
APPROVED BY:

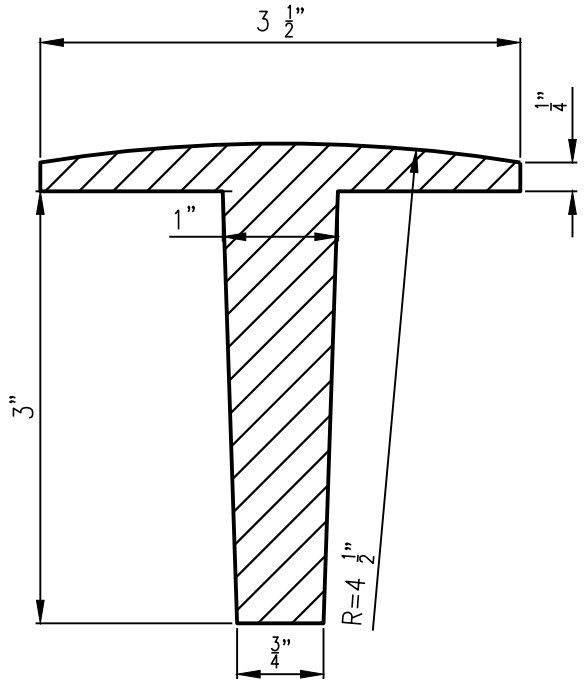
COURTNEY MAEL, P.E. 84647
CHIEF ENGINEER

7/20/2022
DATE

STD. DWG.
SY-102

REV. 1.0





SECTION A–A

MONUMENT TYPE A: BENCHMARK

1. BENCHMARK MONUMENT SHALL BE A BRASS DISK WITH DIMENSION AS SHOWN IN THIS STANDARD DRAWING.
2. ALL BENCHMARK MONUMENTS SHALL A BENCHMARK IDENTIFICATION NUMBER AND HAVE THE AGENCY'S NAME AND SECTION.
3. MONUMENTS MAY BE SET FLUSHED TO SURFACE IN
   A.) WELLS AS SHOWN IN SHEET 3;
   B.) IN STRUCTURES;
   C.) IN ROCK;
   D.) AND IN CONCRETE ON NATURAL GROUND.

SURVEY MONUMENTS

SCV WATER

SANTA CLARITA VALLEY WATER AGENCY
ENGINEERING SERVICES SECTION

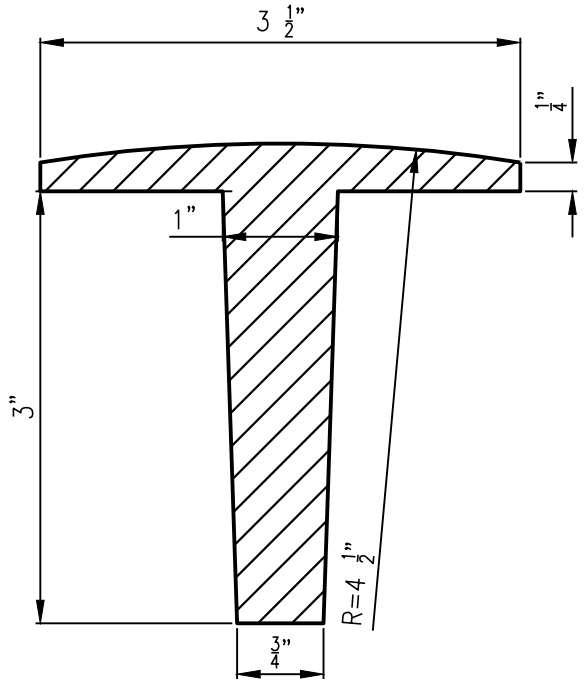
APPROVED BY:

COURTNEY MAEL, P.E. 84647
CHIEF ENGINEER

7/20/2022
DATE

STD. DWG.
SY-103

REV. 1.0



SECTION A–A

MONUMENT TYPE B: CONTROL

1. CONTROL MONUMENT CAN BE TYPE A OR B.
2. ALL BENCHMARK MONUMENTS SHALL A BENCHMARK IDENTIFICATION NUMBER AND HAVE THE AGENCY'S NAME AND SECTION.
3. MONUMENTS MAY BE SET IN
   A.) WELLS AS SHOWN IN SHEET 3;
   B.) IN STRUCTURES;
   C.) IN ROCK;
   D.) AND IN CONCRETE ON NATURAL GROUND.

SURVEY MONUMENTS

SCV WATER

SANTA CLARITA VALLEY WATER AGENCY
ENGINEERING SERVICES SECTION

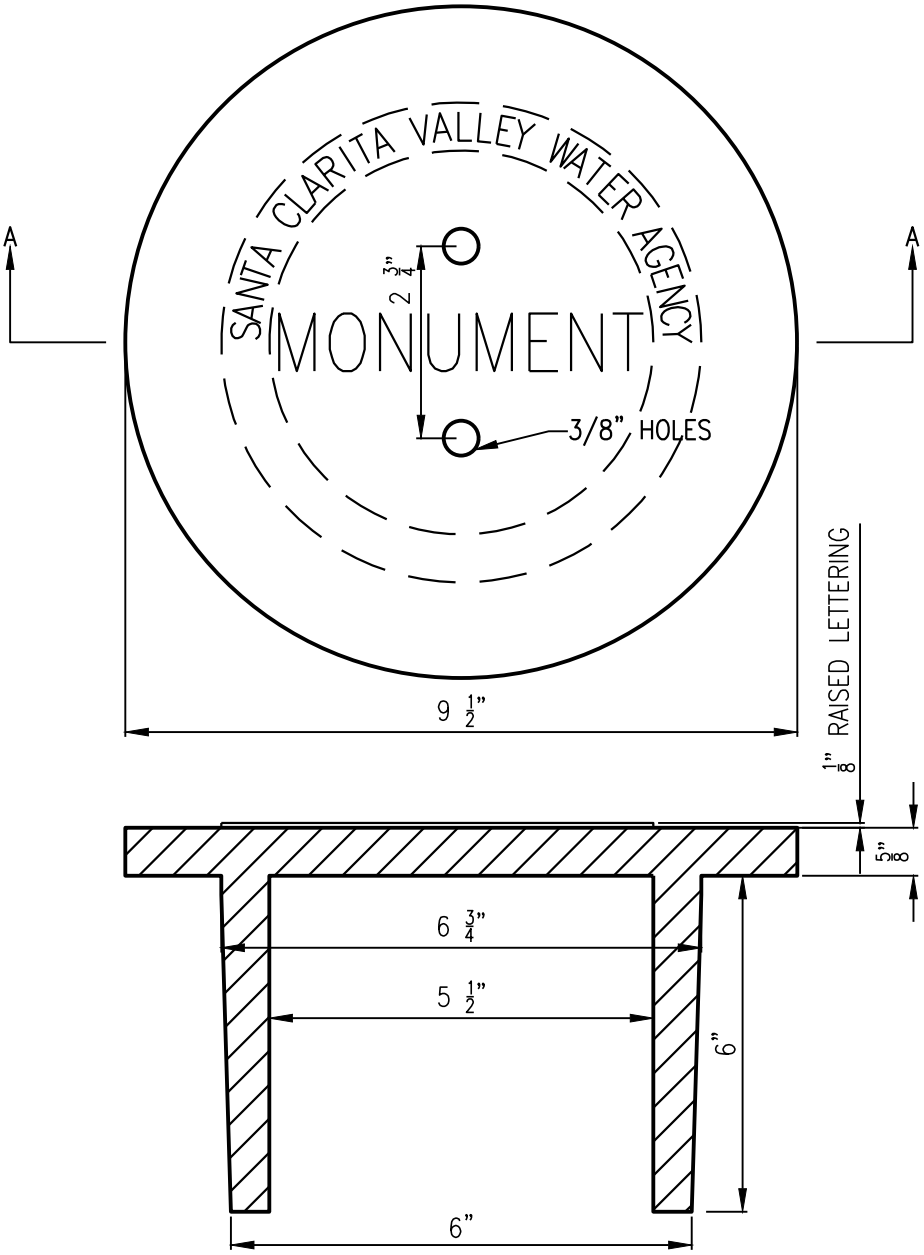
APPROVED BY:

COURTNEY MAEL, P.E. 84647
CHIEF ENGINEER

7/20/2022
DATE

STD. DWG.
SY-103

REV. 1.0



WELL MONUMENT:

1. WELL MONUMENT SHALL BE CAST IN ONE PIECE WITH THE LETTERING SHOWN ABOVE.
2. WELL MONUMENT SHALL HAVE TWO 3/8" HOLES SPACED AS SHOWN. HOLES SHALL BE FULL WIDTH AND OPEN.
3. WELL MONUMENT SHALL HAVE COAL TAR COATING LAYER.
4. WELL MONUMENT SHALL BE USED A SPECIFIED BY THE AGENCY OR WHEN CALL OUT ON THE PLANS.
5. WELL MONUMENTS SHALL BE PLACED ONLY ON AC PAVEMENTS.

CONTINUED ON SHEET 4

SURVEY MONUMENTS

SCV WATER

SANTA CLARITA VALLEY WATER AGENCY
ENGINEERING SERVICES SECTION

APPROVED BY:

COURTNEY MAEL, P.E. 84647
CHIEF ENGINEER

7/20/2022
DATE

STD. DWG.
SY-103

REV. 1.0

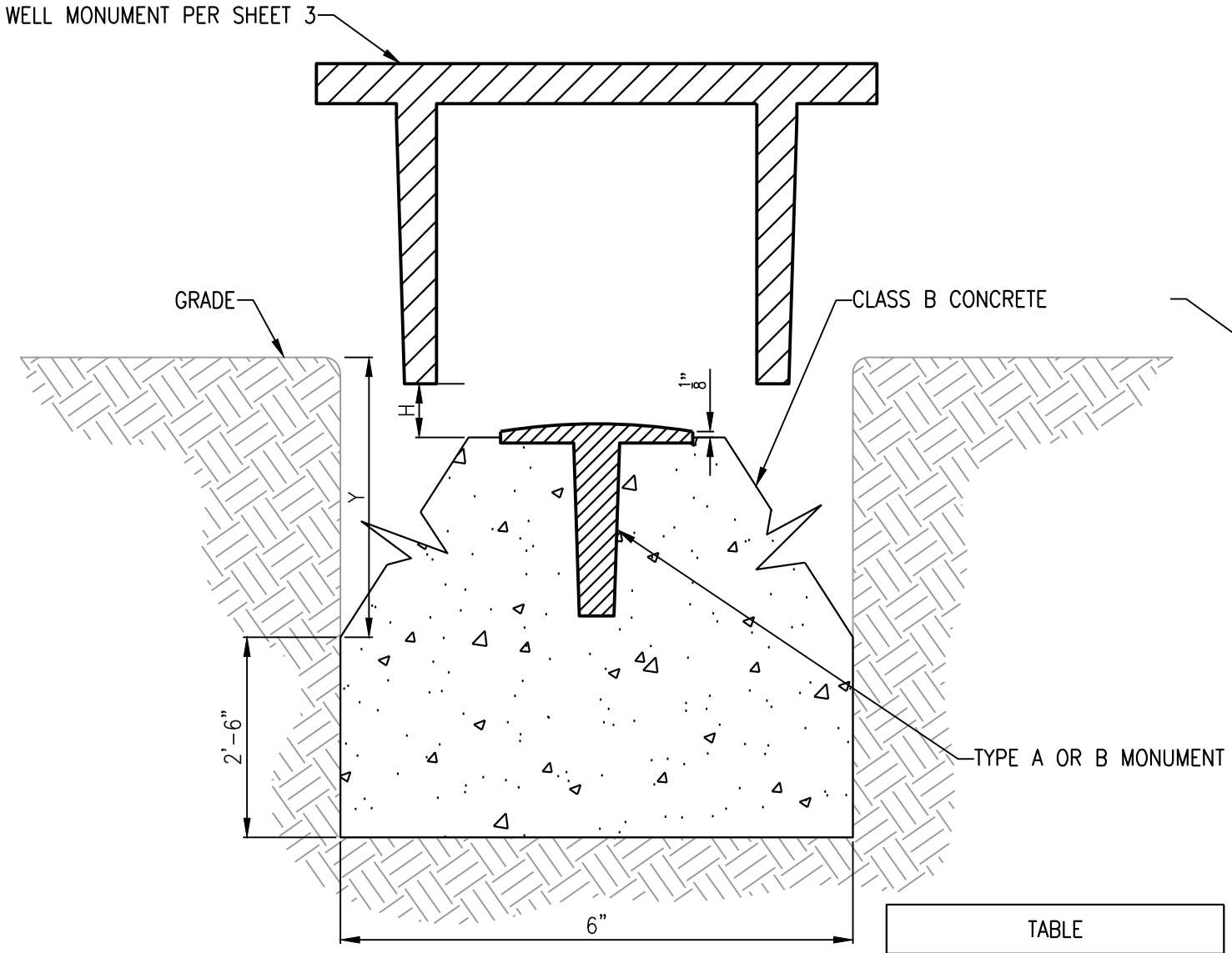


TABLE		
THICKNESS OF PAVEMENT	H	Y
4"	1/2"	4"
5"	1/2"	3"
6"	1/2"	2"
7"	1/2"	1"
8"	1 1/2"	1"
9"	2 1/2"	1"
10"	3 1/2"	1"
11"	4 1/2"	1"
12"	5 1/2"	1"

SURVEY MONUMENTS

SCV WATER

SANTA CLARITA VALLEY WATER AGENCY
ENGINEERING SERVICES SECTION

APPROVED BY:

COURTNEY MAEL, P.E. 84647
CHIEF ENGINEER

7/20/2022
DATE

STD. DWG.
SY-103

REV. 1.0

Appendix A
Approved Materials List

SCV WATER

SERVICE • COMMUNITY • VALUE

Appendix B
Easements, Deeds, Quitclaim and Right of Way

Part I
Easement

Part II
Grant Deed

Part III
Quitclaim

Part IV
Right of Way (Pending)

SCV WATER
SERVICE • COMMUNITY • VALUE

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Easements, Deeds, and Quitclaim

The following template documents are provided by the Agency when processing Easement(s), Deed(s), and Quitclaim(s). Document language is non-negotiable and both Grantor and Grantee must accept said language, failure to do so, constitutes the Agency from denying water service(s) and revokes any "will serve" letter issued by the Agency to the Applicant.

Right of Way

For any right of way questions and to obtain the latest templates please contact:

Kristina Jacob
Right of Way Agent
Engineering Services Section
(661) 513-1262
kjacob@scvwa.org

Part I
Easement Template

RECORDING REQUESTED BY
AND WHEN RECORDED MAIL TO:

Exempt from fees pursuant to Government Code Section 27383

Santa Clarita Valley Water Agency-
PO Box 903
Santa Clarita, CA 91380-9003
ATTN: Kristina Jacob

APN: XXXX-XXX-XXX

SPACE ABOVE LINE FOR RECORDER

GRANT OF EASEMENT

Documentary Transfer Tax $ None (no consideration)

_____ Santa Clarita Valley Water Agency
Signature of Declarant or Agent

This is a conveyance of an easement or deed and the consideration and Value and consideration less than $100 R & T 11911.

FOR A VALUABLE CONSIDERATION, receipt of which is hereby acknowledged, _____ ("Grantor"), does hereby grant to the SANTA CLARITA VALLEY WATER AGENCY, a California special act water agency (Chapter 833, Statutes of 2017), and its successors and assigns ("Grantee"), a permanent non-exclusive easement and right of way ("Easement") in, upon, over, and across the "Easement Property" (defined below), to construct, reconstruct, replace, up-grade, maintain, alter, inspect, survey, operate, remove and use a subsurface water pipeline or pipelines and conduit, and valves and meter structures, service connections, and other necessary facilities and appurtenances for public utility purposes, together with the right of ingress thereto and egress therefrom by a principal route or routes, together with the right to maintain and keep clear said Easement Property as further set forth below. The land on which said Easement is hereby granted (collectively referred to as the "Easement Property") is located in the unincorporated territory of the County of Los Angeles, State of California, and more particularly described on attached Exhibit "A" and depicted on attached Exhibit "B", which exhibits are incorporated herein by reference.

Grantor agrees for itself, its heirs, successors and assigns, not to plant, erect, install, alter, place or maintain, nor to permit the planting, erection, alteration, placement or maintenance of any tree, building, or permanent structure (collectively, "Permanent Structure") on the Easement Property. If any Permanent Structure is made or placed on the Easement Property, any such Permanent Structure shall be removed at Grantor's sole cost and expense within thirty (30) days after the receipt of Grantee's written request.

Grantee and its contractors, agents and employees, shall have the right to trim or cut tree roots and shall have free access to any and all systems and infrastructure that may exist on the Easement at

all times, for the purpose of exercising rights herein granted, however, that in making any excavation of said property of the Grantor, the Grantee shall make the same in such a manner as will cause the least injury to the surface of the ground around such excavation, and shall replace the earth so removed by it and restore the surface of the ground to as near the same condition as it was prior to such excavation as is practicable, including replacing or repairing any asphalt or other existing road surfaces.

The Easement granted herein, the restrictions hereby imposed, and the covenants contained in this Grant of Easement shall be deemed an easement, restrictions, and covenants running with the land pursuant to California Civil Code Section 1468 and shall inure to the benefit of and be binding upon the parties hereto and their respective heirs, successor, and assigns.

This instrument shall inure to the benefit of, and be binding upon, the respective heirs, personal representatives, successors and assigns of Grantor and Grantee, respectively. Reference herein to Grantor and Grantee and its or their rights and obligations hereunder shall include reference to any successors in interest and assignees of Grantor and Grantee.

Subject to the rights of Grantee, covenants and restrictions contained herein, Grantor retains the right to use the Easement Property for any purpose that does not interfere with Grantee's use of the Easement and exercise of all rights and privileges herein.

Except with respect to Grantee's obligations when making excavations as set forth above, Grantor waives any right under Civil Code section 845, and any other right, to compel Grantee to repair, grade, surface or otherwise improve or maintain said Easement as a roadway or private right of way; provided, however, that to the extent Grantee constructs driveway improvements to access its facilities, or maintains above-ground appurtenances, such improvements and appurtenances shall be constructed and maintained in a manner consistent with Grantee's other facilities.

[THE BELOW LANGUAGE ADDRESSES A PUBLIC ROAD RELATED EASEMENT]

To the extent any portion of the Easement or the project that require it are located within a public road, street, highway or access point of the County, the rights of Grantee, covenants and restrictions contained herein will be subordinate to any and all real property rights (fee simple, easement or otherwise) granted to the County of Los Angeles ("County") for public streets, highways, access rights, building restriction rights or other easements (collectively, "County Real Property Rights") which are granted, dedicated or offered for dedication to the County after the date of recordation of this Grant of Easement but only as to any portion of the Easement Property burdened by such County Real Property Rights.

[THE BELOW LANGUAGE ADDRESSES A NON-PUBLIC ROAD RELATED EASEMENT]

To the extent any portion of the Easement or the project that require it are located within a private or non-public road, street, highway or access point, the rights of Grantee, covenants and restrictions contained herein will not be subordinate to, but shall be equal to and concurrent with, any and all County Real Property Rights possessed by the County or which are subsequently granted, dedicated or offered for dedication to the County after the date of recordation of this Grant of Easement but only as to any portion of the Easement Property

burdened by such County Real Property Rights. Grantor and the County shall not use or permit the use of the Easement or Easement Property in any manner that will interfere with their equal and concurrent property rights in the Easement.

IN WITNESS WHEREOF, this instrument has been executed as of _____, 20_____.

GRANTEE

Santa Clarita Valley Water Agency -
a California Special Act Water Agency

By: _____
Name: Courtney Mael, P.E.
Its: Chief Engineer

GRANTOR

By_____
Name:
Its:

CERTIFICATE OF ACCEPTANCE
Pursuant to Section 27281 of the California Government Code

This is to certify that the interest in real property conveyed by the Grant of Easement, dated _____, 20__, from[INSERT GRANTOR], to the Santa Clarita Valley Water Agency, a public agency organized and existing under the laws of the State of California, is hereby accepted by the undersigned officer on behalf of the Santa Clarita Valley Water Agency, pursuant to the authority conferred by Resolution No. SCV-04, adopted by the Santa Clarita Valley Water Agency's Board of Directors on January 2, 2018, and the Grantee consents to recordation thereof by its duly authorized officer.

Dated: _____, 20__

SANTA CLARITA VALLEY WATER AGENCY

By_____
MATTHEW G. STONE, General Manager

Part II
Grant Deed Template

Recording requested by
and when recorded mail to:

Santa Clarita Valley Water Agency
P.O. Box 903
Santa Clarita, CA 91380-9003
Attn: Kristina Jacob

APN: _____

SPACE ABOVE THIS LINE RESERVED FOR RECORDER'S USE

Exempt from transfer tax under R&T 11922. Exempt from recording fees under Gov. Code 27383.

GRANT DEED CONTAINING COVENANTS

[Insert Grantor] ("Grantor") hereby grants to the **Santa Clarita Valley Water Agency**, a California special act water agency (Chapter 833, Statutes of 2017; "Grantee"), the real property in the County of [insert County], State of California, described in Exhibit A hereto and incorporated herein by reference ("Property").

To the extent Grantor has improved the Property and appurtenant and/or adjacent properties with drainage facilities and improvements, including storm drains, catch basins, conduits and pipelines (collectively, "Drainage Improvements"), Grantor agrees for itself, its heirs, successors and assigns that it shall be responsible for inspecting and maintaining all Drainage Improvements and keeping them free of debris, waste, hazardous materials, pollutants and contaminants and any matter which may impede their operation. Grantor further agrees that if the Property, Grantee's facilities, improvements or equipment on the Property, and appurtenant and/or adjacent properties are flooded and/or damaged as a result of Grantor's failure to properly maintain the Drainage Improvements, Grantor shall be liable for any resulting damage.

Grantor shall fully indemnify, defend (at Grantor's sole cost and expense and with legal counsel selected and approved by Grantee, in Grantee's sole discretion), protect and hold harmless Grantee, its elected officials, directors, board members, officers, employees, contractors, volunteers, agents and attorneys, from and against any and all actual claims, demands, obligations, acts, causes of action, damages, costs, expenses, losses, judgments, fines, penalties and liabilities, in law or in equity, to person or property, of every kind or nature whatsoever claimed, made or suffered by any person or entity, relating to Grantor's inspection and maintenance of the Drainage Improvements.

Dated: _____

[INSERT GRANTOR]

By: _____

Title: _____

CERTIFICATE OF ACCEPTANCE
(Government Code section 27281)

This is to certify that the interest in real property conveyed by the Grant Deed dated _____ from [Insert Grantor] to the Santa Clarita Valley Water Agency, a governmental agency, is hereby accepted by the undersigned officer on behalf of the board of directors pursuant to authority conferred by Resolution No. SCV-04 of the board of directors on January 2, 2018, and the Grantee consents to recordation thereof by its duly authorized officer.

Dated: _____ Santa Clarita Valley Water Agency

By: _____

Matthew G. Stone, General Manager

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

STATE OF CALIFORNIA)
) ss.
COUNTY OF _____)

On _____, 20_____, before me, _____, a Notary Public, personally appeared _____, who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

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

WITNESS my hand and official seal.

_____
Notary Public

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

STATE OF CALIFORNIA)
) ss.
COUNTY OF LOS ANGELES)

On _____, 20_____, before me, _____, a Notary Public, personally appeared Matthew G. Stone, who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

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

WITNESS my hand and official seal.

_____
Notary Public

Part III
Quitclaim Template

Recording requested by
and when recorded mail to:

Santa Clarita Valley Water Agency
P.O. Box 903
Santa Clarita, CA 91380-9003
Attn: Kristina Jacob

APN: [XXXX-XXX-XXX]

SPACE ABOVE THIS LINE RESERVED FOR RECORDER'S USE

Exempt from transfer tax under R&T 11922. Exempt from recording fees under Gov. Code 27383.

QUITCLAIM DEED – [PARTIAL] RELEASE OF EASEMENT

The **Santa Clarita Valley Water Agency**, a California special act water agency (Chapter 833, Statutes of 2017; "Easement Holder"), does hereby forever remise, release and forever quitclaims to [FULL OWNER NAME] the fee owner of that real property subject to the easement ("Easement") described in the [INSTRUMENT NAME] dated [INSTRUMENT DATE], recorded on [RECORDING DATE], as Instrument No. [XX-XXXXXXX] in the Official Records, in the Office of the Registrar-Recorder/County Clerk of the County of Los Angeles, that portion of the Easement more particularly described on attached Exhibit "A" and depicted on attached Exhibit "B", which exhibits are fully incorporated herein by this reference.

IN WITNESS WHEREOF, on _____, 20_____, the **Santa Clarita Valley Water Agency,** a California special act water agency, has caused this instrument to be executed by its duly authorized officer.

Dated: _____

Santa Clarita Valley Water Agency

By: _____

Matthew G. Stone, General Manager

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

STATE OF CALIFORNIA)
) ss.
COUNTY OF _____)

On _____, 20_____, before me, _____, a Notary Public, personally appeared _____, who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

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

WITNESS my hand and official seal.

_____
Notary Public

Part IV
Right of Way (Pending)