STANDARD DETAILS

REVISED: 2024

SAN JUAN WATER DISTRICT
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Index

SHEET NO. DETAIL

CP1-CP7 Not include (for special projects only)

GENERAL WATER NOTES - SAN JUAN WATER DISTRICT (REV 10/12)

1. **LICENSING** - CONTRACTOR INSTALLING WATER SYSTEM MUST BE APPROVED BY SJWD AND SHALL POSSESS, AND MAINTAIN, A STATE OF CALIFORNIA CLASS A OR C34 CONTRACTOR'S LICENSE FOR THE PROJECT DURATION.
2. **APPROVALS** - SAN JUAN WATER DISTRICT (SJWD) APPROVAL SIGNATURES ON THE CONSTRUCTION PLANS/DRAWINGS ARE VALID FOR A PERIOD OF ONE (1) YEAR FROM THE DATE OF SIGNATURE. PLANS SHALL BE SUBJECT TO REVIEW AND RE-APPROVAL THEREAFTER.
3. **PRE-WORK SITE CONDITIONS** - CONTRACTOR IS ADVISED TO PHOTOGRAPH AND/OR VIDEO THE JOB SITE AREA TO DOCUMENT EXISTING CONDITIONS PRIOR TO BEGINNING WORK TO MINIMIZE UNDUE CLAIMS.
4. **RESTORATION** - CONTRACTOR IS RESPONSIBLE TO PROTECT EXISTING PROPERTY AND FACILITIES. CONTRACTOR SHALL RETURN ALL AFFECTED PROPERTY TO ORIGINAL OR BETTER CONDITION, INCLUDING BELOW-GRADE FACILITIES AND TRAFFIC MARKINGS. ALL CLAIMS SHALL BE BORNE AND RESOLVED BY CONTRACTOR OR SJWD MAY CHOOSE TO ADDRESS SAID CLAIM AND MAY DEDUCT ANY ASSOCIATED COSTS FROM FINAL PAYMENT OR RETENTION. A COPY OF ANY CLAIMS DOCUMENTATION SUBMITTED TO CONTRACTOR SHALL IMMEDIATELY BE PROVIDED TO SJWD.
5. **SAFETY** - CONTRACTOR IS SOLELY RESPONSIBLE FOR ANY CURRENTLY APPLICABLE SAFETY LAW OF ANY JURISDICTIONAL AGENCY. CONTRACTOR SHALL BE RESPONSIBLE FOR SHORING, SLOPING AND BRACING. CONTRACTOR IS ALSO RESPONSIBLE FOR PROJECT SITE SAFETY AND FOR PUBLIC SAFETY INCLUDING TRAFFIC CONTROL, 24 HOURS/DAY FOR ALL DAYS FROM THE NOTICE TO PROCEED THROUGH THE NOTICE OF FINAL COMPLETION.
6. **PERMITTING** - CONTRACTOR IS RESPONSIBLE TO VERIFY ACQUISITION OF, AND COMPLIANCE WITH, APPLICABLE PERMITS, INCLUDING BUT NOT NECESSARILY LIMITED TO NPDES AND ENCROACHMENT PERMITS.

7. **SJWD STANDARDS** – MATERIALS AND INSTALLATION SHALL, AT A MINIMUM, BE IN CONFORMANCE WITH THE CURRENT SJWD STANDARDS IN EFFECT AT THE TIME OF BID. CONTRACTOR SHALL HAVE THE APPLICABLE SJWD STANDARD DETAILS AND SPECIFICATIONS ONSITE AND READILY AVAILABLE FOR CONTRACTOR'S USE AND FOR INSPECTION BY THE SJWD ENGINEERING OR CONSTRUCTION INSPECTOR UPON REQUEST.
8. **MATERIALS** - ALL MATERIALS SHALL BE NEW, AND MATERIALS AND INSTALLATION SHALL BE IN CONFORMANCE WITH CURRENT SJWD STANDARD DETAILS AND SPECIFICATIONS IN EFFECT AT TIME OF CONSTRUCTION. UNLESS OTHERWISE APPROVED BY SJWD IN WRITING, ONLY DOMESTIC (USA) SOURCED AND SJWD APPROVED MATERIALS, INCLUDING DUCTILE IRON PIPE AND FITTINGS, WILL BE ACCEPTED. SJWD SHALL HAVE THE RIGHT OF FINAL DECISION ON ALL MATERIALS INCLUDING, BUT NOT LIMITED TO, BACKFILL, PIPE, FITTINGS AND VALVES, THAT WILL BE USED FOR PLACEMENT OF ALL WATER FACILITIES INCLUDING WATER MAIN. SJWD TO PRE-APPROVE ALL SUBSTITUTIONS.
9. **SUBMITTALS AND SUBSTITUTIONS** - PROVIDE MATERIALS AND OTHER SUBMITTALS TO SJWD FOR APPROVAL PRIOR TO BEGINNING WORK. ANY REQUEST FOR A SUBSTITUTION MUST BE SUBMITTED IN WRITING AND WITH DOCUMENTATION OF EQUALVANCY.
10. **PRE-CONSTRUCTION MEETING** - A PRE-CONSTRUCTION MEETING IS REQUIRED (TYPICALLY ONSITE) WITH SJWD AND THE CONTRACTOR (AND THE COUNTY INSPECTOR WHEN APPLICABLE) PRIOR TO COMMENCING WORK. CONTRACTOR'S FOREMAN IS REQUIRED TO ATTEND ANY PRE-CONSTRUCTION MEETING OR ANY WALK-THROUGH MEETING. THE FOREMAN, OR SJWD APPROVED ALTERNATE, IS REQUIRED TO BE ONSITE DURING ALL PHASES OF THE WORK. CONTRACTOR SHALL NOT REPLACE FOREMAN WITHOUT PRIOR WRITTEN APPROVAL OF SJWD.
11. **USA** - UNDERGROUND SERVICE ALERT (USA) SHALL BE NOTIFIED 48 HOURS PRIOR TO BEGINNING ANY CONSTRUCTION. CALL USA AT 1-800-227-2600. SJWD'S USA CREW IS ONLY RESPONSIBLE FOR MARKING THOSE WATER

FACILITIES OWNED BY SJWD AND SHALL NOT BE RESPONSIBLE FOR MARKING OTHER FACILITIES INCLUDING THOSE NEWLY INSTALLED BUT NOT ACCEPTED BY OR CONVEYED TO SJWD. THE OWNER OF NEW DEVELOPMENT IS RESPONSIBLE FOR MARKING SAID NEW FACILITIES.

12. **LOCATING AND POTHOLING** - CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL EXISTING FACILITIES AND FOR POTHOLING ALL WATER LINE CONNECTION POINTS TO CONFIRM SIZE, DEPTH, AND MATERIAL TYPE OF EXISTING FACILITIES. INFORMATION ON THE TYPES, LOCATIONS, SIZES AND DEPTHS OF EXISTING OR PLANNED UNDERGROUND OR ABOVE GROUND UTILITIES, STRUCTURES, ROADS, PIPELINES, HARD ROCK, STRATA, TOPOGRAPHY, ETC., AS PROVIDED BY SJWD WERE OBTAINED FROM SOURCES OF VARYING RELIABILITY. A REASONABLE EFFORT HAS BEEN MADE TO PROVIDE ACCURATE INFORMATION HOWEVER; SJWD CANNOT ASSUME RESPONSIBILITY FOR THE COMPLETENESS OR ACCURACY OF SAID INFORMATION. CONTRACTOR SHALL BRING INACCURACIES AND CONFLICTS TO THE ATTENTION OF SJWD FOR RESOLUTION PRIOR TO BEGINNING OR CONTINUING WORK.
13. **NOTIFICATIONS** - CONTRACTOR SHALL NOTIFY SJWD 48 HOURS (MINIMUM) PRIOR TO BEGINNING CONSTRUCTION; 48 HOURS (MINIMUM) PRIOR TO SCHEDULING ANY MEETING; AND 24 HOURS (MINIMUM) PRIOR TO AN INSPECTION. CONTRACTOR SHALL NOTIFY SJWD 48 HOURS (MINIMUM) FOR WATER SYSTEM SHUT-OFF OR WATER MAIN SHUTDOWN REQUESTS THAT DO NOT AFFECT WATER SERVICES OR CUSTOMERS, AND 72-HOURS (MINIMUM) FOR SHUT-OFF/SHUTDOWN REQUESTS THAT WILL AFFECT WATER SUPPLY OR AFFECT CUSTOMER WATER SERVICE.
14. **SHUTOFFS** – SHUTOFF AND/OR SHUT-DOWN TIME SHALL NOT EXCEED FOUR (4) HOURS WITHOUT PRIOR SJWD APPROVAL.
15. **TIE-INS** - ALL TIE-INS TO EXISTING WATER LINES SHALL BE MADE BY SJWD APPROVED LICENSED CONTRACTOR UNDER SJWD PERSONNEL SUPERVISION, UNLESS OTHERWISE APPROVED BY SJWD IN WRITING OR NOTED ON THE

PLAN. TIE-INS AND SHUTDOWNS ARE LIMITED TO WEDNESDAYS AND/OR THURSDAYS UNLESS OTHERWISE APPROVED BY SJWD.

16. **SURVEYING** - THE CONTRACTOR (OR DEVELOPER'S ENGINEER IN THE CASE OF DEVELOPER-FUNDED PROJECTS) IS RESPONSIBLE FOR ALL REQUIRED STAKING, SHOWING THE LOCATION AND GRADES FOR INSTALLING ALL WATER SYSTEM FACILITIES. STAKES SHALL SHOW STATIONING. SURVEY INFORMATION SHALL BE SHOWN ON THE AS-BUILT DRAWINGS.
17. **PROTECTION OF MONUMENTS** - THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING AND MAINTAINING ALL SURVEY MONUMENTS AND STAKING WHETHER EXISTING OR DISCOVERED DURING CONSTRUCTION. ANY MONUMENTS DAMAGED BY CONTRACTOR SHALL BE PROPERLY RESTORED AT CONTRACTOR'S EXPENSE.
18. **INSPECTION** - ALL WATER FACILITIES TO BE OWNED BY SJWD, INCLUDING MAINS, FITTINGS, VALVES, AND SERVICES, SHALL BE INSPECTED AND APPROVED BY SJWD PRIOR TO BACKFILLING AND PRIOR TO ACTIVATION.
19. **MATERIALS TESTING** - SJWD SHALL SECURE THE SERVICES OF A STATE CERTIFIED, INDEPENDENT MATERIALS TESTING SERVICE TO PROVIDE MATERIALS TESTING, INCLUDING BUT NOT NECESSARILY LIMITED TO, COMPACTION TESTING OF BACKFILL MATERIAL. COMPACTION TESTING TO SHOW COMPLIANCE SHALL BE TAKEN AT A MINIMUM INTERVAL OF 50-LF OR AT THE MINIMUM JURISDICTIONAL CITY OR COUNTY REQUIREMENTS, WHICHEVER IS MORE STRICT. COSTS FOR MATERIALS TESTING SHALL BE BORNE BY SJWD FOR SJWD-FUNDED PROJECTS. COSTS FOR MATERIALS TESTING SHALL BE BORNE BY THE DEVELOPER FOR DEVELOPER-FUNDED PROJECTS AND WILL BE CHARGED TO THE PROJECT BY SJWD AND BILLED TO THE DEVELOPER. UNLESS OTHERWISE APPROVED, CONTRACTOR SHALL BE RESPONSIBLE TO PAY FOR RE-TESTING IF REQUIRED FOR FAILURE TO MEET SPECIFICATIONS.
20. **NSF CERTIFICATION** – ALL MATERIALS IN CONTACT WITH POTABLE WATER MUST BE NSF CERTIFIED FOR SUCH APPLICATION. CONTRACTOR SHALL PROVIDE CERTIFICATIONS WITH SUBMITTAL(S).

21. **HEAVY METALS** - GALVANIZED PIPE AND FITTINGS, AND MATERIALS CONTAINING CONCENTRATIONS OF HEAVY METALS, INCLUDING CADMIUM, ZINC, AND LEAD, WHICH MAY BE RELEASED INTO SOLUTION, SHALL NOT BE USED WHERE IN CONTACT WITH POTABLE WATER. NSF CERTIFICATION MAY BE REQUESTED BY SJWD PRIOR TO ACCEPTANCE OF ANY MATERIAL.
22. **DISTRIBUTION MAINS** - UNLESS OTHERWISE NOTED ON THE PLANS, WATER MAINS 12-INCHES IN NOMINAL DIAMETER OR SMALLER SHALL BE EITHER:
    I. POLYVINYL CHLORIDE (PVC), CLASS 150 (DR 18) MINIMUM, CONFORMING TO THE REQUIREMENTS OF AWWA STANDARD C900, THE OUTSIDE DIAMETER MATCHING THE DIMENSIONS OF DUCTILE IRON PIPE. AN UPCLASS TO CLASS 200 (DR 14) MAY BE REQUIRED AS SHOWN ON THE DRAWINGS, OR IN PROXIMITY TO OR CROSSING OF HAZARDS.
    II. DUCTILE IRON PIPE, PRESSURE CLASS 350, CONFORMING TO THE REQUIREMENTS OF AWWA STANDARD C150, CEMENT MORTAR LINED PER AWWA STANDARD C104, BITUMINOUS COATED PER AWWA STANDARD C151, AND POLYETHYLENE ENCASED PER AWWA STANDARD C105. PRESSURE CLASS 300 OR LOWER MAY BE ALLOWED UPON WRITTEN DISTRICT PRE-APPROVAL. IN SOME CASES ADDITIONAL CORROSION PROTECTION MEASURES MAY BE REQUIRED BY SJWD.
23. **TRANSMISSION MAINS** - WATER MAINS LARGER THAN 12-INCHES SHALL BE EITHER:
    I. DUCTILE IRON PIPE, WITH CLASS, THICKNESS, COATING, LINING, ENCASEMENT AND OTHER REQUIREMENTS TO BE PRE-APPROVED BY SJWD PRIOR TO BEGINNING WORK.
    II. STEEL PIPE, AWWA C200, WITH THICKNESS, LINING, COATING, AND OTHER APPURTENANCES AND OTHER REQUIREMENTS TO BE PRE-APPROVED BY SJWD PRIOR TO BEGINNING WORK.
    III. OTHER MATERIALS MAY OR MAY NOT BE ALLOWED ON A CASE-BY-CASE BASIS WITH PRIOR PRE-APPROVAL OF SJWD.
24. **VALVES** - ALL VALVES SHALL BE FLANGED TO CROSSES AND TEES UNLESS OTHERWISE DIRECTED BY SJWD'S ENGINEER. UNLESS OTHERWISE NOTED

ON THE PLANS OR DIRECTED BY SJWD, INSTALL SJWD APPROVED GATE VALVES (AWWA C509) ON PIPELINE 10-INCHES AND SMALLER, AND INSTALL SJWD APPROVED BUTTERFLY VALVES (AWWA C504) ON PIPELINES EQUAL TO OR LARGER THAN 12-INCH DIAMETER.

25. **FITTINGS** – UNLESS OTHERWISE APPROVED BY SJWD'S ENGINEER, ALL FITTINGS FOR DUCTILE IRON AND C900 PIPELINES SHALL BE DIP, PRESSURE CLASS MATCHING THE PIPELINE, AWWA C110/C115. BURIED FITTINGS SHALL BE CEMENT MORTAR LINED PER AWWA C104, AND BITUMINOUS COATED PER AWWA C151. COMPACT STYLE FITTINGS CONFORMING TO AWWA C153 MAY BE ALLOWED WITH SJWD PRE-APPROVAL.
26. **HYDRANTS** - ALL PUBLIC FIRE HYDRANTS (TO BE CONVEYED TO SJWD) SHALL BE AWWA APPROVED WET BARREL, CLOW 960 OR DISTRICT APPROVED EQUIVALENT, AND SHALL BE INSTALLED WITH BREAK-OFF CHECK VALVES. BREAK-OFF BOLTS SHALL NOT BE ALLOWED. PUBLIC FIRE HYDRANTS SHALL BE FURNISHED WITH TWO LAYERS OF FACTORY-APPLIED WHITE COATING. PRIVATE FIRE HYDRANTS SHALL BE PAINTED YELLOW. COATINGS SHALL BE POLYURETHANE EPOXY, OR EPOXY BASE COAT WITH ACRYLIC TOPCOAT. FIRE HYDRANT LOCATION SHALL BE APPROVED BY SJWD. FIRE HYDRANTS SHALL BE INSTALLED WITH THE BASE FLANGE A MINIMUM OF 8-INCHES ABOVE FINISHED GRADE.
27. **AIR/VACUUM VALVES** - UNLESS OTHERWISE INDICATED ON THE PLANS, AIR AND/OR VACUUM RELEASE VALVES TO BE APCO #143-C OR SJWD APPROVED EQUAL. INSTALL PER SJWD CURRENT DETAIL AT TIME OF CONSTRUCTION.
28. **ENCASEMENT** - ALL VALVES AND FITTINGS SHALL BE POLYETHYLENE ENCASED PER AWWA STANDARD C105.
29. **FASTENERS** – UNLESS OTHERWISE SHOWN OR SPECIFIED OR APPROVED BY SJWD'S ENGINEER, ALL FASTENERS (BOLTS, SCREWS, WASHERS, NUTS, ETC.) SHALL BE ASTM A307/A563 GRADE A CARBON STEEL AND SHALL BE XYLAN COATED (TRIPAC 2000 BLUE COATING SYSTEM) OR SJWD APPROVED EQUAL.
30. **THRUST BLOCKING** - THRUST BLOCKS, OR IN SOME CASES APPROVED MECHANICAL RESTRAINT, SHALL BE INSTALLED WHERE PIPE DEFLECTIONS

EXCEED 4 DEGREES PER COUPLING/FITTING OR WHERE SPECIFIED BY MANUFACTURER. UNLESS OTHERWISE PRE-APPROVED BY SJWD'S ENGINEER, THRUST BLOCKS SHALL BE PROVIDED AT JOINTS/FITTINGS AND LOCATIONS IN ADDITION TO LOCATIONS WHERE MECHANICAL RESTRAINTS ARE PROVIDED, OR WHERE DIRECTED BY SJWD.

31. **STORM AND SANITARY SEWER PROXIMITY** - WATER MAINS SHALL BE LAID IN SEPARATE TRENCHES AS FAR AS POSSIBLE FROM NEARBY SANITARY SEWER AND STORM DRAIN LINES. A MINIMUM OF C-900 CLASS 200 PVC OR CLASS 50 DUCTILE IRON PIPE TYPICALLY MUST BE USED WHEN IN CLOSE PROXIMITY TO SANITARY SEWER LINES OR CROSSINGS, AND IN SOME CASES WHEN ADJACENT TO OTHER UTILITIES THAT MAY THREATEN POTABLE WATER SUPPLY. THE MATERIAL CLASS AND/OR PRESSURE RATING OF ANY UPCLASS OF PIPING MATERIALS SHALL BE PRE-APPROVED BY SJWD. PLACEMENT OF WATER LINES NEAR SOURCES OF POTENTIAL CONTAMINATION OR HYDROCARBON RELATED FACILITIES SHALL RECEIVE SPECIAL APPROVAL CONSIDERATION. CONTRACTOR TO IMMEDIATELY INFORM SJWD WHEN INSUFFICIENT SEPARATION CONDITIONS OCCUR (LESS THAN 10-FT HORIZONTAL OR 1-FT VERTICAL). WATER FACILITIES SHALL CROSS ABOVE OTHER FACILITIES WHENEVER POSSIBLE. IF WATER FACILITIES MUST CROSS BELOW OTHER FACILITIES THEN AN UPCLASS IN MATERIALS AND A SJWD-APPROVED CONTROLLED DENSITY BACKFILL MATERIAL SHALL BE USED AS DIRECTED BY SJWD'S ENGINEER.
32. **COVER** - TOP OF WATER DISTRIBUTION MAINS (TYPICALLY 12-INCH DIAMETER OR SMALLER) SHALL HAVE A MINIMUM OF 36-INCHES OF COVER IN RIGHT-OF-WAY (ASPHALT SURFACED ROADS) AND 48-INCHES OF COVER IN NON RIGHT-OF-WAY AREAS (CROSS-COUNTRY OR OPEN LAND) UNLESS OTHERWISE SHOWN ON THE APPROVED DRAWINGS OR DIRECTED BY SJWD. TRANSMISSION MAINS (TYPICALLY LARGER THAN 12-INCHES) SHALL HAVE A MINIMUM OF 48-INCHES OF COVER (FINAL COVER DEPTH TO BE APPROVED BY SJWD).

33. **BACKFILL** - ALL TRENCHES IN EXISTING OR PROPOSED STREETS AND PAVED AREAS SUCH AS PARKING LOTS, DRIVEWAYS, ETC., SHALL BE BACKFILLED AND COMPACTED IN ACCORDANCE WITH THE CURRENT STANDARDS AND SPECIFICATIONS OF SJWD. BACKFILL ABOVE THE BEDDING AND INITIAL PIPE ZONE SHALL ALSO COMPLY WITH MINIMUM REQUIREMENTS OF THE JURISDICTIONAL COUNTY OR CITY IN WHICH THE WORK IS BEING DONE, INCLUDING ANY ENCROACHMENT PERMIT CONDITIONS.
34. **HYDROSTATIC TESTING** - CONTRACTOR SHALL PROVIDE A PASSING HYDROSTATIC TEST, IN ACCORDANCE WITH AWWA STANDARDS AND/OR USING A METHOD AS APPROVED BY SJWD, TO BE WITNESSED BY AN AUTHORIZED SJWD REPRESENTATIVE PRIOR TO SJWD ACCEPTANCE.
35. **BACTERIOLOGICAL TESTING** – CONTRACTOR SHALL PROVIDE AN SJWD APPROVED MEANS (LOCATIONS AND APPROPRIATE MATERIALS) FOR BACTERIOLOGICAL TESTING. SJWD SHALL COLLECT AND PAY FOR SAMPLES FOR BACTERIOLOGICAL TESTING PRIOR TO ACCEPTANCE. CONTRACTOR SHALL BE RESPONSIBLE FOR THE COSTS ASSOCIATED WITH FAILURE TO PASS SAID TESTING.
36. **DISINFECTION** - ALL NEW WATER MAINS SHALL BE DISINFECTED IN ACCORDANCE WITH AWWA STANDARDS, BY AN SJWD APPROVED INJECTION METHOD ONLY (NOT USING TABLETS) USING EQUIPMENT SPECIFIED FOR CHLORINE INJECTION (NOT HYDROSTATIC TEST PUMPS), SUITABLE TO MAINTAIN A 50 PPM TO 100 PPM CONSTANT FEED CONCENTRATION.
37. **SERVICE TESTING** - SADDLES AND SERVICES (FROM MAIN TO METER) SHALL BE INSTALLED PRIOR TO HYDROSTATIC PRESSURE TESTING AND BACTERIOLOGICAL TESTING. SERVICES SHALL BE SET TO FINAL GRADE AND FLUSHED PRIOR TO TESTING.
38. **SERVICE LOCATION MARKING** - THE LOCATION OF WATER SERVICE LINES SHALL BE PERMANENTLY INDICATED BY EMBEDDING THE LETTER "W" IN THE CURB DIRECTLY ABOVE THE SERVICE LINE. CONTRACTOR SHALL BE RESPONSIBLE TO MARK ANY CURB WHICH IS POURED AFTER THE INSTALLATION OF THE SERVICE LINES. WHERE CONCRETE CURB DOES NOT

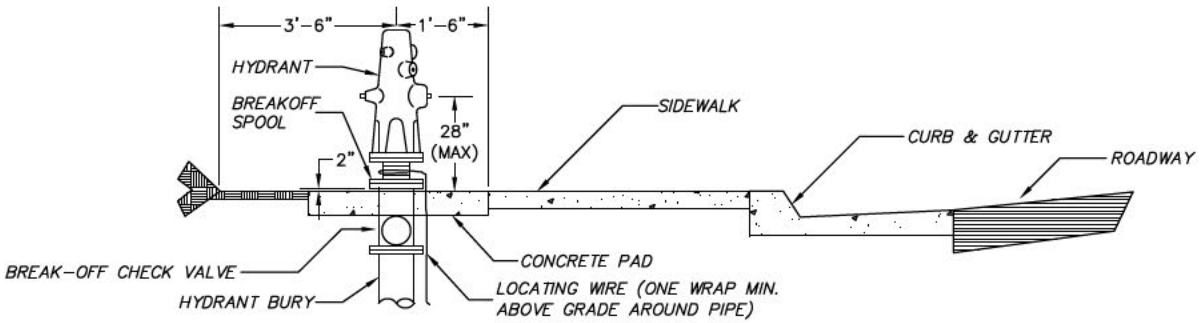
EXIST, OR WAS NOT POURED WITH PROJECT, A THERMALLY TRANSFERRED "W" UNIMARK CURB MARKER (OR SJWD APPROVED EQUIVALENT) SHALL BE PLACED ON THE FACE OF EXISTING CURB OR ON AN AC DIKE OR AT THE NEAREST EDGE OF PAVEMENT AS DIRECTED BY SJWD.

39. **SERVICES** – WATER SERVICE LINE/PIPING (FROM THE MAIN TO THE METER) FROM 1-INCH TO 2-INCH DIAMETERS, SHALL BE HDPE, CONFORMING TO AWWA C901, AND A 1,600-PSI HDB PER ASTM D 2837. 1-INCH LINE SHALL HAVE A NOMINAL IPS (IRON PIPE SIZE) OUTSIDE DIAMETER (OD), AND 1.5- TO 2-INCH LINE SHALL HAVE A NOMINAL CTS (COPPER TUBE SIZE) OD. UNLESS OTHERWISE SHOWN ON THE DRAWINGS OR DIRECTED BY SJWD THE MINIMUM STANDARD RESIDENTIAL SERVICE LINE SIZE SHALL BE 1.5-INCH.
40. **BACKFLOW PROTECTION** - BACKFLOW PREVENTION DEVICES, WHEN REQUIRED, SHALL BE INSTALLED BY CONTRACTOR AND TESTED AND CERTIFIED BY SJWD OR OTHER SJWD APPROVED CERTIFIED BACKFLOW TESTER PRIOR TO WATER SERVICE ACTIVATION. THE TYPE OF BACKFLOW PREVENTION DEVICE SHALL BE APPROVED BY SJWD. SINGLE CHECK DETECTOR CHECK TYPE BACKFLOW DEVICES SHALL NOT BE ALLOWED. NO TEES OR CROSS CONNECTIONS SHALL BE ALLOWED BETWEEN THE WATER METER AND A BACKFLOW PREVENTION DEVICE. THE BACKFLOW PREVENTION DEVICE SHALL BE INSTALLED AS CLOSE AS POSSIBLE TO THE WATER METER OR POINT OF SERVICE CONNECTION (TYPICALLY WITHIN 18-INCHES) AND THE WATER LINE BETWEEN MAY BE REQUIRED TO BE ENCASED IN CONCRETE PER THE DIRECTION OF THE SJWD REPRESENTATIVE.
41. **DISCHARGES** – ALL DISCHARGES SHALL BE IN ACCORDANCE WITH PERMIT CONDITIONS. DISINFECTION OF WATER SYSTEM FACILITIES SHALL BE IN ACCORDANCE WITH SJWD AND COUNTY AND/OR STATE REQUIREMENTS, INCLUDING NPDES. DISCHARGED DISINFECTION WATER SHALL BE DECHLORINATED TO A MINIMUM ACCEPTABLE CHLORINE CONCENTRATION AND TURBIDITY LEVEL PRIOR TO RELEASE. CONTRACTOR SHALL OBTAIN AND COMPLY WITH THE NECESSARY PERMITS, AND SHALL PROVIDE THE NECESSARY DOCUMENTATION ENSURING COMPLIANCE WHERE

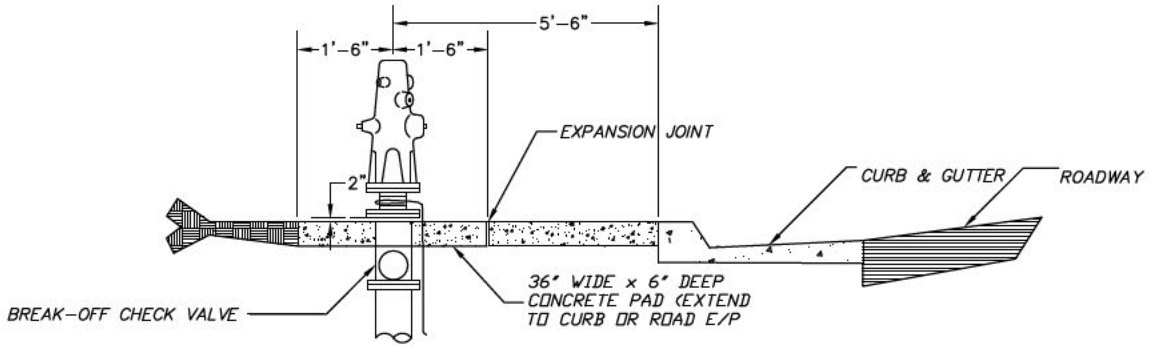
APPLICABLE. CONTRACTOR SHALL SUBMIT A SUMMARY REPORT INDICATING PRE- AND POST-DISCHARGE WATER QUALITY, AND DISCHARGED VOLUMES TO SJWD, INCLUDING COPIES OF ANY LABORATORY OR OTHER TESTING AND FIELD REPORTS.

42. **SALVAGE AND DISPOSAL** - UNLESS OTHERWISE DIRECTED BY SJWD OR NOTED IN THE CONTRACT DOCUMENTS, CONTRACTOR IS RESPONSIBLE FOR REMOVAL AND DISPOSAL OF ALL SALVAGE PIPE, AS WELL AS ANY FITTINGS OR OTHER RELATED MATERIALS GENERATED FROM ANY TIE-IN OR CONNECTION TO SJWD WATERLINES. BRASS AND COPPER, AND METERS, SHALL TYPICALLY BE RETURNED TO SJWD. HANDLING AND DISPOSAL MUST BE IN ACCORDANCE WITH REGULATORY REQUIREMENTS. A COPY OF ANY CHAIN OF CUSTODY AND/OR PERMITTING DOCUMENTATION ASSOCIATED WITH ANY HAZARDOUS MATEIALS DISPOSAL SHALL BE PROVIDED TO SJWD.
43. **TREES AND LANDSCAPING** - PLANTING OF TREES AND SHRUBS WITHIN THE P.U.E AND/OR EASEMENTS WHERE A WATER MAIN AND/OR SERVICES OR OTHER WATER FACILITIES ARE PROPOSED OR EXISTING SHALL BE AVOIDED. UNDER NO CIRCUMSTANCES SHALL A TREE OR SHRUB BE PLANTED WITHIN 5-FT OF THE OUTSIDE WALL OF A WATER LINE TRENCH. ALL ABOVE-GRADE WATER FACILITIES MUST REMAIN ACCESSIBLE. ALL SHRUBS AND/OR TREES THAT ARE TO BE PLANTED WITHIN A P.U.E. SHALL BE CENTER TAPPING ROOT ORNAMENTAL TYPE. SJWD RESERVES THE RIGHT TO REMOVE TREES AND SHRUBS THAT MAY IMPACT, OR HAVE IMPACTED, WATER FACILITIES.
44. **RECORD DRAWINGS** - AS-BUILT (RECORD) DRAWINGS OF THE INSTALLED WATER SYSTEM ARE REQUIRED FROM THE CONTRACTOR (OR DEVELOPER) WHO INSTALLED THE WATER SYSTEM IMPROVEMENTS. THE AS-BUILT DRAWINGS MUST BE SUBMITTED TO, AND APPROVED BY, SJWD WITHIN 30-DAYS OF COMPLETION OF CONSTRUCTION. RETENTIONS OR REMAINING FEES (OR DEVELOPMENT DEPOSITS) SHALL BE HELD UNTIL AS-BUILT APPROVAL BY SJWD.

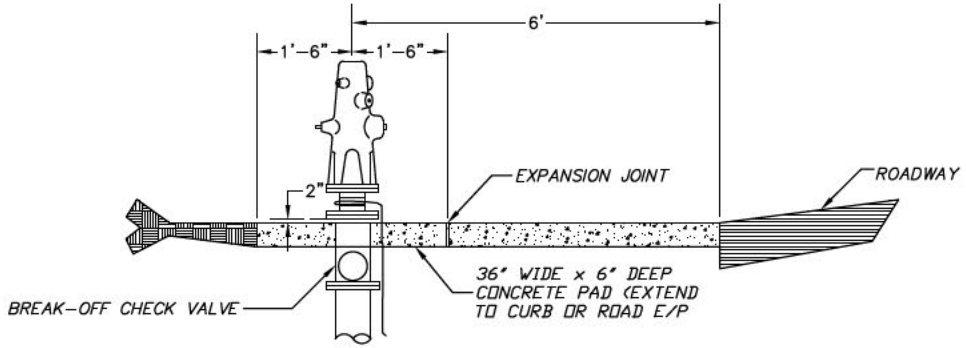
45. **<u>WARRANTY</u>** - WARRANTY OF NEW WATER FACILITIES TO BE CONVEYED TO SJWD SHALL BE FOR A MINIMUM PERIOD OF ONE (1) YEAR FROM DATE OF CONVEYANCE (OR FINAL ACCEPTANCE).



FIRE HYDRANT DETAIL (SIDEWALK)



FIRE HYDRANT DETAIL (CURB NO SIDEWALK)



FIRE HYDRANT DETAIL (PAVEMENT NO CURB)

NOTES:

1. PLACE FIRE HYDRANTS 5-1/2 FT BACK OF CURB WHERE NO SIDEWALK EXISTS.
2. HYDRANT CONCRETE PAD SUBGRADE SHALL BE CONSTRUCTED TO THE COUNTY REQUIREMENTS FOR ROADWAY CONSTRUCTION AND UNDERLYING SOIL SHALL HAVE A 95% RELATIVE COMPACTION MINIMUM, OR AS OTHERWISE DIRECTED PER SAN JUAN WATER DISTRICT.
3. WHEN REQUIRED BY SJWD GUIDE MARKERS SHALL CONFORM TO THE SJWD STANDARD GUIDE MARKER DETAIL (SHEET 16) DIRECTIONS. ROAD MARKER SHALL BE PLACED PER FIRE DEPT. OR COUNTY REQUIREMENTS.
4. THE FIRE HYDRANT SHALL BE LOCATED TO MAINTAIN A MINIMUM 3-FT CLEARANCE ON THREE SIDES FROM OBSTRUCTIONS, THE FOURTH SIDE, THE ACCESS SIDE, SHALL BE CLEAR OF ALL OBSTRUCTIONS.
5. UNDERGROUND ISOLATION VALVE ASSEMBLY IS TO BE PLACED ON MAIN IN STREET (AS SHOWN ON DETAIL SHEETS 2 AND 3).
6. FIRE HYDRANT LOCATION TO CONFORM WITH FIRE DEPARTMENT OR FIRE DISTRICT HAVING JURISDICTION AND SJWD DIRECTION.
7. FIRE HYDRANTS SHALL BE AWWA APPROVED WET BARREL, CLOW 960 OR DISTRICT APPROVED EQUIVALENT WITH BREAK-OFF CHECK VALVES AND FURNISHED WITH TWO LAYERS OF FACTORY APPLIED WHITE POLYURETHANE EPOXY COATING. (REF. TO WATER SYSTEM GENERAL NOTE "18").
8. IN COMMERCIAL AREAS PLACE FIRE HYDRANTS BETWEEN 3-1/2 FT TO 5-FT BACK OF CURB.
9. BOLLARD POSTS ARE REQUIRED WHERE FIRE HYDRANTS ARE LESS THAN 5-FT FROM BACK OF CURB OR WHEN DIRECTED TO BE PROVIDED BY SJWD.
10. SEE DETAIL SHEET 2 OR 3 FOR UNDERGROUND AND BOLLARD REQUIREMENTS.
11. BREAK-OFF CHECK VALVES REQUIRED ON ALL WET BARREL HYDRANTS WITH 6-IN MINIMUM LENGTH BREAKOFF SPOOL. PLACE UPPER FLANGE OF CHECK VALVE 2-IN ABOVE CONCRETE PAD.
12. ALL BOLTS SHALL BE NON-BREAKAWAY TYPE, GRADE 5 MINIMUM.
13. CONCRETE PAD AROUND BREAK-OFF CHECK VALVE SHALL BE 36-IN WIDE AND 6-IN DEEP (THICK) WITH 6-IN X 6-IN NO. 10 WELDED WIRE MESH AT MID-POINT OF CONCRETE SLAB. THE PAD SHALL EXTEND FROM THE HYDRANT TO CURB OR ROAD EDGE OF PAYMENT.
14. PROVIDE TONING/LOCATING WIRE PER STANDARD DETAIL SHEET 14 AND AS SHOWN HEREIN.

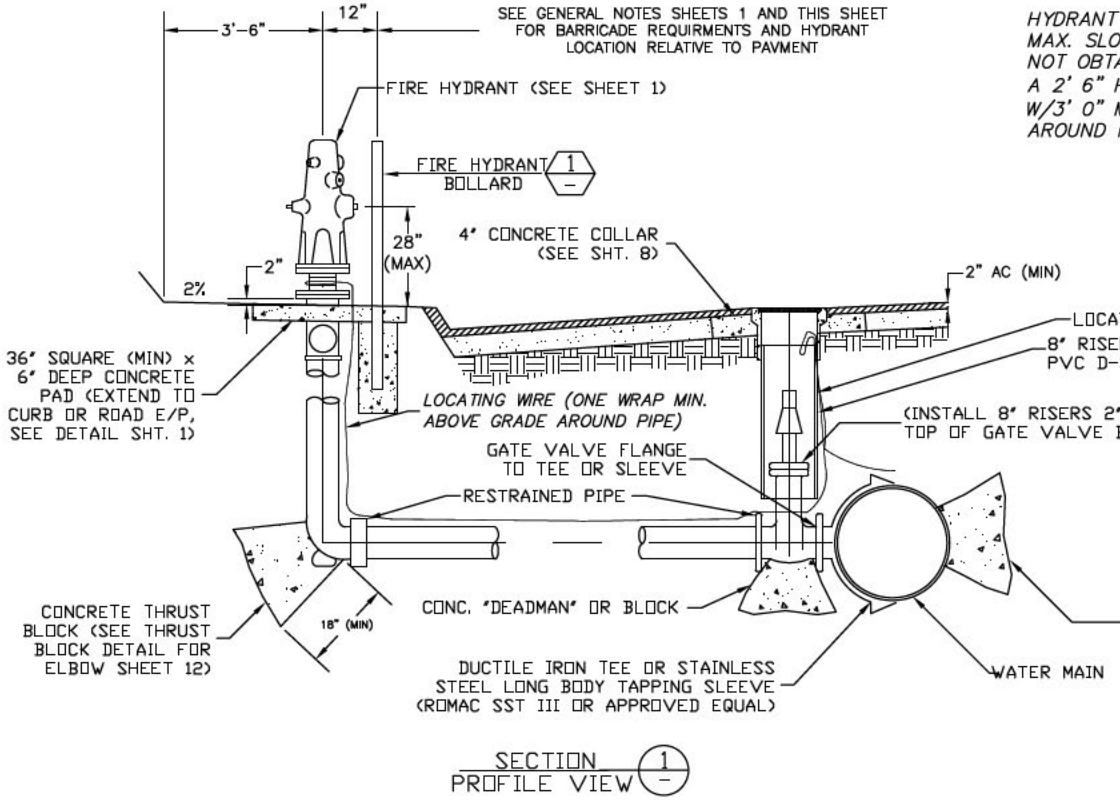
NO	DATE	REVISIONS	APP	BY

FIRE HYDRANTS

SAN JUAN WATER DISTRICT

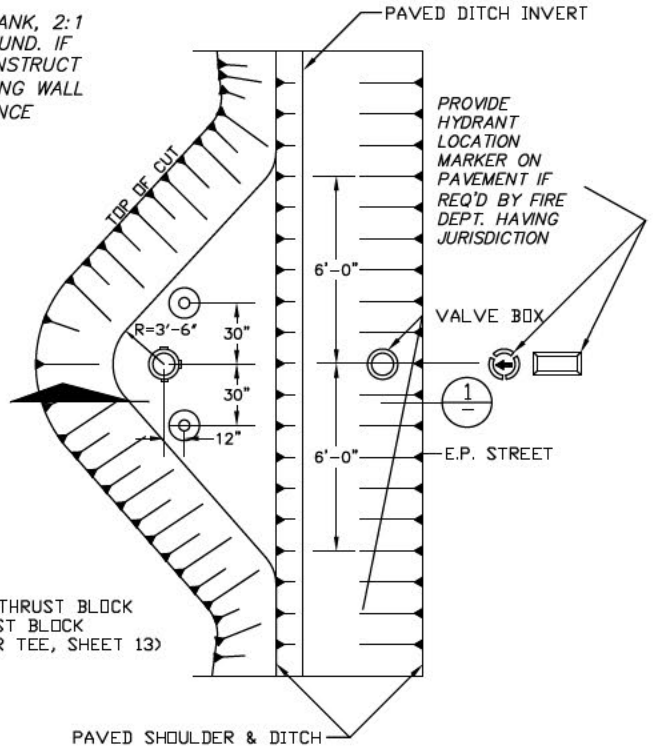
APPROVED

SCALE: NTS | PRINT DATE: 07/13/07 | DETAIL NO: SHT 1 OF 27

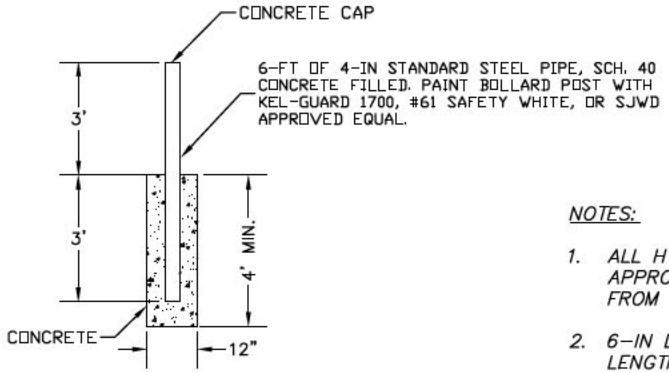


SECTION PROFILE VIEW 1

HYDRANT PAD CUT BANK, 2:1 MAX. SLOPE ALL AROUND. IF NOT OBTAINABLE, CONSTRUCT A 2' 6" HIGH RETAINING WALL W/3' 0" MIN. CLEARANCE AROUND HYDRANT



PLAN VIEW



DETAIL BOLLARD 1

NOTES:

1. *ALL HYDRANT LATERALS SHALL BE DIP UNLESS OTHERWISE APPROVED BY SJWD, AND SHALL BE MECHANICALLY RESTRAINED FROM VALVE TO BURY.*
2. *6-IN DIAMETER DIP ALLOWED FOR LATERALS UP TO 18-FT IN LENGTH. IF OVER 18 LF USE 8-IN DIAMETER DIP.*
3. *USE BOLLARD ONLY WHERE HYDRANT IS LESS THAN 5-FT BEHIND CURB OR LESS THAN 8-FT BEHIND PAVEMENT EDGE UNLESS OTHERWISE DIRECTED BY SJWD.*

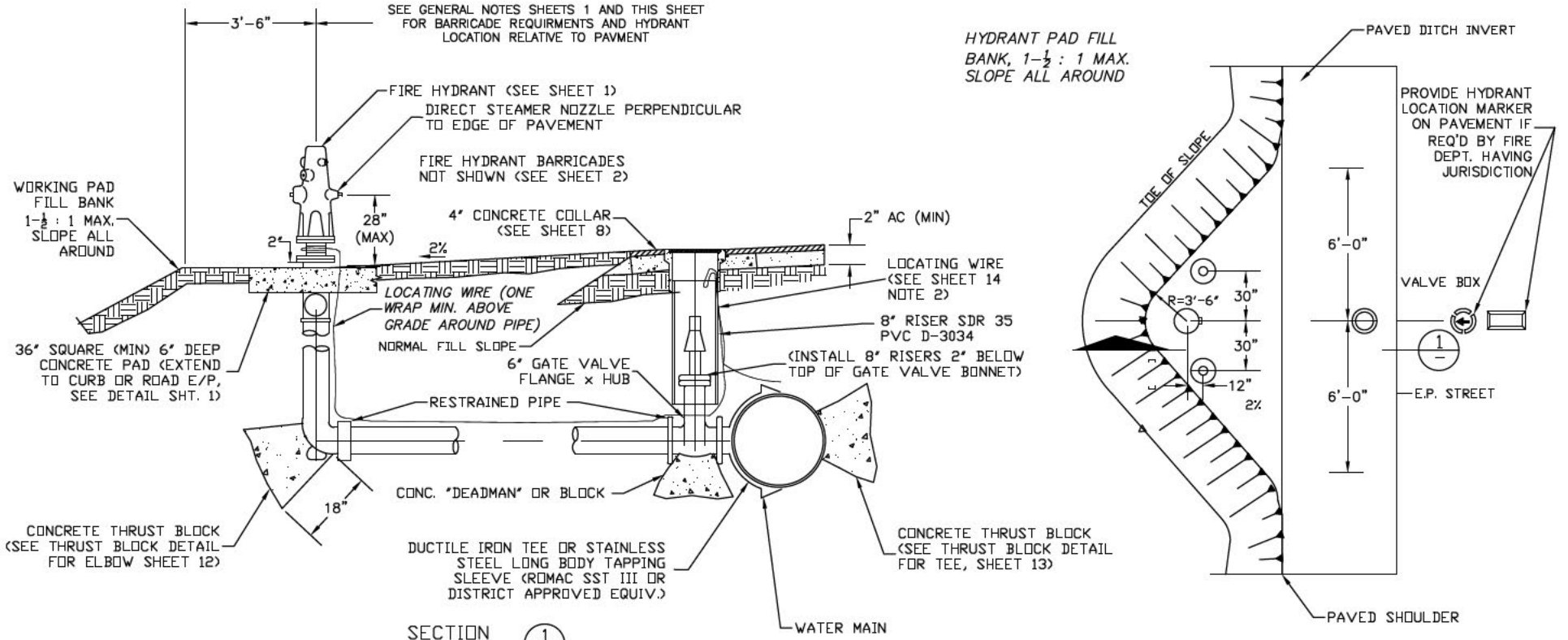
NO	DATE	REVISIONS	APP	BY

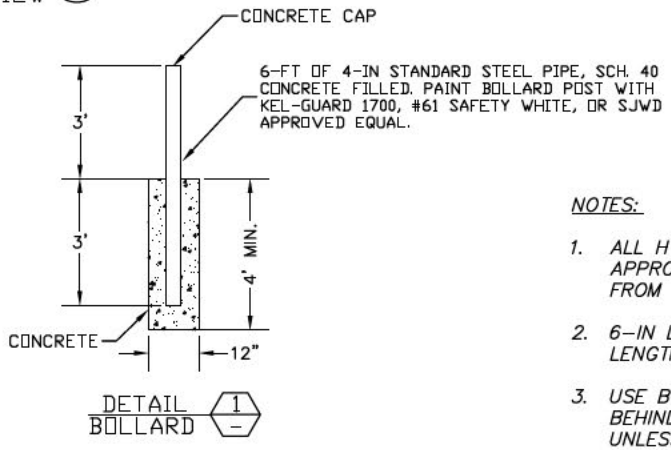
CUT - SLOPE FIRE HYDRANT

SAN JUAN WATER DISTRICT

APPROVED

SCALE: NTS | PRINT DATE: 04/17/07 | DETAIL NO: SHT 2 OF 27





NOTES:

1. *ALL HYDRANT LATERIALS SHALL BE DIP UNLESS OTHERWISE APPROVED BY SJWD, AND SHALL BE MECHANICALLY RESTRAINED FROM VALVE TO BURY.*
2. *6-IN DIAMETER DIP ALLOWED FOR LATERALS UP TO 18-FT IN LENGTH. IF OVER 18 LF USE 8-IN DIAMETER DIP.*
3. *USE BOLLARD ONLY WHERE HYDRANT IS LESS THAN 5-FT BEHIND CURB OR LESS THAN 8-FT BEHIND PAVEMENT EDGE UNLESS OTHERWISE DIRECTED BY SJWD.*

NO	DATE	REVISIONS	APP	BY

FILL -SLOPE FIRE HYDRANT

SAN JUAN WATER DISTRICT

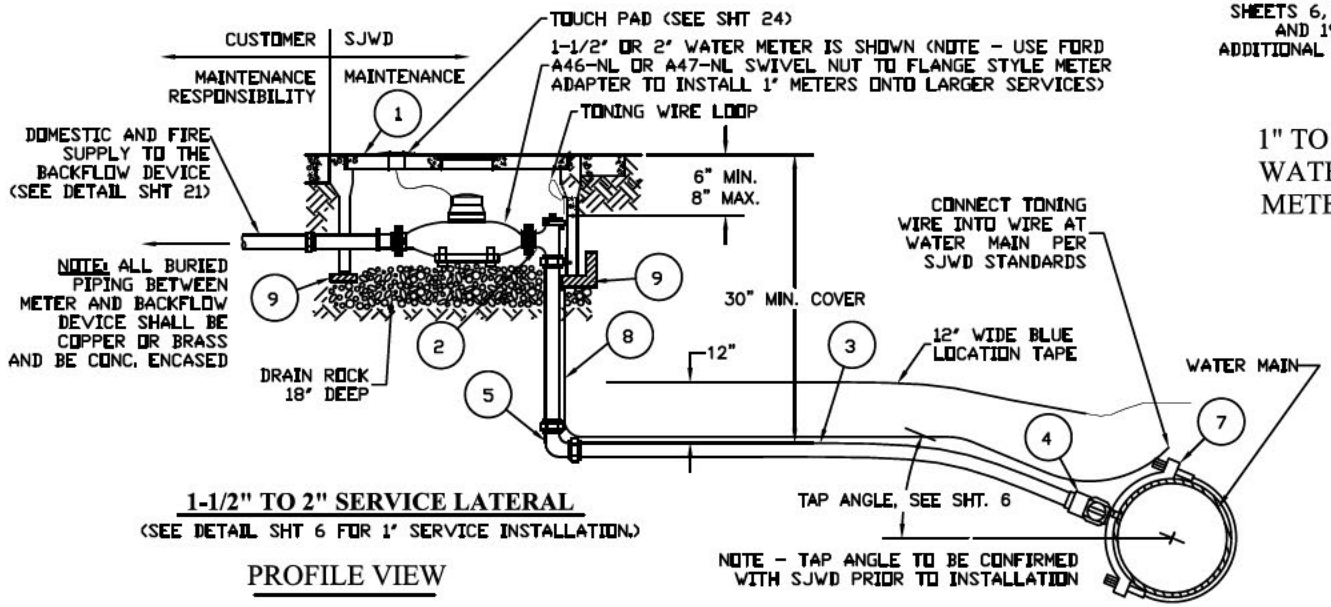
APPROVED

SCALE: NTS | PRINT DATE: 07/13/07 | DETAIL NO: SHT 3 OF 27

SERVICE MATERIALS DESCRIPTION AND PARTS/MODEL NUMBERS

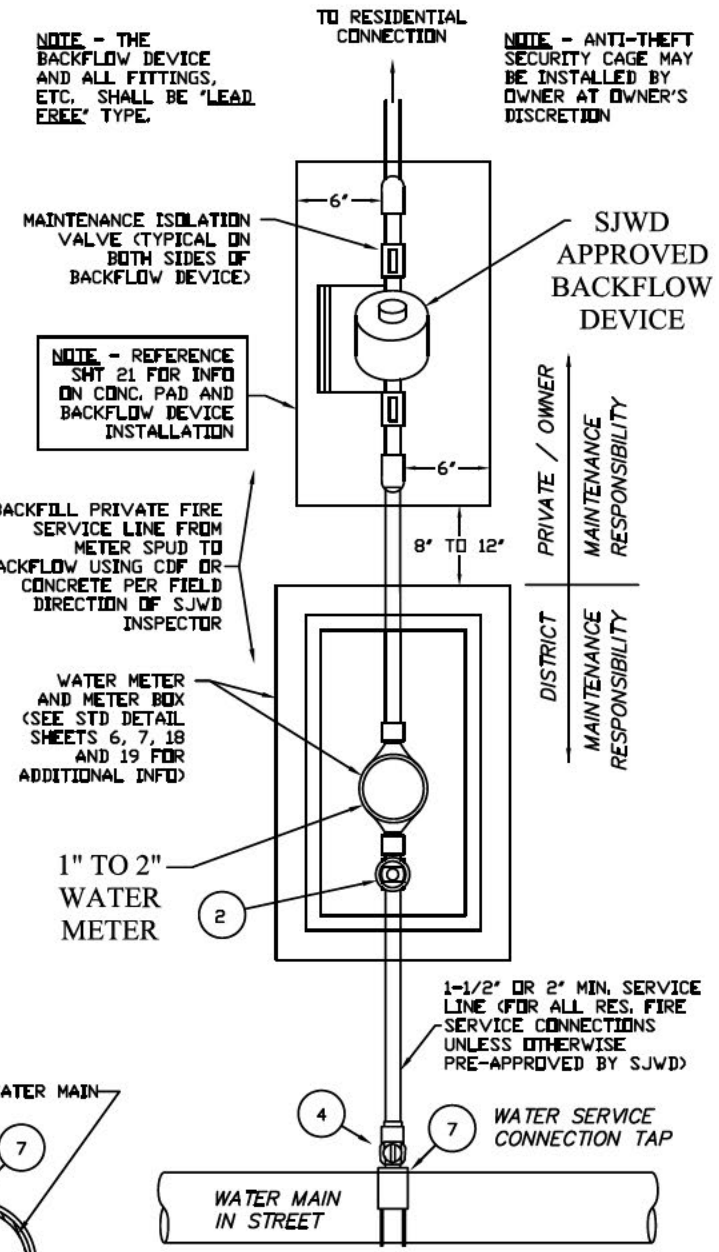
		1" METER B-16 BOX W/B-16GP LID AND PW/TRPL PLUG	1-1/2" METER B-36 BOX W/G-70GP LID AND PW/TRPL PLUG	2" METER B-36 BOX W/G-70GP LID AND PW/TRPL PLUG
1	METER BOX			
2	ANGLE METER VALVE	1" – FORD BA63-444W-NL 1-1/2" – FORD BFA43-666W-NL	FORD BFA43-666W-NL	FORD BFA43-777W-NL
3	SERVICE LINE (SIZE AS DIRECTED BY SJWD)	1" POLYETHYLENE TUBE, IPS 1-1/2" POLYETHYLENE TUBE, CTS	1-1/2" POLYETHYLENE TUBE, CTS 2" POLYETHYLENE TUBE, CTS	2" POLYETHYLENE TUBE, CTS
4	CORP. STOP	1" – FORD FB1101-4-NL 1-1/2" – FORD FB1100-6-NL	FORD FB1100-6-NL	FORD FB1100-7-NL
5	90 DEG. ELBOW (REQUIRED)	1" – FORD L66-44-NL 1-1/2" – FORD L44-66-NL	FORD L44-66-NL	FORD L44-77-NL
6	INSERT (STIFFENER; USE AT EACH) POLY CONNECTION, SEE SHT. 6)	1" – FORD 53-72 1-1/2" – FORD 54	FORD 54	FORD 55
7	SERVICE SADDLE (FOR ALL SIZES)	DIP, ACP, & STL – JONES 979 C-900 PVC – JONES 996	DIP –JONES 979 C-900 – JONES 996 OR EQUIV.	DIP –JONES 979 C-900 – JONES 996 OR EQUIV.
8	LOCATING WIRE	10 GA COPPER (INSULATED)	10 GA COPPER (INSULATED)	10 GA COPPER (INSULATED)
9	CONC. OR BRICK BLOCKING	2" X 4" (LENGTH AS REQ'D)	2" X 4" (LENGTH AS REQ'D)	2" X 4" (LENGTH AS REQ'D)

NOTES:
1. ALL MATERIALS, INCLUDING BACKFLOW PREVENTION DEVICES SHALL BE 'LEAD FREE' PER CA STATE REQM'TS.
2. BACKFLOW PREVENTION DEVICES SHALL BE RPP TYPE UNLESS OTHERWISE APPROVED BY SJWD ENGINEERING (WILKINS 975 XL2, OR FEBCO LF825Y). DOUBLE CHECK TYPE MAY BE ALLOWED WITH SJWD ENGINEERING APPROVAL ON A SPECIAL CASE REVIEW BASIS (WILKINS 350XL, FEBCO LF850).
3. COLD WEATHER INSULATED COVERS SHALL BE PROVIDED BY OWNER FOR ALL BACKFLOW DEVICES.
4. SECURITY CAGES, FAUX ROCK COVERS, OR OTHER PROTECTION METHODS ARE THE OWNER'S RESPONSIBILITY.
5. INSTALLATIONS REQUIRING A DOMESTIC METER LARGER THAN 1-IN SHALL BE PRE-APPROVED BY SJWD.
6. METER SIZE, MANUFACTURER, TYPE AND MODEL TO BE DETERMINED AND APPROVED BY SJWD ENGINEER.
7. PROVIDE DOMESTIC, IRRIGATION AND FIRE DEMAND CALCULATIONS FOR SJWD REVIEW FOR ALL PROJECTS.
8. BOLLARDS MAY BE REQUIRED TO PROTECT BACKFLOW DEVICE IN TRAFFIC HAZARD AREAS.
9. BACKFLOW PREVENTION DEVICES SHALL BE TESTED ANNUALLY BY AN SJWD APPROVED, STATE CERTIFIED BACKFLOW EQUIPMENT TESTER.
10. PROPERTY OWNER SHALL BE RESPONSIBLE FOR ALL BACKFLOW DEVICE MAINTENANCE, REPAIRS AND REPLACEMENT.
11. CONNECTIONS WITH ONSITE BOOSTER PUMPS SHALL BE APPROVED BY SJWD AND SHALL INCORPORATE A PRESSURE SUSTAINING CONTROL VALVE OR DEVICE TO ENSURE THE PUBLIC WATER SUPPLY DOES NOT DROP BELOW 20 PSI. SUBMIT PUMP SYSTEM DESIGN TO SJWD ENGINEER FOR PRE-APPROVAL BEFORE INSTALLATION.



1-1/2" TO 2" SERVICE LATERAL
(SEE DETAIL SHT 6 FOR 1" SERVICE INSTALLATION.)

PROFILE VIEW



PLAN VIEW

NO	DATE	REVISIONS	APP	BY

SINCE 1854
SJWD ENGINEERING DEPT

1", 1-1/2" & 2" RESIDENTIAL FIRE SERVICE INSTALLATION

SAN JUAN WATER DISTRICT

APPROVED

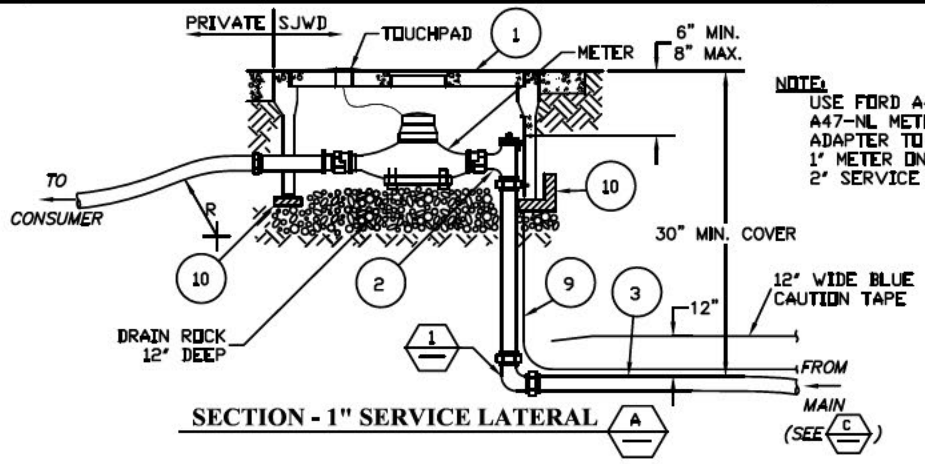
SCALE: NTS | PRINT DATE: 09/23/14 | DETAIL NO: SHT 4 OF 27

SERVICE MATERIALS DESCRIPTION AND PARTS/MODEL NUMBERS

		1" SERVICE	1-1/2" SERVICE	2" SERVICE
1	METER BOX (REF. NOTE 12)	B-16 BOX W/B-16GP LID AND PW/TRPL PLUG	B-36 BOX W/N36RP LID FOR NON-TRAFFIC AREAS, OR G-45GP LID AND PW/TRPL PLUG FOR TRAFFIC AREAS	B-36 BOX W/N36RP LID FOR NON-TRAFFIC AREAS, OR G-70GP LID AND PW/TRPL PLUG FOR TRAFFIC AREAS
2	ANGLE METER VALVE	FORD BA63-444W-NL	FORD BFA43-666W-NL	FORD BFA43-777W-NL
3	SERVICE LINE	1" POLYETHYLENE TUBE, IPS	1-1/2" POLYETHYLENE TUBE, CTS	2" POLYETHYLENE TUBE, CTS
4	CORP. STOP	FB1101-4-NL (USE FB900 W/ 45 DEG.)	FB1100-6-NL (USE FB900 W/ 45 DEG.)	FB1100-7-NL (USE FG900 W/ 45 DEG.)
5	45 DEG. ELBOW	FORD LA14-54-NL	FORD LA14-76-NL	FORD LA14-87-NL
6	90 DEG. ELBOW (REQUIRED)	FORD L66-44-NL	FORD L44-66-NL	FORD L44-77-NL
7	INSERT STIFFENERS	FORD 53-72	FORD 54	FORD 55
8	SERVICE SADDLE (FOR ALL SIZES)	DIP, ACP, & STL - JONES 979 C-900 PVC - JONES 996	DIP, ACP, & STL - JONES 979 C-900 PVC - JONES 996	DIP, ACP, & STL - JONES 979 C-900 PVC - JONES 996
9	LOCATING WIRE	10 GA COPPER (INSULATED)	10 GA COPPER (INSULATED)	10 GA COPPER (INSULATED)
10	CONC. OR BRICK BLOCKING	2" X 4"	2" X 4"	2" X 4"

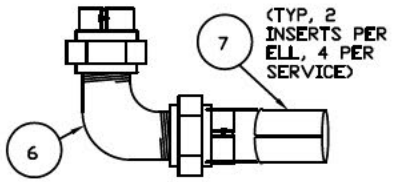
NOTES:

1. THE MANUFACTURER AND MODEL NUMBER LISTED IN THE SCHEDULE OF MATERIALS IS FOR CONVENIENCE IN DESIGNATION, SUBSTITUTION MAY BE MADE WITH THE PRIOR APPROVAL OF THE DISTRICT.
2. FOR CONNECTION TO MAIN SEE DISTRIBUTION MAIN SERVICE CONNECTIONS - 1" THROUGH 2" DETAIL, SHEET 7.
3. SET METER BOX PERPENDICULAR TO STREET AND ELEVATION FLUSH WITH LOT FINISH GRADE. LOCATE BOX 1 FOOT FROM BACK OF SIDEWALK. SEE RECOMMENDED PLACEMENT PLAN FIGURE (1), GRADE AREA TO DRAIN AWAY FROM BOX.
4. USE INSERT STIFFENER, ITEM 6 IN SCHEDULE OF MATERIALS, FOR EACH PACK JOINT.
5. SADDLES TO BE INSTALLED MIN. 18" FROM PIPE COUPLING OR ADJACENT SADDLES.
6. PIPE TRENCHING DETAILS SEE SHEET 11 (SAND BACK FILL MATERIAL IS REQUIRED).
7. MINIMUM RADIUS (R) OF PIPE/LINE TO BE 2X PIPE MANUFACTURER'S RECOMMENDATIONS.
8. ALL COMMERCIAL SERVICES TO BE PLACED IN PLANTER AREAS. LANDSCAPING SHALL NOT BLOCK EASY VISIBILITY OR ACCESS TO METER BOX. LANDSCAPING (SHRUBS) SHALL NOT BE PLACED CLOSER THAN 3-FT FROM METER BOX; TREES NO CLOSER THAN 10-FT TO BOX.
9. 90° ELBOW (MATERIAL ITEM 5) SHALL BE WRAPPED TIGHTLY WITH 3-MIL TAPE.
10. COMMERCIAL SERVICES SHALL HAVE ADDRESS ON LID WITH 4-IN TALL WHITE THERMAL LETTERING OR ENGRAVED METAL TAG
11. SEE SHEETS 18, 19, AND 20 FOR ADDITIONAL INFORMATION ON SETTING METER BOX, INSTALLING METER AND TONING WIRE.
12. TRAFFIC OR HEAVY LOAD (H/20) RATED BOXES AND/OR LIDS MAY BE REQUIRED FOR SOME LOCATIONS (WHEN DIRECTED FOR BY DISTRICT).

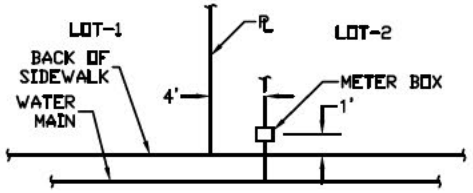


NOTE: USE FORD A46-NL OR A47-NL METER ADAPTER TO INSTALL 1" METER ON 1-1/2 OR 2" SERVICE LINES.

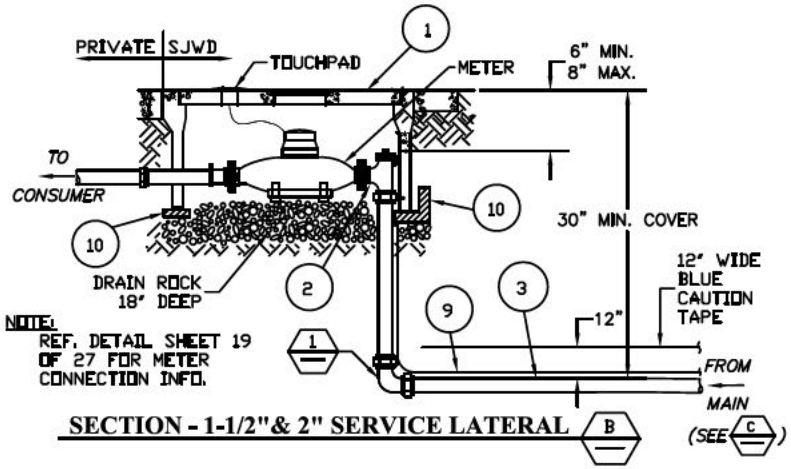
SECTION - 1" SERVICE LATERAL (A)



DETAIL - 90 DEG. ELBOW (1)

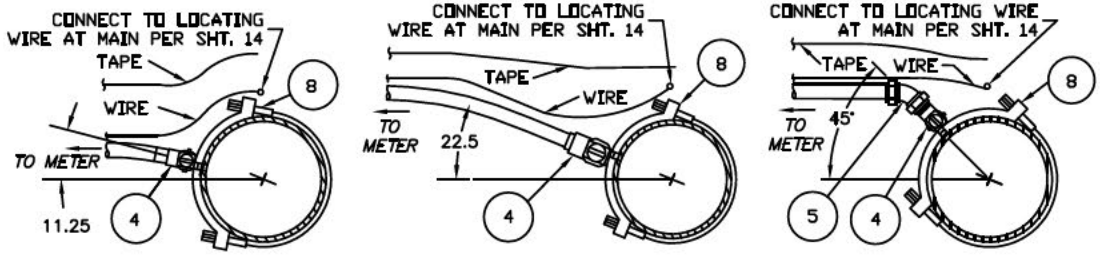


PLAN VIEW - RECOMMENDED SERVICE PLACEMENT (D)



NOTE: REF. DETAIL SHEET 19 OF 27 FOR METER CONNECTION INFO.

SECTION - 1-1/2"& 2" SERVICE LATERAL (B)



11.25 DEG. SERVICE CONN. 22.5 DEG. SERVICE CONN. 45 DEG. SERVICE CONN.

NOTE - SERVICE CONNECTION TAP ANGLE TO BE CONFIRMED WITH SJWD PRIOR TO INSTALLATION

SECTION - SERVICE CONN. TAP INSTALLATIONS AT MAIN (C)

NO	DATE	REVISIONS	APP	BY

SINCE 1854
SJWD ENGINEERING DEPT

1", 1-1/2" & 2" SINGLE SERVICE LATERAL ASSEMBLY

SAN JUAN WATER DISTRICT

APPROVED

SCALE: NTS | PRINT DATE: 08/29/13 | DETAIL NO: SHT 6 OF 27

MAXIMUM DIRECT TAP SIZING TABLE (IN)					
PIPE DIA. (IN)	DIP PRESSURE CLASS				
	150	200	250	300	350
6					3/4
8					1
10					1
12					1
14			1	1	1-1/4
16			1-1/4	1-1/4	1-1/4
18			1-1/4	1-1/4	1-1/2
20			1-1/2	1-1/2	1-1/2
24		1-1/2	1-1/2	1-1/2	1-1/2

DIRECT TAP NOTES:

A. DIRECT TAPS ONLY ALLOWED UNDER SPECIAL CONDITIONS WITH SJWD PRE-APPROVAL (SEE NOTE 10).

B. INSTALL DOUBLE STRAP SERVICE TAP SADDLE ON ALL 2-IN AND LARGER SERVICES.

C. 1" TAP, WHEN APPROVED, ONLY ALLOWED ON THICKNESS CLASS 53 (MIN.) 6-IN DIP.

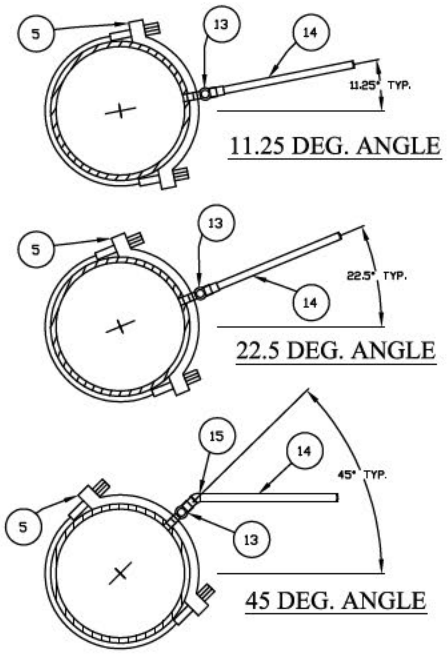
D. 1-1/2" TAP, WHEN APPROVED, ONLY ALLOWED ON THICKNESS CLASS 56 (MIN.) 6-IN DIP.

E. INSTALL DIRECT TAPS, WHEN ALLOWED, PER AWWA C800 AND C151 AND AS MODIFIED HEREIN.

SERVICE INSTALLATION NOTES:

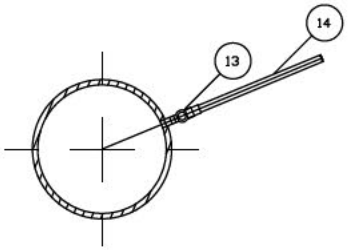
1. DETAILS 3, 4 & 6; BRASS SERVICE CLAMPS. BRASS ALLOY 85-5-5-5 AS PER ASTM B-62 & AWWA C800.
2. OUTLETS SAME SIZE AS SERVICE LINE, TYP.
3. DETAIL 6. REPLACE MORTAR COATING ON MAIN AND COAT ENTIRE COUPLING TO CORP STOP BASE. DO NOT COAT CORP STOP.
4. DETAIL 6. INSERT TEMPORARY SCREW PLUG IN COUPLING PRIOR TO WELDING.
5. INSTALL SERVICE CONNECTION (CORPORATION STOP) IN ACCORDANCE WITH FIGURE AND MATERIAL USED IN MATERIALS TABLE ON THIS SHEET AND PER MANUFACTURER'S RECOMMENDATIONS.
6. THE MANUFACTURER AND STOCK NUMBER LISTED IN THE MATERIAL LIST ARE FOR CONVENIENCE IN DESIGNATION. SUBSTITUTION MAY BE MADE WITH THE APPROVAL OF THE DISTRICT.
7. FOR 2" SERVICE CONNECTION AND MAIN SIZE 4" OR LESS AND FOR SERVICES LARGER THAN 2" INSTALL TEE.
8. INSTALL CORP STOPS WITH OPERATION NUT PARALLEL TO MAIN.
9. ADDITIONAL TYPES OF CONNECTION MAY BE APPROVED BY DISTRICT PROVIDED A DETAILED DRAWING IS SUBMITTED, INCLUDE TYPE AND MODEL NUMBERS OF MATERIAL ON DRAWING SUBMITTAL.
10. DIRECT TAPS ONLY ALLOWED ON DIP AND ONLY WITH PRIOR WRITTEN APPROVAL OF THE SJWD ENGINEERING MANAGER.
11. SERVICE TAP ANGLE SHALL BE PRE-APPROVED BY SJWD BEFORE TAPPING.

MATERIALS - LIST	
ITEM	DESCRIPTION
1	1" COUPLINGS
2	1 1/2" COUPLINGS
3	2" COUPLINGS
4	2 1/2" COUPLINGS
	SERVICE SADDLES
5	2 STRAP FOR D.I., A.C. PIPE, AND STEEL MAINS JAMES JONES J979 OR EQUIV.
6	SADDLE FOR PVC MAINS JAMES JONES J996 OR EQUIV.
	BRASS BUSHINGS (WHEN NEEDED)
7	1" x 2"
8	1" x 1-1/2
9	1-1/2" x 2"
10	2" x 2-1/2"
11	BRASS OR STAINLESS STEEL SADDLE BODY 5" +, WITH SJWD APPROVED INSERT
12	JOINT WRAPPER W/ CEMENT MORTAR
13	CORPORATION STOP SAME SIZE AS SERVICE LINE
14	SERVICE LINE 1" IPS 1-1/2"&2" CTS
15	45 DEG. ELBOW, SAME SIZE AS CORP. STOP

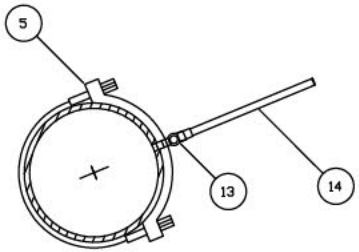


DETAIL - SERVICE TAP ANGLES (1)
(EXAMPLE USING SADDLE TAP)

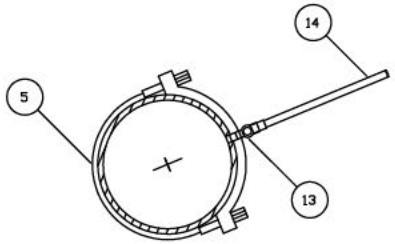
NOTE - IN ALL CASES THE SERVICE CONNECTION TAP ANGLE TO BE CONFIRMED WITH SJWD CONSTRUCTION INSPECTOR OR ENGINEER PRIOR TO INSTALLATION



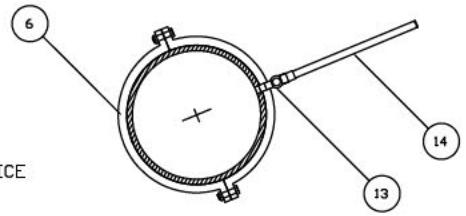
DUCTILE IRON MAINS (2)
(THREADED TAP - WHEN ALLOWED)



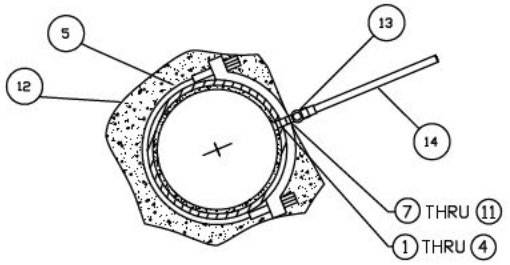
DUCTILE IRON MAINS (3)
(SADDLE TAP)



ASBESTOS CEMENT MAINS (4)



PVC MAINS (5)



CEMENT MORTAR COATED STEEL MAINS (6)

NO	DATE	REVISIONS	APP	BY

SINCE 1854
SJWD ENGINEERING DEPT

DISTRIBUTION MAIN SERVICE CONNECTIONS 1" THRU 2"

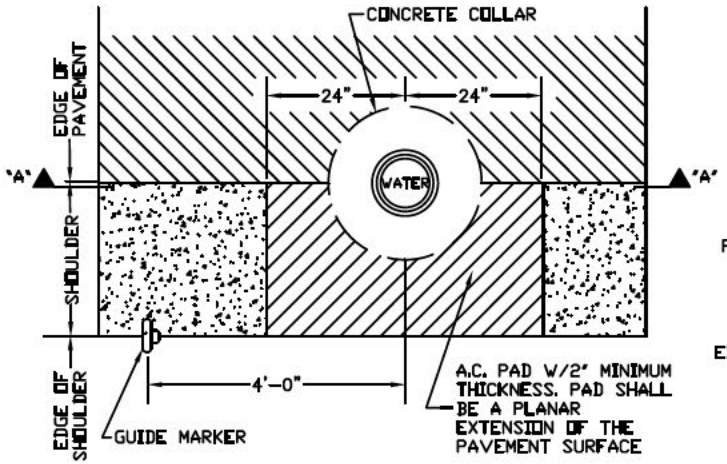
SAN JUAN WATER DISTRICT

APPROVED

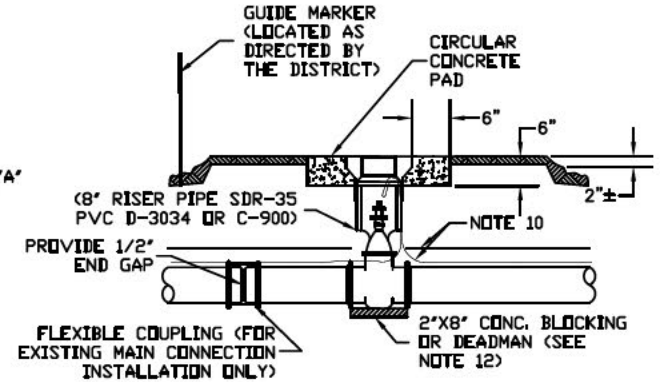
SCALE: NTS | PRINT DATE: 02/01/13 | DETAIL NO: SHT 7 OF 27

NOTES:

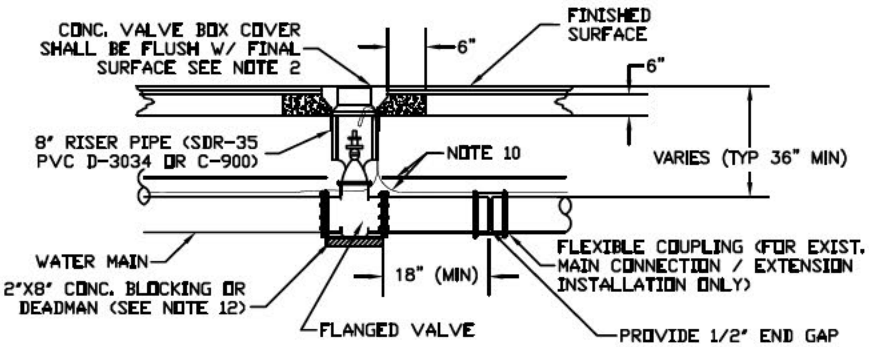
1. GUIDE MARKER SHALL CONFORM TO THE STANDARD GUIDE MARKER DETAIL (SEE SHEET 16).
2. VALVE BOXES SHALL BE TRAFFIC TYPE CHRISTY G5 OR APPROVED EQUIV. W/LID MARKED "WATER".
3. VALVE BOX RISER PIPE SHALL BE SET PLUMB AND CENTERED OVER NUT AND NOT TRANSFER ANY LOADS TO THE VALVE.
4. GATE VALVES SHALL CONFORM TO AWWA C500 OR C501 FOR VALVES 10" AND SMALLER.
5. BUTTERFLY VALVES SHALL CONFORM TO AWWA C504 FOR VALVES 12" AND LARGER.
6. THE BUTTERFLY VALVE OPERATING MECHANISM SHALL BE SET TO CURBSIDE, DISTANCE FURTHEST FROM ROADWAY CENTERLINE, UNLESS OTHERWISE DIRECTED BY SJWD REPRESENTATIVE.
7. ALL VALVES TO BE FLANGED (BOLTED) TO TEES AND CROSSES, UNLESS PRE-APPROVED BY SJWD ENGINEER (SUCH AS FOR IN-LINE LOCATIONS OR IN CURB RADIUS).
8. ALL PE BY PE JOINT FLEXIBLE COUPLINGS FOR DIP TO DIP AND C900 TO C900 USE MJ x MJ CAST OR DUCTILE IRON SLEEVE WITH EBAA IRON MEGALUG (OR APPROVED EQUIV.) ON BOTH SIDES. FOR DIP OR C900 TO A.C. PIPE USE ROMAC 501 WITH 12" LONG BARREL (OR APPROVED EQUIV.).
9. VALVES AND COUPLINGS SHALL BE POLY ENCASED PER AWWA C105.
10. PIPE ENDS SHALL BEAR UNIFORMLY AGAINST HUB END SEAT, LONGITUDINAL AXIS OF THE PIPE ON EACH SIDE OF VALVE SHALL BE PARALLEL AND CONCENTRIC.
11. PROVIDE TRACING WIRE AND BLUE LOCATION TAPE.
12. PROVIDE VALVE STEM EXTENSION IF DEPTH TO VALVE NUT EXCEEDS 48 INCHES. TOP OF EXTENSION TO BE 12-IN TO 24-IN FROM FINISHED GRADE.
13. DEADMAN BLOCK MAY BE REQUIRED BY DISTRICT (PER SHEET 13 OF 27).
14. PROVIDE BOND JUMPERS AND CATHODIC PROTECTION COMPONENTS PER SPECIFIC PROJECT SPECIFICATIONS OR PER DISTRICT REQUIREMENTS.



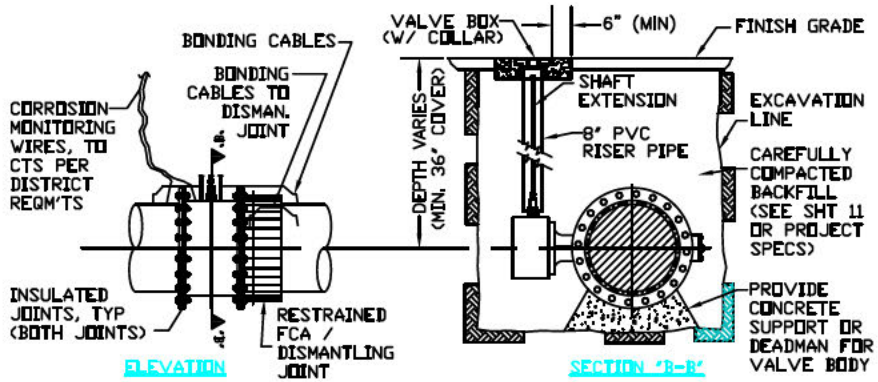
VALVE BOX PAD IN PLAIN SHOULDER
PLAN VIEW



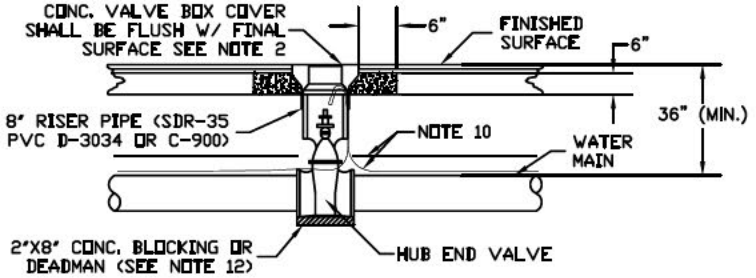
SECTION "A" - "A" VALVE ASSEMBLY
OUTSIDE TRAVELED AREA



SECTION - FLANGED VALVE ASSEMBLY



BUTTERFLY VALVE ASSEMBLY (BURIED)



SECTION - HUB END VALVE ASSEMBLY

NO	DATE	REVISIONS	APP	BY

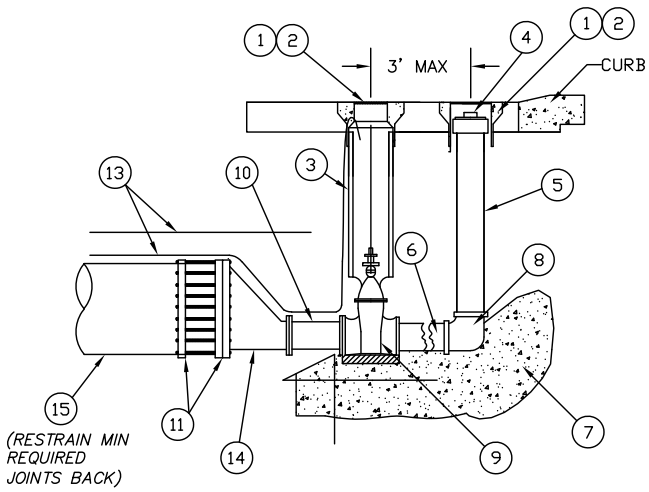
MAIN VALVE ASSEMBLY

SAN JUAN WATER DISTRICT

APPROVED

SCALE:	PRINT DATE:	DETAIL NO:
NTS	07/24/07	SHT 8 OF 27

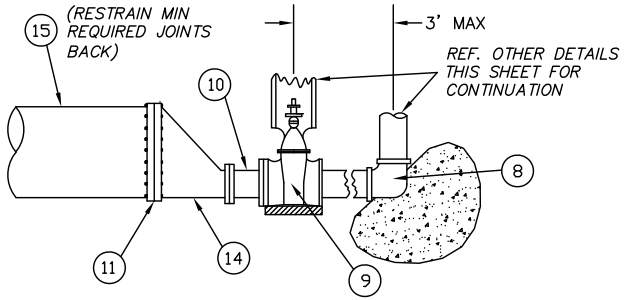
MATERIALS – LIST	
ITEM	DESCRIPTION
1	CONCRETE VALVE BOX W/C.I. TRAFFIC RATED LID MARKED "WATER" CHRISTY G-5, BROOKS 2-RT OR APPROVED EQUIV.
2	6" CONCRETE COLLAR UNDER PAVEMENT, 4" THICK
3	8" RISER PIPE (SDR-35 OR C-900)
4	DUCTILE IRON COMPANION FLANGE AND THREADED PLUG W/ SQUARE NUT
5	4" OR 6" DUCTILE IRON PIPE RISER -PE X FLG
6	DUCTILE IRON PIPE (DIP)
7	CONCRETE THRUST BLOCK (PER SHEETS 12 & 13 OF 27)
8	4" OR 6" DIP 90° ELL FLG x FLG OR MJ RESTRAINED
9	4" OR 6" GATE VALVE FLG x MJ OR FLG x FLG
10	DUCTILE IRON SPOOL PIECE, 2-3 LF AS REQUIRED TO INSTALL THRUST BLOCKING (SEE SHT. 12 "REDUCER" BLOCK)
11	RESTRAINED FCA, OR FLG PIPE END, OR RESTRAINED MJ
12	WELDED FLANGE
13	LOCATOR TAPE AND TRACER WIRE
14	MJ x FLG OR FLG x FLG RESTRAINED REDUCER (CONCENTRIC PREFERRED, ECCENTRIC OPTIONAL WITH DISTRICT APPROVAL)
15	WATER MAIN



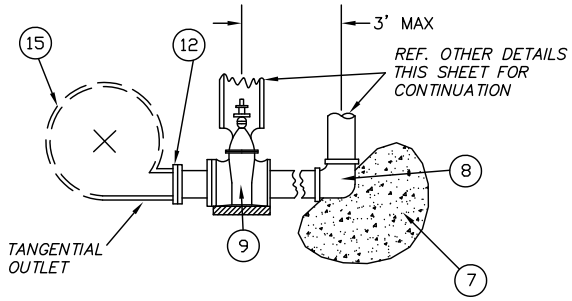
DUCTILE IRON & PVC MAINS
TYPE "A"
(LONGITUDINAL INSTALLATION)

NOTES:

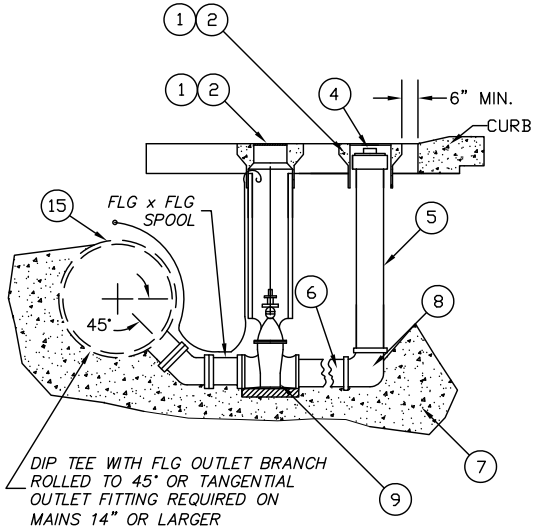
1. UNLESS OTHERWISE DIRECTED BY SJWD. 4" BLOWOFF ASSEMBLY TO BE USED ON 6" THROUGH 10" MAINS. 6" BLOWOFF ASSEMBLY TO BE USED ON 12" AND LARGER MAINS.
2. ALL PIPING MATERIALS SHALL BE DUCTILE IRON UNLESS OTHERWISE APPROVED BY THE DISTRICT OR NOTED HERE IN. ALL MATERIALS SHALL BE RESTRAINED AND THRUST BLOCKED. FASTENERS SHALL BE TRI-PAC.
3. PLACE BLOWOFF ASSEMBLY CURBSIDE, NOT IN CURB SECTION OR IN GUTTER.
4. IF WATER MAIN AND FITTINGS ARE NOT COATED PAINT RODS, COLLARS, LUGS AND OTHER BARE STEEL WITH PROTECTO WRAP NO CA1200 MASTIC OR POLYGUARD CA 14 OR APPROVED EQUIVALENT.
5. IF WATER MAIN OR FITTINGS ARE COATED, BLOWOFF ASSEMBLY SHALL ALSO BE COATED WITH THE SAME MATERIAL OR OTHER APPROVED MATERIAL
6. ALL DIP PIPING MATERIALS SHALL BE POLYWRAPPED.
7. FOR LATERAL CONNECTIONS TO MAIN LINES GREATER THAN 12" PLACE FLUSHING RISER 5' BACK OF CURB.
8. VERIFY AND INSTALL RESTRAINED JOINT LENGTH REQUIRED FOR UPSTREAM PIPE JOINTS NEEDING MECHANICAL RESTRAINT.
9. LONGITUDINAL INSTALLATIONS FOR AC PIPE SHALL ONLY BE PER DISTRICT DIRECTION.
10. TYPE "B" ROLLED OR TANGENTIAL OUTLET MAY BE REQUIRED BY DISTRICT IN SOME CASES FOR MAINS LESS THAN 14" DIA.



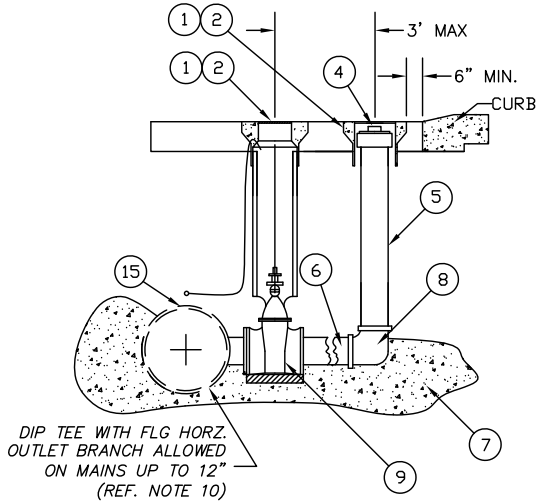
STEEL MAINS TYPE "A"
(LONGITUDINAL / END PIPE INSTALLATION)



STEEL MAINS TYPE "B"
(LATERAL INSTALLATION)



DUCTILE IRON, ASBESTOS CEMENT & PVC MAINS
TYPE "B" 14-IN DIA. OR GREATER
(LATERAL INSTALLATION)



DUCTILE IRON, ASBESTOS CEMENT & PVC MAINS
TYPE "B" 12-IN DIA. OR SMALLER
(LATERAL INSTALLATION)

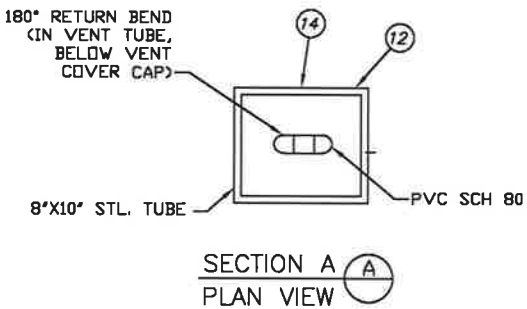
NO	DATE	REVISIONS	APP	BY
1	09/22/23	UPDATED DETAIL	MH	SE

4" & 6" BLOW OFF ASSEMBLY

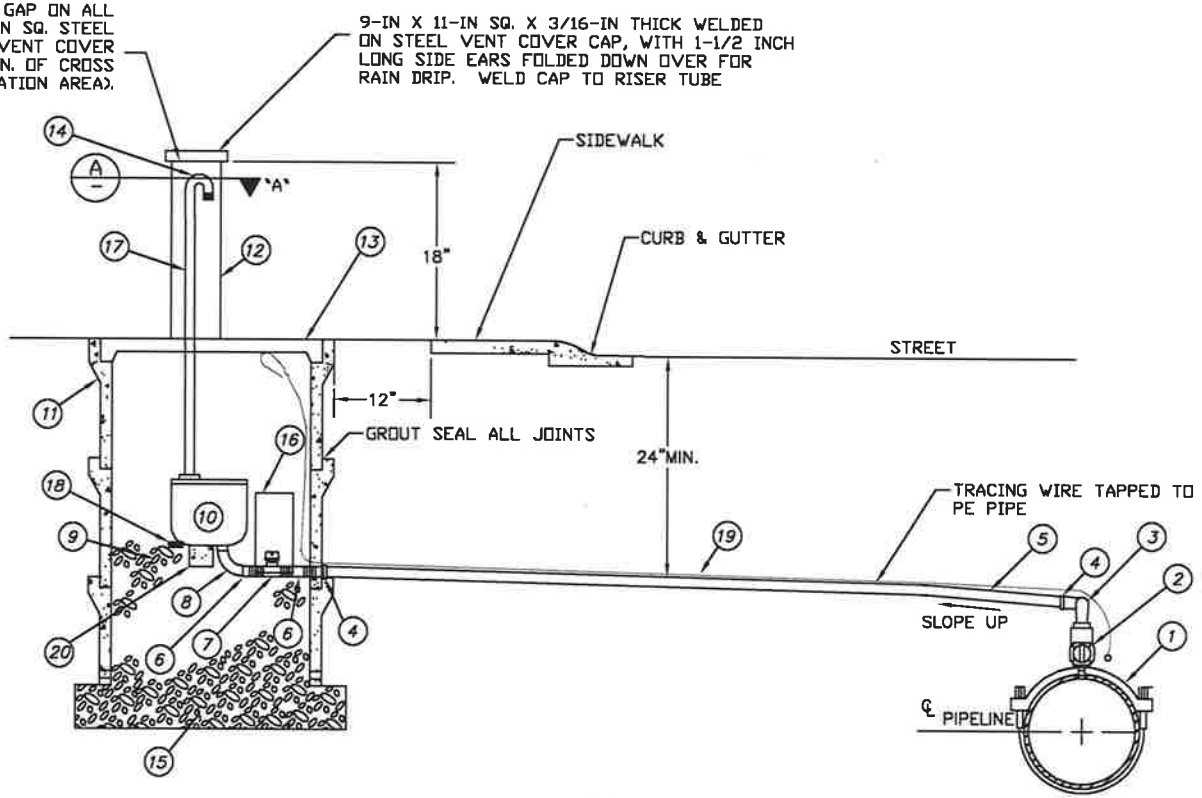
SAN JUAN WATER DISTRICT

APPROVED

SCALE:	PRINT DATE:	DETAIL NO:
NTS	09/22/2023	SHT 9 OF 27



SECTION A (A)
PLAN VIEW



SECTION

MATERIALS – LIST	
ITEM	DESCRIPTION
1	BRONZE SADDLE PER DETAIL SHEET 6
2	CORPORATION STOP PER DETAIL SHEET 6
3	TWO 90° BRASS ELBOWS TO PROVIDE POSITIVE SLOPE
4	BRASS ADAPTER, MIP x POLYETHYLENE
5	POLYETHYLENE PIPE (1" IPS) (2" CTS)
6	BRASS NIPPLE
7	BRASS BALL VALVE OR BALL CURB STOP – W/AWWA C500 NUT
8	90° BRASS ELBOW
9	3/4" CRUSHED ROCK, FILL TO BOTTOM OF VALVE
10	COMBINATION AIR VACUUM VALVE – APCO, CRISPIN, OR EQUAL
11	CHRISTY B40 ENCLOSURE
12	8"X10"X3/16" WALL STEEL TUBE 18" LONG. JTS MANUFACTURING MODEL AVC10-N OR APPROVED EQUAL. POWDER COATED. SEE NOTE 3
13	AIR VALVE BOX COVER-STEEL CHECKERED PLATE TO FIT. JTS MANUFACTURER, MODEL 440-ARV OR APPROVED EQUAL. POWDER COATED. SEE NOTE 3
14	180° SCH. 80 PVC RETURN WITH STAINLESS MESH SCREEN ATTACHED TO OUTLET. FOR 1" END VENT W/ MESH SCREEN 4" BELOW VENT CAP, FOR 2" END VENT W/ MESH SCREEN 6" BELOW VENT CAP.
15	3/4" CRUSHED ROCK TO 6" DEPTH (MIN.)
16	6" PVC SLEEVE (CENTERED OVER VALVE HANDLE)
17	SCHEDULE 80 PVC PIPE (SOLVENT WELDED)
18	BRASS BALL VALVE AND BRASS NIPPLE AND/OR BRASS 90° ELBOW. SEE NOTE 7
19	LOCATING WIRE TAPED TO TOP OF PIPE
20	CONC. OR BRICK SUPPORT BLOCK

CONSTRUCTION NOTES:

1. SIZE OF PIPING SHALL MATCH SIZE OF AIR VALVE.
2. AIR VALVE VENT SHALL BE PLACED OUTSIDE OF TRAFFIC AREAS AND WITH-IN EASEMENT AND/OR RIGHT OF WAY.
3. AVRV STEEL TUBE AND BOX COVER PLATE TO BE PREPPED, CLEANED AND POWDER COATED (FOREST GREEN) TO A DRY THICKNESS OF 3 MIL. (MIN.) BY MANUFACTURER
4. PLACE LOCATING TAPE 6' ABOVE THE TOP OF BURIED ARV PIPE.
5. PLACE AWG 10 GUAGE, INSULATED COPPER TRACING WIRE FROM MAIN TO RISER IN BOX.
6. BOLLARDS MAY BE REQUIRED IN CRITICAL TRAFFIC AREAS PER FIELD DIRECTION OF DISTRICT OR PROJECT PLANS.
7. INSTALL BRASS NIPPLE AND/OR BRASS 90 ELOBOW IN AIR RELEASE VALVE DRAIN AS REQUIRED FOR BALL VALVE TO BE IN HORIZONTAL POSITION.
8. AVRV TO BE LOCATED AT HIGH POINT OF MAIN OR AS INDICATED ON PLANS OR PER DISTRICT DIRECTION.
9. CORP STOP OR SADDLE TO BE LOCATED AT LEAST 2-FT FROM END OF MAIN, JOINT OR OTHER FITTINGS.
10. PIPING TO BE INSTALLED TO MAINTAIN A POSITIVE GRADE UPWARD FROM MAIN TO AVRV AND VENT.
11. TIGHTLY WRAP BURIED FITTINGS WITH 3-MIL POLY TAPE AFTER INSPECTION, PRIOR TO BACKFILL.

NO	DATE	REVISIONS	APP	BY
2	3/24	DETAIL UPDATE	MH	SE
1	3/14	BOX & LID POSITIONS	RW	SE

SAN JUAN WATER
ENGINEERING DEPT

1" & 2" AIR VACUUM RELEASE VALVE

SAN JUAN WATER DISTRICT

APPROVED

SCALE: NTS | PRINT DATE: 03/22/2024 | DETAIL NO: SHT 10 OF 27

TRENCH BACKFILL COMPACTION SCHEDULE

DESCRIPTION		INSIDE COUNTY RIGHT-OF-WAY			OUTSIDE COUNTY RIGHT-OF-WAY (MIN. VALUES)	
		UNDER PAVING	SHOULDER	OUTSIDE IMPROVED SECTION		
WATER MAIN	P.Z.	90% (MIN)	90% (MIN)	90% (MIN)	PIPE ZONE	90%
	T.Z.	PER COUNTY HAVING JURISDICTION			ABOVE PIPE ZONE	85%
SERVICE LINE	P.Z.	90% (MIN)	90% (MIN)	90% (MIN)	PIPE ZONE	90%
	T.Z.	PER COUNTY HAVING JURISDICTION			ABOVE PIPE ZONE	85%
HYDRANT LATERAL	P.Z.	90% (MIN)	90% (MIN)	90% (MIN)	PIPE ZONE	90%
	T.Z.	PER COUNTY HAVING JURISDICTION			ABOVE PIPE ZONE	85%

SEE NOTE #6 THIS SHEET.
P.Z. – PIPE ZONE. BOTTOM OF TRENCH TO 12" ABOVE PIPE. (PIPE ZONE) – P.Z.
T.Z. – ABOVE PIPE ZONE TO GROUND LEVEL. (TRENCH ZONE) – T.Z.
NOTE: ALL PERCENTAGES BASED ON TEST METHOD ASTM 1557

BACKFILL CLASSIFICATION

CLASS 1 MATERIAL	SAND, FREE FROM ORGANIC OR OTHER DELETERIOUS MATERIALS, HAVING A SAND EQUIVALENT NOT LESS THAN 30 & A PERCENTAGE COMPOSITION, BY WEIGHT CONFORMING TO THE FOLLOWING GRADING: SIEVE SIZES — PERCENTAGE PASSING (BY WEIGHT) 1/2" — 100 NO. 4 — 75–100 NO. 50 — 0–70 NO. 100 — 0–30 NO. 200 — 0–15 WITH ALL GRAINS AS RETAINED ON NO. 4 SIEVE HAVING A ROUNDED GRAIN SHAPE AS DEFINED BY ASTM D-2488, A DURABILITY INDEX MINIMUM OF 35, A PH BETWEEN 5.0 TO 8.0, AND A RESISTIVITY R EQUAL TO OR GREATER THAN 5,000 OHMS-CM.
CLASS 2 MATERIAL	APPROVED SELECT EXCAVATED EARTH, FREE FROM STONES OR LUMPS EXCEEDING 2" INCHES GREATEST DIMENSION, VEGETABLE MATTER, OR OTHER DELETERIOUS MATERIAL, OR IMPORTED NON-EXPANSIVE SOIL WITH LIQUID LIMIT NO GREATER THAN 40 PERCENT AND A PLASTICITY INDEX NO GREATER THAN 12 PERCENT, FREE FROM CLODS OR ROCKS LARGER THEN 2" INCHES IN GREATEST DIMENSION, AND FREE FROM ORGANIC MATERIAL AND DEBRIS. (NOTE – COUNTY OR CITY REQUIREMENTS MAY TAKE PRECEDENCE IN THIS ZONE.)

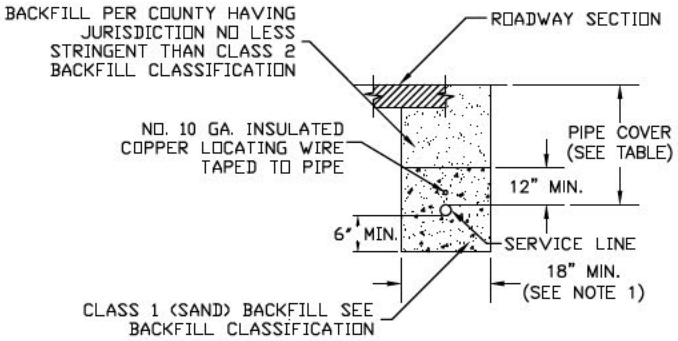
PIPE COVER, 'C' SCHEDULE

	INSIDE ROADWAY		OUTSIDE ROADWAY	
WATER MAIN	36"	48"	36"	48"
SERVICE LINE	36"	48"	30"	36"
HYDRANT LATERAL	36"	48"	36"	48"
	TYP.	MAX.	TYP.	MAX.

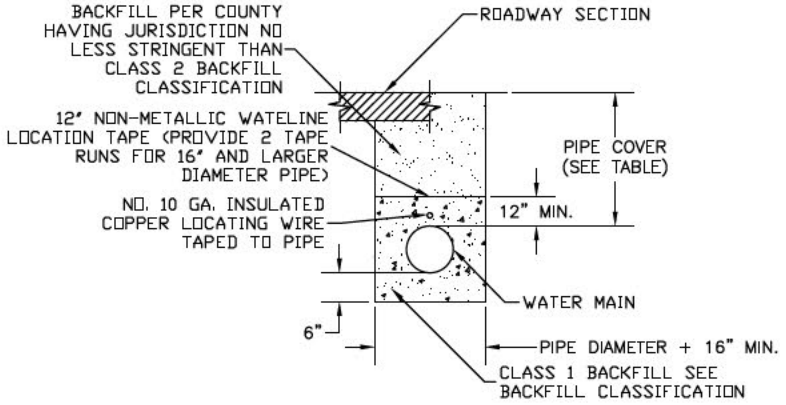
NOTE: SPECIFIC DISTRICT APPROVED LOCATIONS MAY BE ALLOWED WITH A MINIMUM 30-IN COVER OR MAY REQUIRE A MAXIMUM EQUAL TO OR GREATER THAN 48-IN.

NOTES:

1. TRENCH WIDTHS LESS THAN 18" MAY BE APPROVED BY THE DISTRICT ON AN INDIVIDUAL BASIS, WITH PRIME CONSIDERATION GIVEN TO SOIL CONDITIONS AND PROPOSED CONSTRUCTION METHODS.
2. NON-METALLIC MAINLINE PIPES, WHEN ALLOWED, SHALL BE C-900 PVC.
3. WHEN USING BELL AND SPIGOT PIPE, BELL HOLES SHALL BE EXCAVATED IN THE TRENCH BOTTOM SO THAT THE JOINT OF PIPE SHALL BE FULLY SUPPORTED ALONG ITS ENTIRE LENGTH.
4. FINISH TRENCH TO SURFACE OF ROADWAY OR FINISHED GRADE IF OUTSIDE ROADWAY.
5. IN ROCK, HARDPAN, SHALE, OR OTHER UNSUITABLE GROUND, EXCAVATE 6" MIN. BELOW AND ON EACH SIDE OF PIPELINE AND REPLACE WITH CLASS #1 BACKFILL.
6. ROADWAY IS DEFINED AS THAT AREA BETWEEN RIGHT-OF-WAY LINES IN COUNTY OR CITY ROADS AND BETWEEN EASEMENT LINES ON PRIVATE ROADS.
7. WHEN COUNTY OR CITY CONSTRUCTION STANDARDS REQUIREMENTS ARE MORE RESTRICTIVE, THEY WILL TAKE PRECEDENCE.
8. PIPE SHALL BE LAID TO MANUFACTURER'S SPECIFICATIONS.
9. HYDROTESTING SHALL BE DONE AT SUBGRADE.
10. LOCATING TAPE SHALL BE USED IN ADDITION TO WIRE. PLACE TAPE ABOVE PIPE ZONE.
11. ALL WATER MAINS DEPTHS > OR = TO 5-FT DEEP SHALL BE CL-350 D.I.P. W/POLY WRAP.



ALL SERVICE TYPES



ALL PIPE TYPES

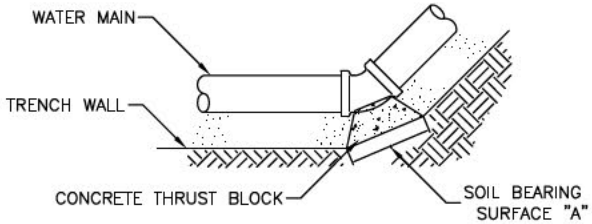
NO	DATE	REVISIONS	APP	BY

PIPELINE TRENCH SECTIONS

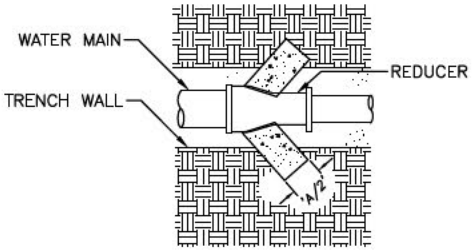
SAN JUAN WATER DISTRICT

APPROVED

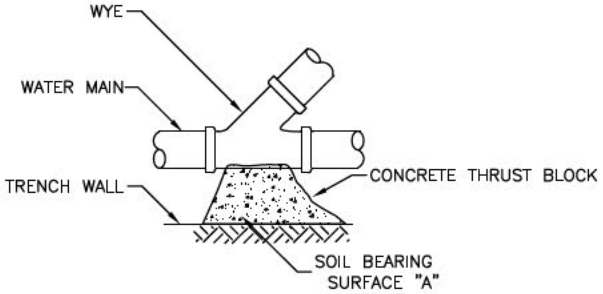
SCALE: NTS | PRINT DATE: 07/13/07 | DETAIL NO: SHT 11 OF 27



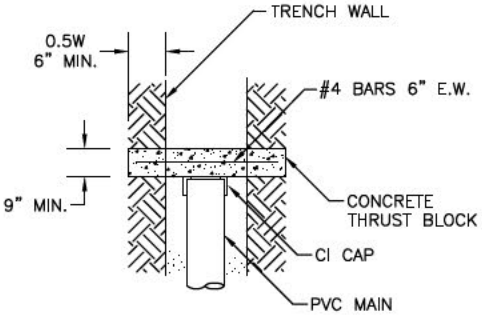
ELBOW (HORZ. BEND)
PLAN VIEW



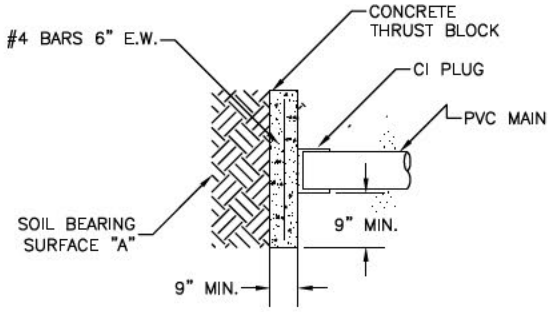
REDUCER
PLAN VIEW



WYE
PLAN VIEW



BLIND END ASSEMBLY
PLAN VIEW
CONTINUOUS TRENCH



BLIND END ASSEMBLY
ELEVATION VIEW
END OF TRENCH

NOTES:

1. CONCRETE: 5 SACK P.C.C. PER CUBIC YARD WITH 4" MAX SLUMP.
2. CONCRETE TO BE PLACED AGAINST UNDISTURBED SOIL.
3. CONCRETE SHALL NOT BE PLACED ON OR AROUND BELLS OR BOLTS.
4. 'D' DIMENSION INDICATES DEPTH OF CONCRETE.
5. 'W' DIMENSION INDICATES WIDTH OF CONCRETE. W = 2x 'D'

THRUST BLOCK SCHEDULE*

		REQ'D SOIL BEARING AREA 'A' (SQ. FT.)						
			ELBOW OR WYE					
PIPE SIZE	SOIL DESCR.	BLIND END, REDUCER, OR WYE	90° – 46°	45° – 23°	22° – 12°	11° – 6°	5° – 0°	CROSS
6"	10	1	2	1	1	1	1	1
	4	2	3	2	1	1	1	2
	2	5	7	4	2	1	1	5
	1	9	13	7	4	2	1	9
8"	10	2	2	1	1	1	1	2
	4	4	6	3	2	1	1	4
	2	8	11	6	3	2	1	8
	1	15	22	12	6	2	2	15
10"	10	3	4	1	1	1	1	3
	4	6	9	5	3	2	1	6
	2	13	18	10	5	3	2	13
	1	24	35	19	10	5	3	24
12"	10	4	5	3	2	1	1	4
	4	9	13	7	9	2	1	9
	2	18	25	14	7	4	2	18
	1	35	50	27	14	7	4	35
16"	10	5	6	3	2	1	1	5
	4	11	16	8	4	2	1	11
	2	22	32	16	8	4	2	22
	1	45	64	32	16	8	4	45

SOIL DESCRIPTION (X 1000 PSF = MAX SOIL BEARING)		
	10	HARD, SOUND SHALE & GRANITE
	4	SAND & GRAVEL, CEMENTED WITH CLAY – HARD TO PICK
	2	SAND & MEDIUM CLAY, CAN BE SPADED
	1	SOFT CLAY

*Based on 225 psi pressure

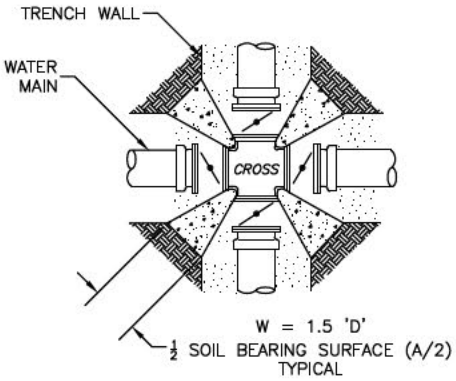
NO	DATE	REVISIONS	APP	BY

THRUST BLOCKS INSTALLATION

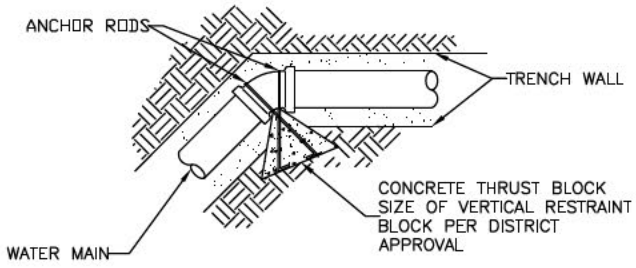
SAN JUAN WATER DISTRICT

APPROVED

SCALE: NTS | PRINT DATE: 04/17/07 | DETAIL NO: SHT 12 OF 27



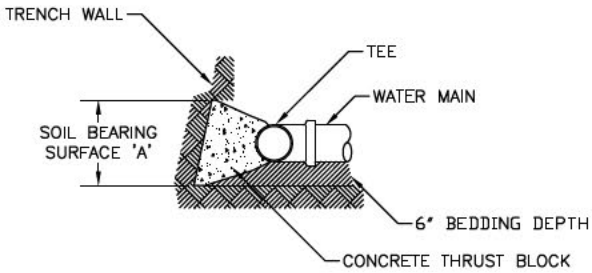
CROSS
PLAN VIEW



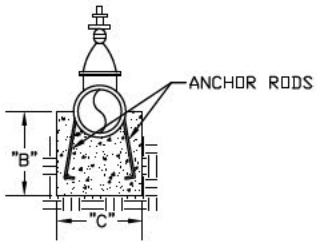
VERTICAL BEND
ELEVATION VIEW

NOTES:

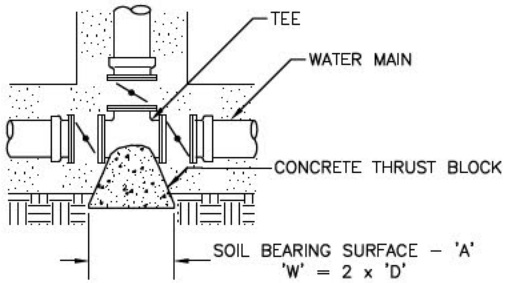
1. CONCRETE: 5 SACK P.C.C. PER CUBIC YARD WITH 4" MAX SLUMP.
2. CONCRETE TO BE PLACED AGAINST UNDISTURBED SOIL.
3. CONCRETE SHALL NOT BE PLACED ON OR AROUND BELLS OR BOLTS.
4. 'D' DIMENSION INDICATES DEPTH OF CONCRETE.
5. 'W' DIMENSION INDICATES WIDTH OF CONCRETE. W = 2x 'D'
6. SEE SHEET 12 FOR BEARING AREA REQUIRED 'A'.
7. ANCHOR RODS SHALL BE 1/2" (13MM) MIN. TIGHTLY WRAPPED AROUND PIPE OR FITTING. COAT EXPOSED ROD WITH BITUMASTIC COATING AFTER CONC. HAS SET.



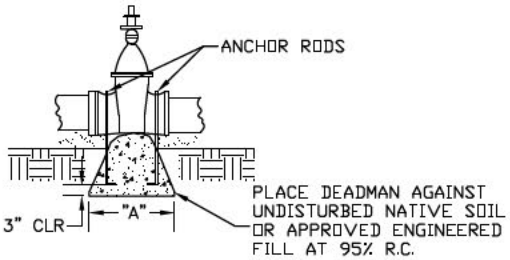
TEE
ELEVATION VIEW



VALVE DEADMAN (ANCHOR)
SECTION VIEW



TEE
PLAN VIEW



VALVE DEADMAN (ANCHOR)
ELEVATION VIEW

VALVE ANCHOR (DEADMAN) DIMENSIONS (IN)		
VALVE SIZE	DIMENSION	
	"A"	*"B"*
6" OR LESS	*12*	*12*
8	*13*	*14*
10	*14*	*16*
12	*14*	*18*
DIMENSION "C" SHALL BE TRENCH WIDTH PLUS 2x PIPE DIA.		

NO	DATE	REVISIONS	APP	BY

THRUST BLOCKS INSTALLATION

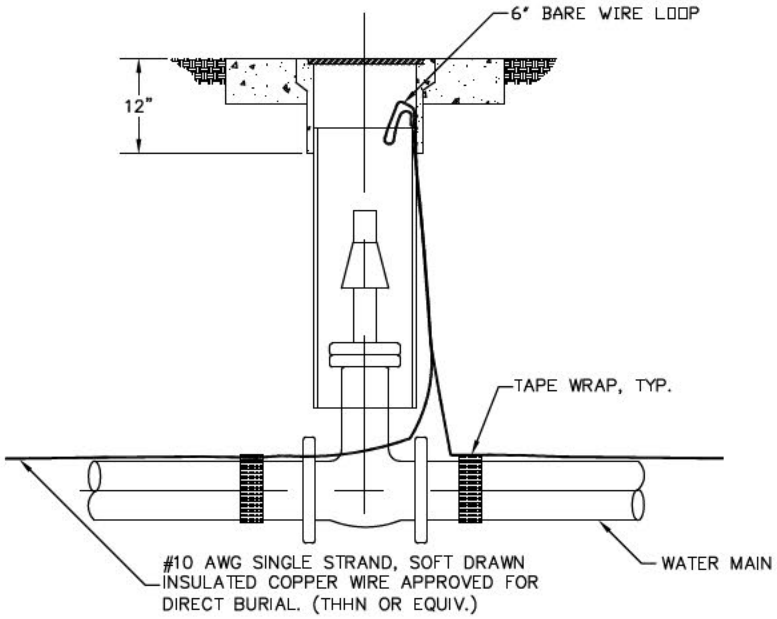
SAN JUAN WATER DISTRICT

APPROVED

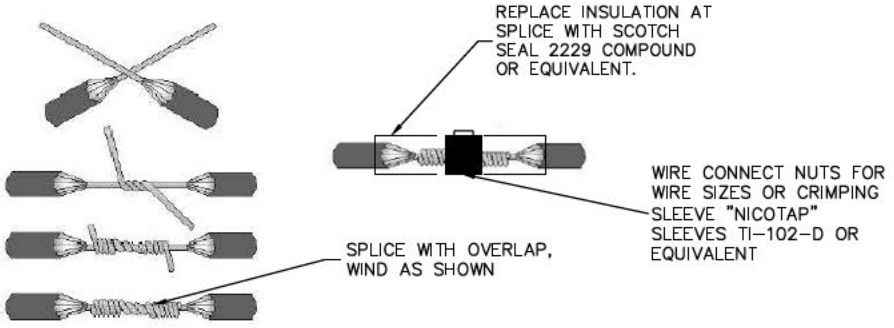
SCALE: NTS | PRINT DATE: 04/17/07 | DETAIL NO: SHT 13 OF 27

NOTES:

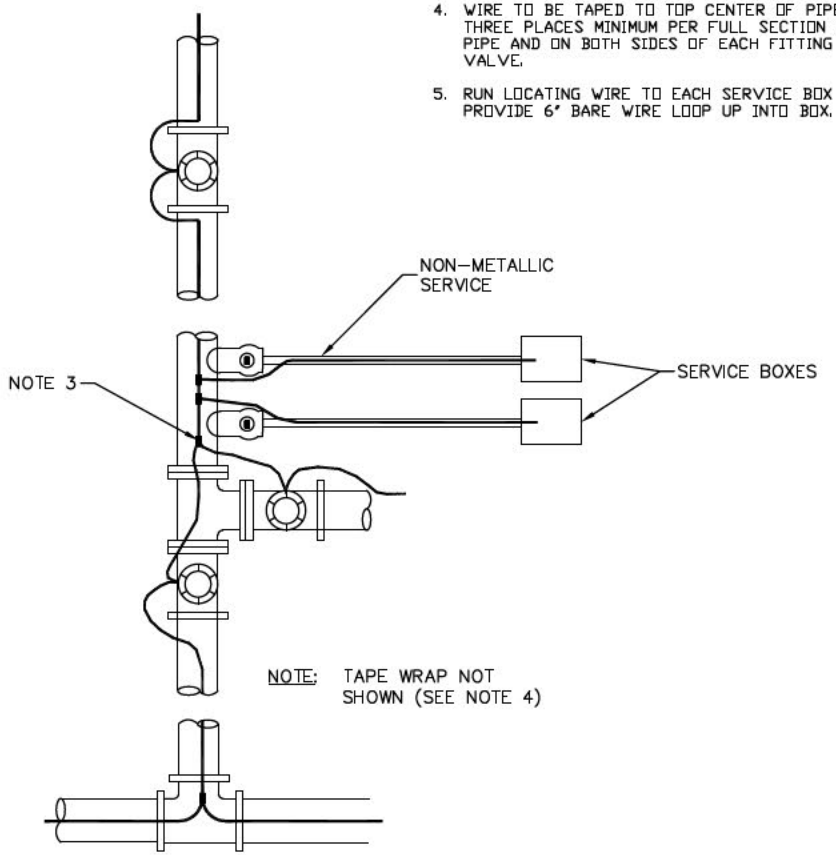
1. WIRE TO BE CONTINUOUS BETWEEN VALVE BOXES EXCEPT AS NOTED.
2. A 6" LOOP SHALL BE LOCATED IN ALL VALVE BOXES AND POSITIONED SO IT WILL NOT BE DISTURBED BY NORMAL VALVE OPERATION.
3. SPLICE WIRE AS PER DETAIL THIS SHEET.
4. WIRE TO BE TAPED TO TOP CENTER OF PIPE, THREE PLACES MINIMUM PER FULL SECTION OF PIPE AND ON BOTH SIDES OF EACH FITTING OR VALVE.
5. RUN LOCATING WIRE TO EACH SERVICE BOX AND PROVIDE 6" BARE WIRE LOOP UP INTO BOX.



VALVE DETAIL



SPLICE DETAIL



TYPICAL LAYOUT

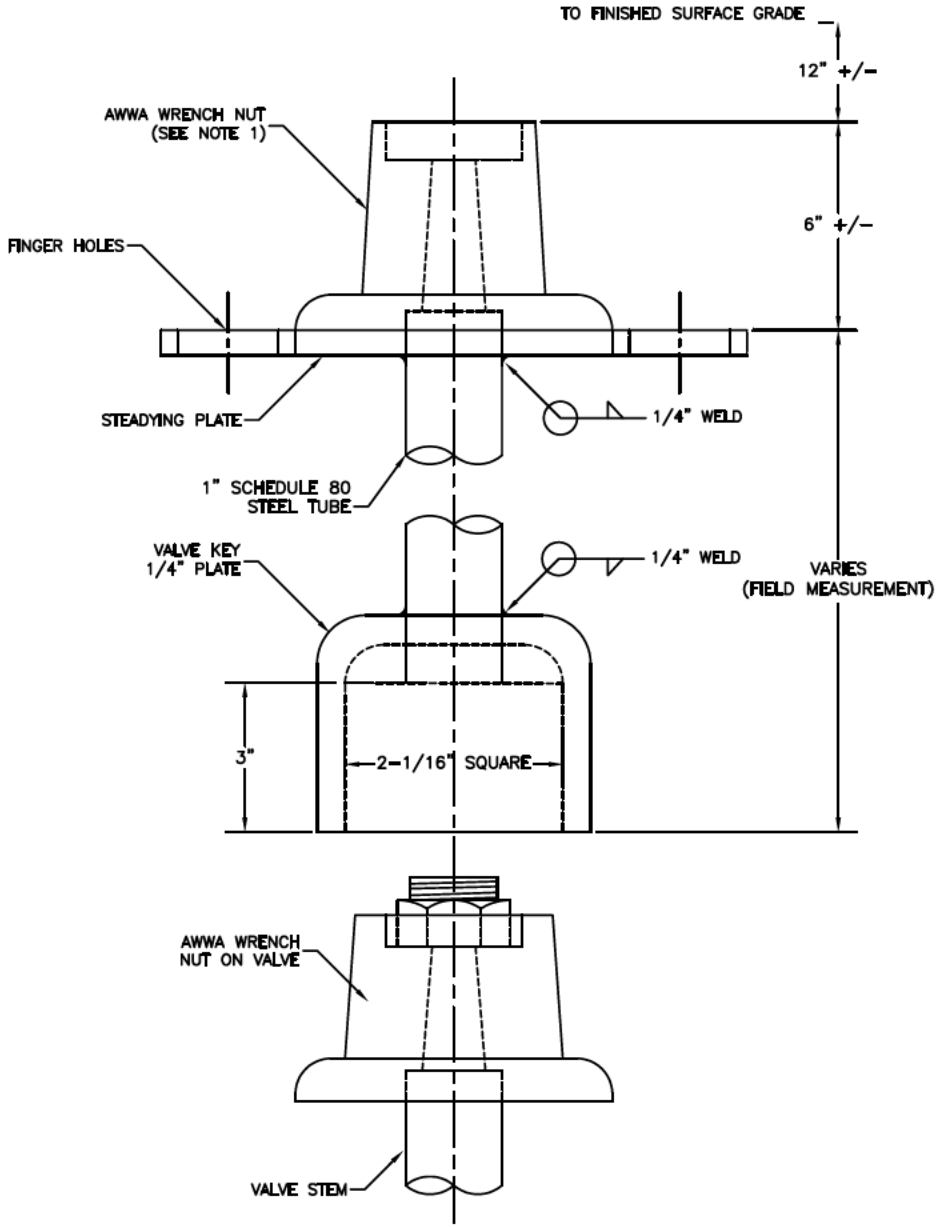
NO	DATE	REVISIONS	APP	BY

LOCATING WIRE FOR NON-METALLIC PIPE

SAN JUAN WATER DISTRICT

APPROVED

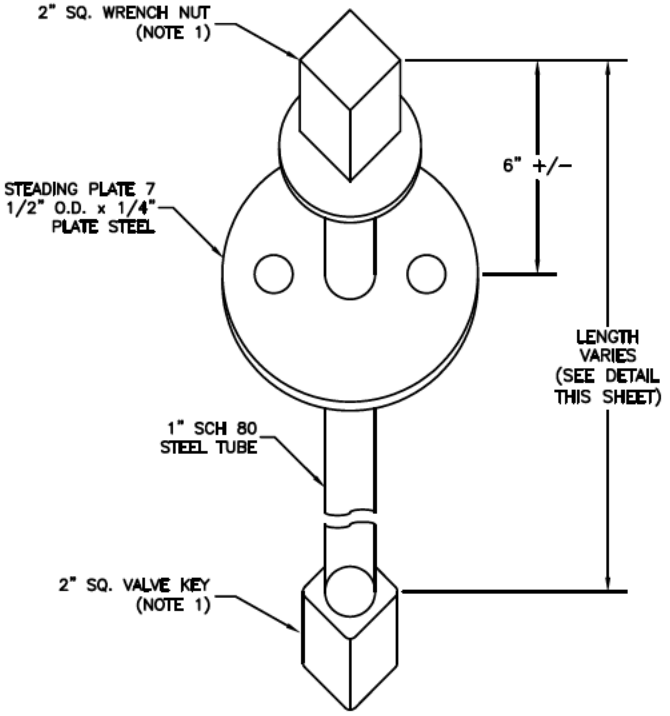
SCALE: NTS | PRINT DATE: 04/17/07 | DETAIL NO: SHT 14 OF 27



FABRICATION
DETAIL

NOTES:

1. WRENCH NUT, AND VALVE KEY, MEETING AWWA - C500.
2. CLEAN AND PREP METAL SURFACES AND COAT ENTIRE ASSEMBLY WITH FUSION EPOXY OR POWDER COAT COATING AFTER FABRICATION.
3. PEEN TOP OF SHAFT TO SECURE 2" AWWA WRENCH NUT TO SHAFT.
4. EXTENSION SHALL BE REQUIRED WHEN THE GATE VALVE OPERATING NUT IS 36" OR MORE BELOW THE FINAL GRADE SURFACE.
5. STEADYING PLATE SHALL BE 1/4" PLATE STEEL. DIAMETER EQUAL TO I.D. OF VALVE BOX EXTENSION MINUS 1/2", WITH TWO 1-1/2" DIAMETER FINGER HOLES PLACED 180-DEG OPPOSED.
6. APPLY SMALL AMOUNTS OF DSE SILICON TO VALVE KEY SQUARE PRIOR TO INSTALLATION ONTO VALVE NUT.
7. PLATE STEEL SHALL BE ASTM A36. TUBE STEEL SHALL BE ASTM A53 GRADE B. WELDING SHALL CONFORM TO AWS CODE FOR ARC AND GAS WELDING AND WELDER SHALL BE CERTIFIED.



VALVE OPERATING NUT EXTENSION
ISOMETRIC

NO	DATE	REVISIONS	APP	BY

VALVE OPERATING SHAFT EXTENSION

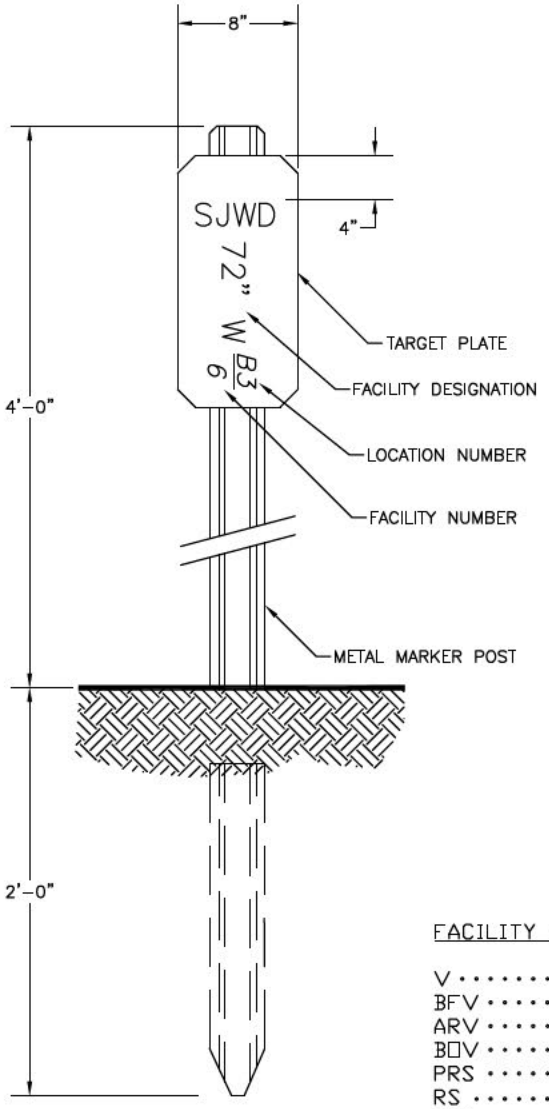
SAN JUAN WATER DISTRICT

APPROVED

SCALE: NTS | PRINT DATE: 07/29/11 | DETAIL NO: SHT 15 OF 27

NOTES:

1. INSTALL GUIDE MARKERS IN UNIMPROVED AREAS AND ALONG GRAVEL & DIRT ROADS.
2. TARGET PLATE AND METAL MARKER POST SHALL CONFORM TO SECTION 82 OF THE CURRENT CALIFORNIA STANDARD SPECIFICATIONS AND DRAWING A-74.
3. FIBERGLASS MARKERS MAY BE SUBSTITUTED UPON DISTRICT APPROVAL.
4. LOCATION AND FACILITY NUMBERS SHALL BE APPLIED BY CONTRACTOR OR MARKER MANUFACTURER.
5. ALL NUMBERS AND LETTERS SHALL BE 2-1/2" STENCILED BLACK.



FACILITY DESIGNATION

V ..... GATE VALVE
BFV ..... BUTTERFLY VALVE
ARV ..... AIR RELEASE VALVE
BOV ..... BLOWOFF VALVE
PRS ..... PRESSURE REDUCING STATION
RS ..... RECORDING STATION
CTS ..... CATHODIC TEST STATION
CV ..... CHECK VALVE
XX"W ..... (SIZE)" WATER MAIN
(EXAMPLE 54" W)

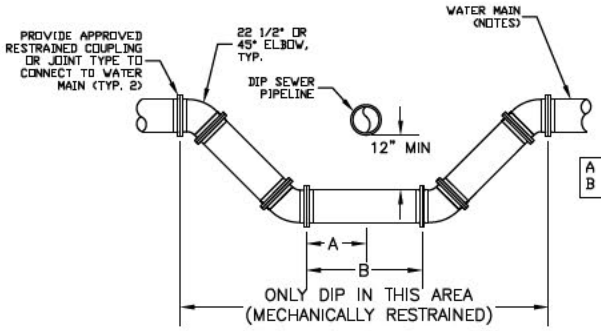
NO	DATE	REVISIONS	APP	BY

GUIDE AND LOCATION MARKERS

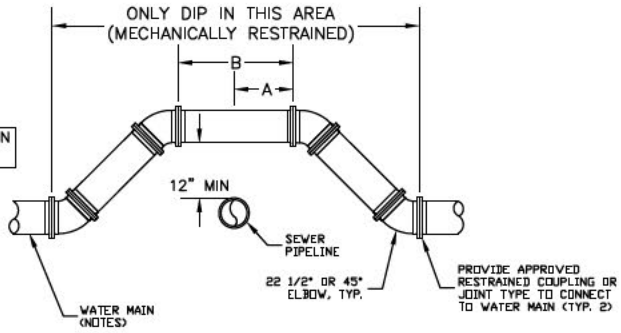
SAN JUAN WATER DISTRICT

APPROVED

SCALE: NTS | PRINT DATE: 04/17/07 | DETAIL NO: SHT 16 OF 27



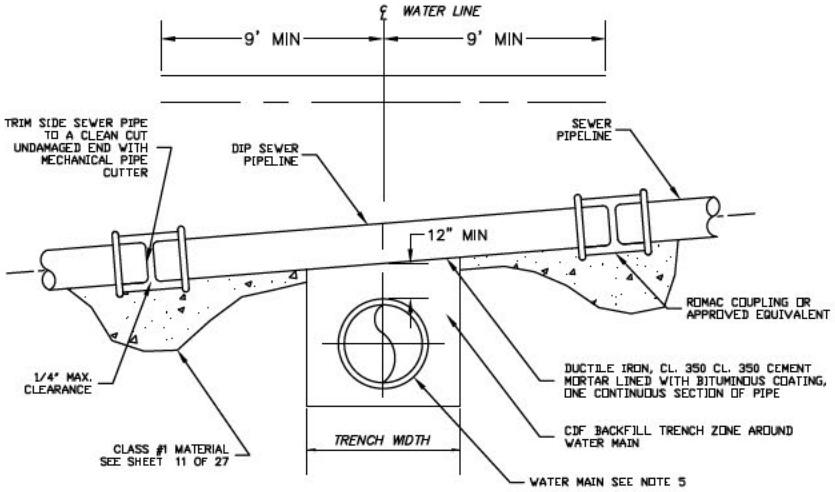
SECTION - WATER MAIN
CROSSING UNDER SEWER



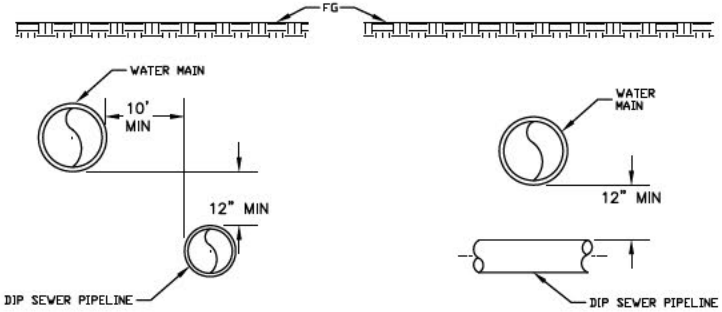
SECTION - WATER MAIN
CROSSING OVER SEWER

NOTES:

1. WATER MAIN SHALL CROSS OVER SEWER WHENEVER POSSIBLE.
2. CROSSINGS SHALL BE MADE AS CLOSE AS POSSIBLE TO PERPENDICULAR (90°), AND AS FAR FROM SEWER PIPELINE JOINTS AS POSSIBLE. WHERE CROSSINGS ARE LESS THAN 70° DISTRICT ENGINEERING SHALL BE ADVISED FOR FIELD DIRECTION.
3. INSIDE NOMINAL DIAMETER OF DUCTILE IRON SEWER PIPE TO BE THE SAME AS THE PIPE TO WHICH IT CONNECTS.
4. DUCTILE IRON SEWER PIPE IS TO BE USED PER THIS DETAIL WHENEVER THE LATERAL OR SEWER SERVICE CROSSES OVER A WATER LINE.
5. CROSSINGS REQUIRING MORE THAN ONE JOINT LENGTH OF DUCTILE IRON SEWER PIPE SHALL HAVE THE JOINTS ENCASED IN 4" OF CONCRETE THAT EXTENDS 6" (MIN) IN EACH DIRECTION FROM THE JOINT.
6. UNLESS OTHERWISE DIRECTED BY DISTRICT, ALL WATERLINE PIPING REQUIRED TO CROSS UNDER SEWER SHALL BE CLASS 350 DIP CML AND BIT COATED.
7. ONE FULL LENGTH OF WATER PIPE SHALL BE LOCATED SO BOTH JOINTS WILL BE AS FAR FROM THE SEWER AS POSSIBLE. NO JOINTS, FITTINGS OR CONNECTIONS ALLOWED WITH IN AREA "B".
8. AT CONTRACTORS DISCRETION THE WATER MAIN TRENCH CAN BE EXCAVATED ON A SLOPE TO INSTALL ("ROPE") MAIN INSTEAD OF USING FITTINGS. JOINT DEFLECTION SHALL NOT EXCEED 2.5°.
9. ALL FITTINGS SHALL BE FULLY MECHANICALLY RESTRAINED USING DISTRICT APPROVED METHODS.
10. DUCTILE IRON PIPE SHALL BE WRAPPED WITH 8 MIL POLYETHYLENE SHEETS, 8" LAP REQUIRED.
11. ALTERNATIVES PER STATE OF CALIFORNIA ENVIRONMENTAL HEALTH REGULATIONS MAY BE ALLOWED WITH DISTRICT APPROVAL.



TYPICAL CROSSING DETAIL
WATER LINE UNDER SEWER



PARALLEL CONSTRUCTION

PERPENDICULAR CONSTRUCTION

REF: DEPT. OF HEALTH SERVICES "CRITERIA FOR THE SEPARATION OF WATER MAINS AND SANITARY SEWERS", SECTION 64630, TITLE 22, CCR.

MINIMUM SEPARATION REQUIREMENTS
(CONTACT DISTRICT WHEN MIN. SEPARATION CANNOT BE ACHIEVED

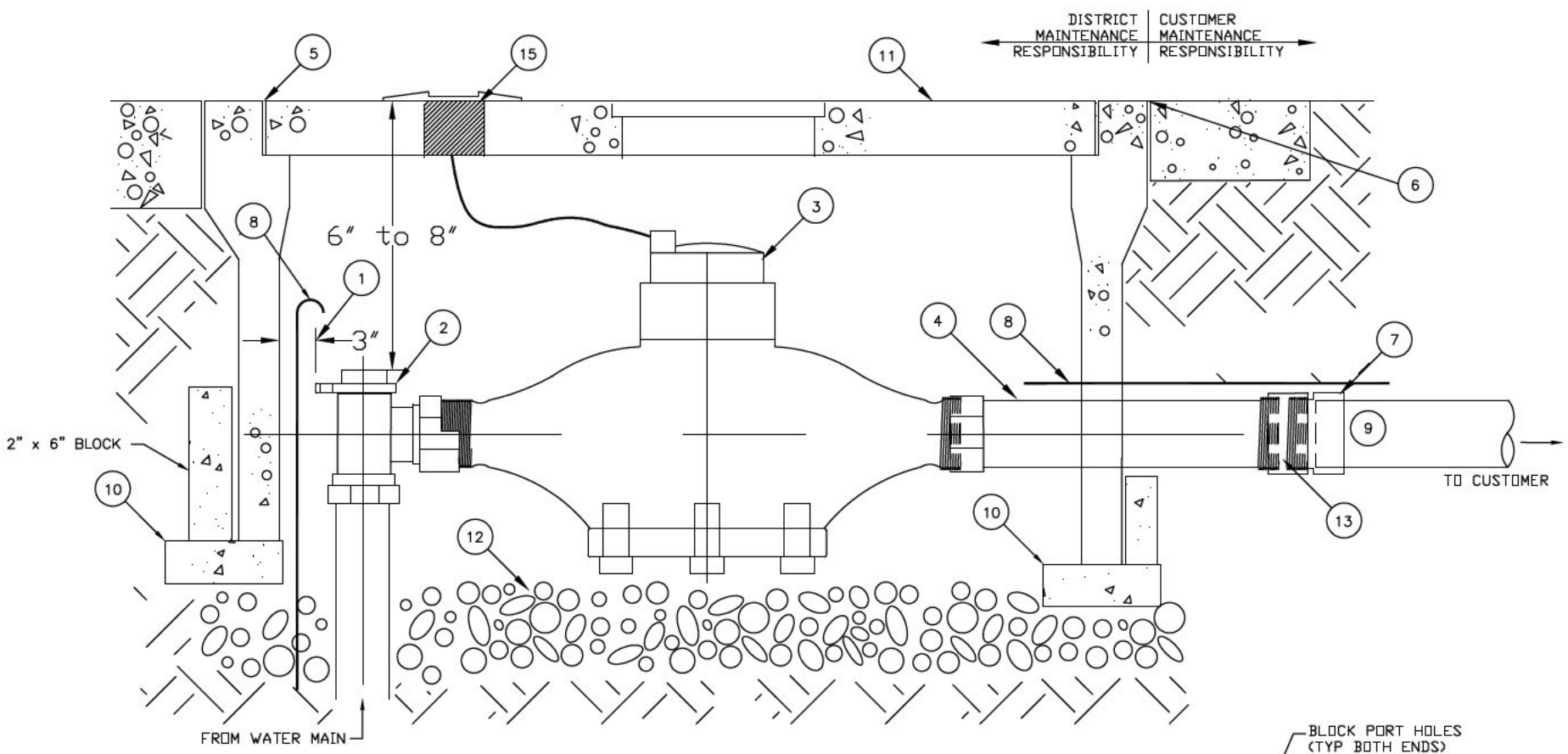
NO	DATE	REVISIONS	APP	BY

WATER AND SEWER LINE SEPARATIONS

SAN JUAN WATER DISTRICT

APPROVED

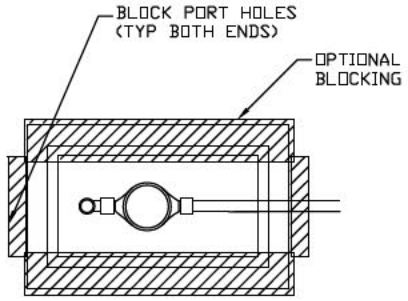
SCALE: NTS | PRINT DATE: 07/13/07 | DETAIL NO: SHT 17 OF 27



NOTES:

1. 3-IN SEPARATION FROM BACK OF BOX LID. METER FACE MUST BE EASILY READABLE THRU METAL PORT IN BOX LID.
2. 1-IN ANGLE METER VALVE.
3. SENSUS SR II TR/PL TOUCH READ METER, OR SJWD APPROVED ALTERNATE.
4. 8-1/2 INCH BRASS METER SPUD (SEE *)
5. CHRISTY B-16 BOX WITH B-16GP LID.
6. BOX MUST BE SET FLUSH WITH FINAL LOT GRADE AND CLEAR OF OBSTRUCTIONS, INCLUDING DRIVEWAYS. CONTACT DISTRICT WHERE CONFLICTS EXIST. GRADE SURROUNDING FINISHED SURFACE AREA TO DRAIN AWAY FROM METER BOX.
7. SCH. 80 PVC ADAPTER (MIPxSLIP).
8. #10 GAUGE INSULATED COPPER TONING WIRE, 18-IN LENGTH TO BE LEFT IN SERVICE BOX. STRIP 6" OF INSULATION OFF FROM END OF TONING WIRE AND COIL WIRE IN BOX.
9. CUSTOMER LINE SIZE SELECTED BY OWNER, TYPICALLY 3/4-IN OR GREATER. LARGER SIZE MAY BE WARRANTED. OWNER TO VERIFY SIZE REQUIRED WITH DESIGNER.
10. 2"x4" AND 2"x6" CONC. OR BRICK BLOCKING TO SUPPORT BOX AND METER SPUD. BLOCKS ARE TO BE PLACED LENGTH WISE OR ON ENDS AND COVERING PORT HOLES IN BOX.
11. DAMAGED BOX OR LID (#6) SHALL BE REPLACED BY THE CONTRACTOR PRIOR TO WATER TURN ON / ACTIVATION.
12. 3/4 INCH SCREENED DRAIN ROCK 12-IN DEEP.
13. 1-IN BRASS (FIPxFIP) COUPLER
14. OWNER TO MAINTAIN A MIN. 2-FT HORIZONTAL CLEARANCE FROM SERVICE BOX PERIMETER FOLLOWING INSTALLATION OF THE METER.
15. SEE SENSUS INSTALLATION DETAIL SHEET FOR TOUCH READ PAD INSTALLATION INSTRUCTIONS.

* SUPPLIED BY DISTRICT (FOR NEW DEVELOPMENT PROJECTS ONLY)



BLOCKING DETAIL

NO	DATE	REVISIONS	APP	BY

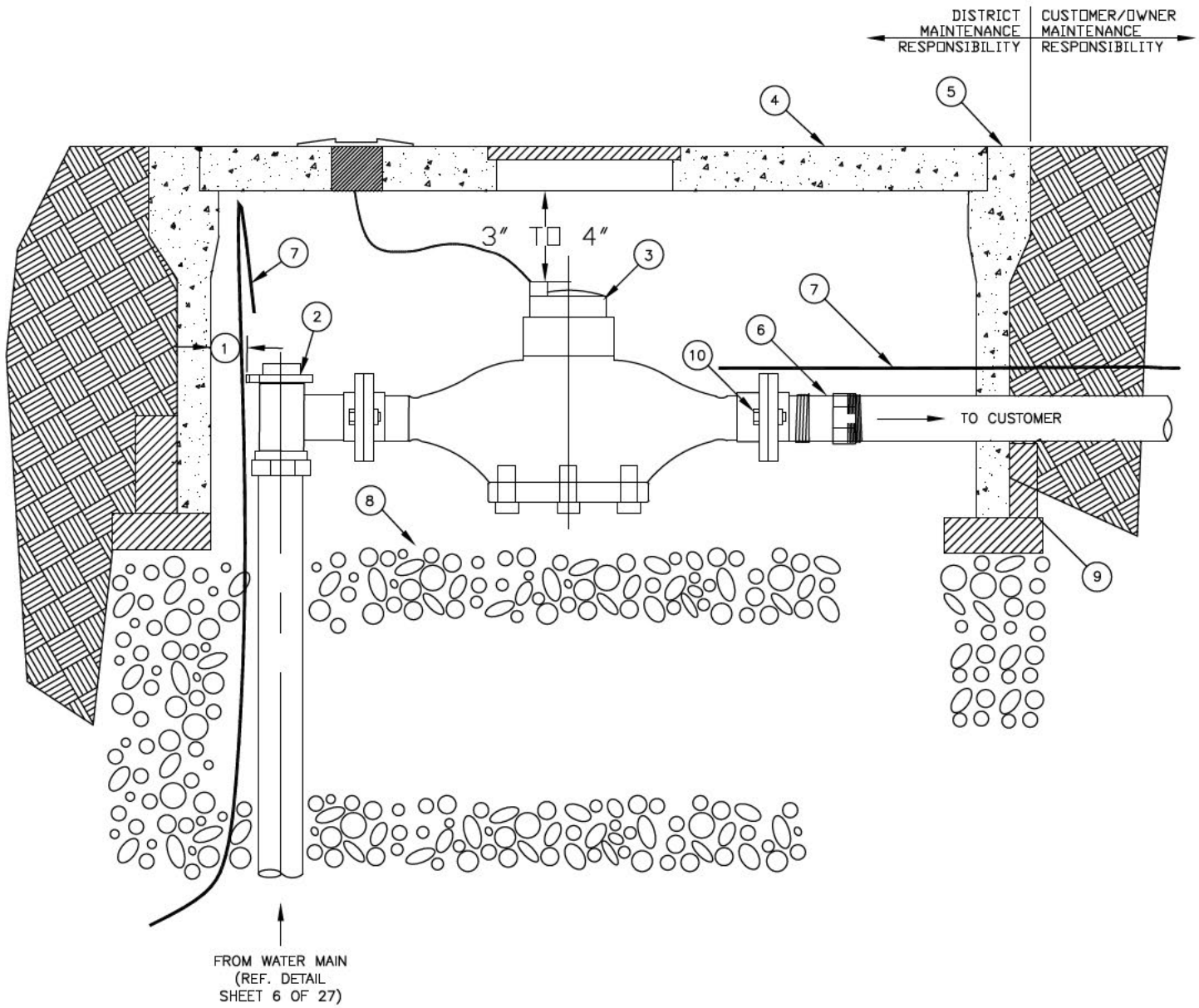
SINCE 1854
SJWD ENGINEERING DEPT

STANDARD 1" METER CONNECTION

SAN JUAN WATER DISTRICT

APPROVED

SCALE: NTS | PRINT DATE: 02/04/13 | DETAIL NO: SHT 18 OF 27



NOTES:

1. 2" CLR SEPARATION FROM BACK OF BOX. METER FACE MUST BE EASILY READABLE THRU METAL PORT IN BOX LID.
2. FLANGED ANGLE METER VALVE.
3. SENSUS TOUCH READ METER (CONTACT DISTRICT FOR SJWD APPROVED METER TYPE.)
4. CHRISTY B-36 BOX WITH B-36GP HINGED LID, MARKED "WATER".
5. BOX MUST BE SET FLUSH WITH FINAL LOT GRADE AND CLEAR OF OBSTRUCTIONS, INCLUDING DRIVEWAYS. CONTACT DISTRICT WHERE CONFLICTS EXIST. SLOPE SURROUNDING FINISHED GRADE TO DRAIN AWAY FROM BOX.
6. INSTALL ALL BRASS PIPE AND FITTINGS FROM METER TO BACKFLOW PREVENTION DEVICE.
7. #10 GAUGE INSULATED COPPER TONING WIRE (THHN OR SJWD APPROVED EQUIV.). 18-IN LENGTH TO BE LEFT IN SERVICE BOX. STRIP 6" OF INSULATION OFF FROM END OF WIRE.
8. 3/4" DRAIN ROCK 18" DEEP.
9. 2"x4" CONC. OR BRICK BLOCKING TO SUPPORT BOX AND METER SPUD. BLOCKS ARE TO BE PLACED LENGTH WISE OR ON ENDS AND BLOCKING PORT HOLES.
10. CONNECTION FASTENERS SHALL BE STAINLESS STEEL BOLTS WITH STAINLESS STEEL WASHERS, AND WITH BRONZE NUTS (TYP. FOR ALL FLG CONNECTIONS).
11. INSTALL FORD A46-NL OR A47-NL SWIVEL NUT TO FLANGE STYLE METER ADAPTER FOR 1-INCH METER INSTALLATIONS MADE ON 1-1/2" OR 2" SERVICES.
12. PROPERTY OWNER TO MAINTAIN A MINIMUM OF 2-FT CLEARANCE AROUND METER BOX AND PROVIDE ACCESS. NO BRUSH, TREES, BUSHES, OR STRUCTURES SHALL BE PLACED AROUND BOX THAT RESTRICT ACCESS OR DAMAGE INSTALLED SERVICE.

NO	DATE	REVISIONS	APP	BY

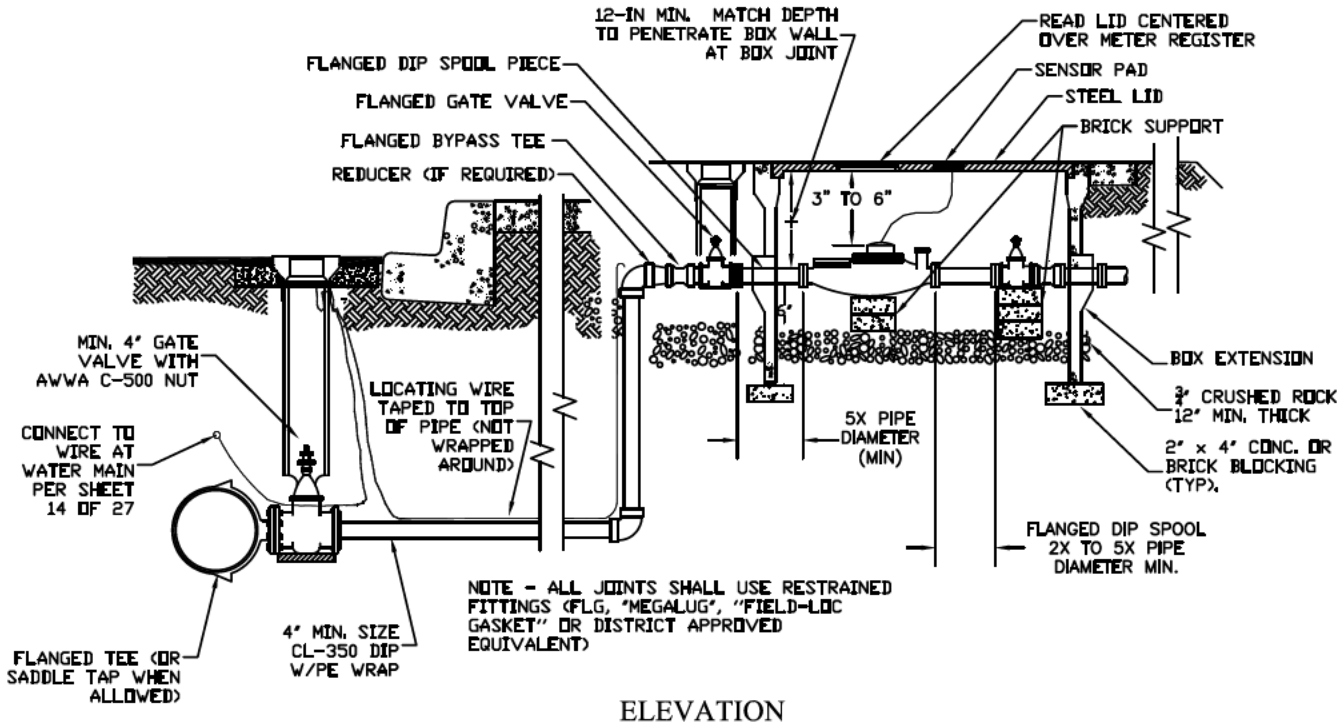
SINCE 1854
SJWD ENGINEERING DEPT

STANDARD METER CONNECTION 1-1/2' AND 2"

SAN JUAN WATER DISTRICT

APPROVED

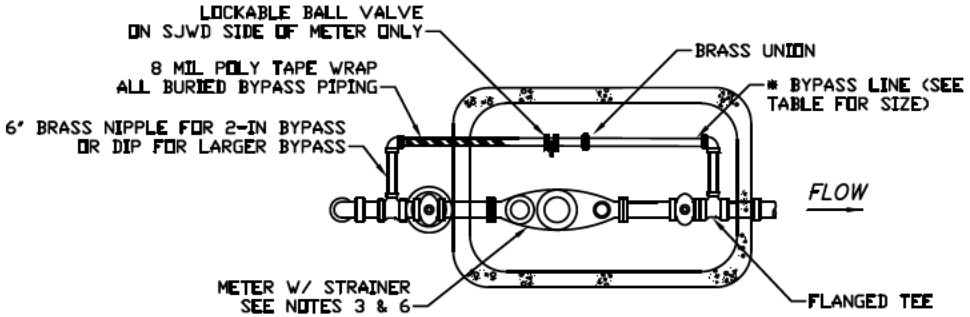
SCALE: NTS	PRINT DATE: 02/04/13	DETAIL NO: SHT 19 OF 27



ELEVATION VIEW

NOTES:

1. METER BOX SHALL BE CHRISTY B-52 FOR 3" METER, OR APPROPRIATLY LARGER SIZED BOX FOR LARGER METERS AS NECESSARY TO CONTAIN ALL PIPING & FITTINGS WITH MINIMUM OF 6" CLEARANCE ALL AROUND (PER DETAIL). LARGER BOXES TO BE APPROVED BY DISTRICT, LIDS SHALL BE BOLT-DOWN TYPE MARKED "WATER".
2. ALL FITTINGS 4" & LARGER SHALL BE FLANGED OR MJ MECHANICALLY RESTRAINED (W/ EBAA IRON MEGALUG RESTRAINERS OR APPROVED EQUAL).
3. DISTRICT TO SPECIFY METER TYPE AND SIZE. OWNER TO PROVIDE METER AND INSTALL.
4. PROVIDE LOCATING WIRE INSTALLED PER SHEET 14 OF 27.
5. H-20 TRAFFIC RATED BOXES AND LIDS REQUIRED WHERE TRAFFIC LOADING IS PROPOSED OR CAN OCCUR.
6. SENSUS W-951 OR DISTRICT APPROVED EQUIVALENT STRAINERS REQUIRED ON ALL METERS 3" AND LARGER.
7. ALL UNDERGROUND DIP SHALL BE MORTAR LINED AND BITIMINOUS COATED AND P.E. WRAPPED PER AWWA STDS.
8. FLANGE BOLTS AT METER SHALL BE BRASS 270 ALLOY, HEX HEAD, PARTIALLY THREADED TO ADEQUATELY FIT TO FLANGES. BOLTS SHALL BE STRENGTH RATED FOR FLANGE.
9. MORTAR ALL JOINTS BETWEEN BOX SECTIONS AND HOLES/SPACES AT PENETRATIONS.
10. ALL PIPING SHALL BE FULLY MECHANICALLY RESTRAINED.
11. ALL BYPASS PIPING SHALL BE BRASS, DIP, OR DISTRICT PRE-APPROVED ALTERNATE MATERIAL.
12. SUPPORT BLOCKING SHALL BE SET UPON UNDISTURBED NATIVE GROUND OR ENGINEERED FILL MATERIAL AT 95% MINIMUM RELATIVE COMPACTION.
13. CORE DRILL OR CONC. SAW CUT HOLES FOR BOX PENETRATIONS WHERE NOT MANUFACTURER PROVIDED.



PLAN VIEW

METER SIZE	SERVICE PIPING	* MIN. BYPASS PIPING
3"	4"	2"
4"	4"	2"
6"	8"	4"
8"	8"	4"

FOR LARGER SERVICE SIZES CONSULT WITH DISTRICT ENGINEERING DEPARTMENT.

NO	DATE	REVISIONS	APP	BY

STANDARD METER CONNECTION 3" AND LARGER

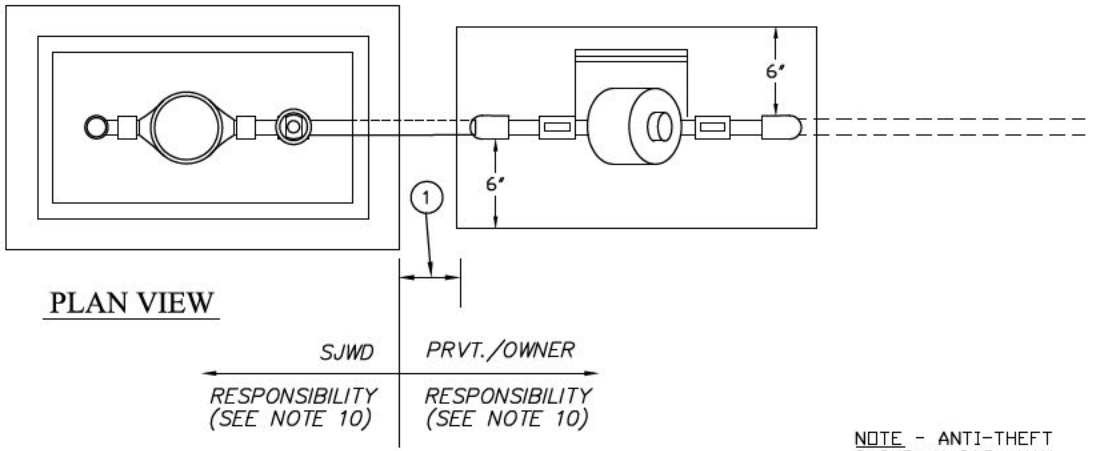
SAN JUAN WATER DISTRICT

APPROVED

SCALE: NTS | PRINT DATE: 08/10/07 | DETAIL NO: SHT 20 OF 27

NOTES:

1. DISTANCE FROM METER BOX TO BACKFLOW DEVICE RISER SHALL BE 8-INCHES MAXIMUM UNLESS OTHERWISE APPROVED BY THE SJWD INSPECTOR OR AUTHORIZED SJWD REPRESENTATIVE. IN ALL CASES THERE SHALL NOT BE ANY TEES, OUTLETS OR CONNECTIONS BETWEEN THE METER AND THE BACKFLOW DEVICE.
2. ALL PIPING FROM METER TO BEYOND BACKFLOW DEVICE CONCRETE PAD SHALL BE TYPE "K" COPPER OR BRASS.
3. RESILIENT SEAT BALL VALVE
4. RPP BACKFLOW DEVICE (FEBCO 825Y, WILKINS 975 XL, OR DISTRICT APPROVED EQUIVALENT).
5. 4-INCH THICK CONCRETE PAD. LENGTH TO PROVIDE 6-IN BEYOND PIPING ON ALL SIDES.
6. 12-INCH MIN TO 20-INCH MAXIMUM CLEARANCE.
7. PROVIDE EXPANSION SLEEVES AROUND ALL PIPE PENETRATIONS THROUGH CONCRETE SLAB.
8. INSULATE ALL ABOVE GROUND PIPING WITH "WEATHERGUARD" INSULATION BLANKET OR DISTRICT APPROVED EQUIVALENT SUITED FOR EXPOSURE.
9. BACKFLOW PREVENTER TO BE TESTED BY A SAN JUAN WATER DISTRICT CERTIFIED TESTER AT TIME OF WATER SERVICE TURN ON.
10. BACKFLOW PREVENTER MAINTENANCE REPAIR AND REPLACEMENT SHALL BE THE RESPONSIBILITY OF THE CUSTOMER. ANNUAL TESTING SHALL BE THE RESPONSIBILITY OFTHE DISTRICT UNLESS OTHERWISE INDICATED BY THE DISTRICT.

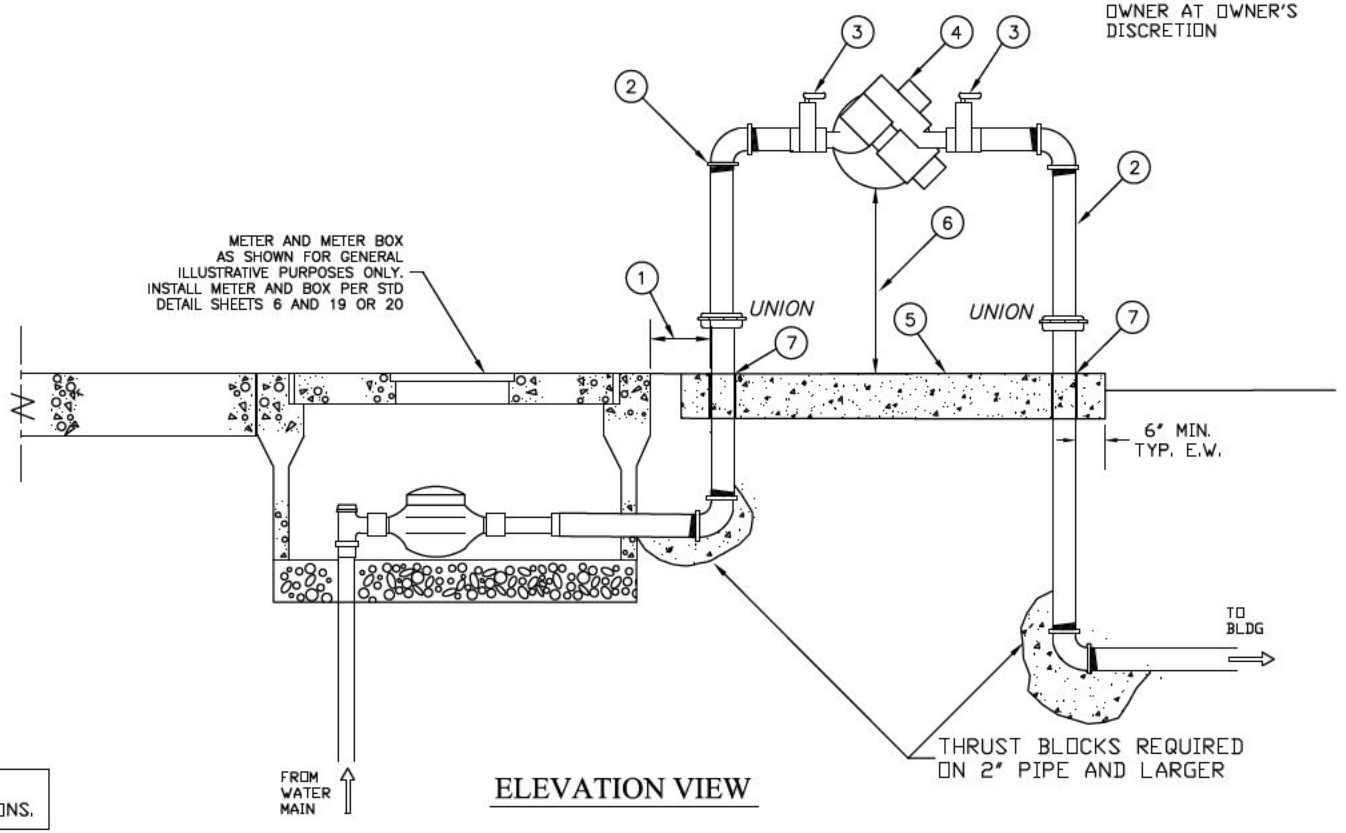


PLAN VIEW

SJWD RESPONSIBILITY (SEE NOTE 10)

PRVT./OWNER RESPONSIBILITY (SEE NOTE 10)

NOTE - ANTI-THEFT SECURITY CAGE MAY BE INSTALLED BY OWNER AT OWNER'S DISCRETION



ELEVATION VIEW

NOTE - REFERENCE DETAIL SHEET 4 FOR ADDITIONAL INFORMATION ON RESIDENTIAL FIRE SERVICE INSTALLATIONS.

NO.	DATE	REVISIONS DESCRIPTION	APP	BY

SINCE 1854
SJWD ENGINEERING DEPT

1" & 2" REDUCED PRESSURE BACKFLOW PREVENTER INSTALLATION
SAN JUAN WATER DISTRICT

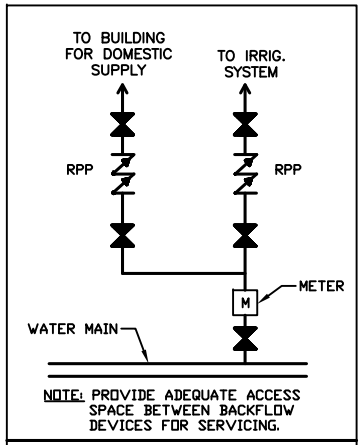
APPROVED (FOR SJWD)

ROB WATSON, P.E. ENGINEERING SERVICES MANAGER

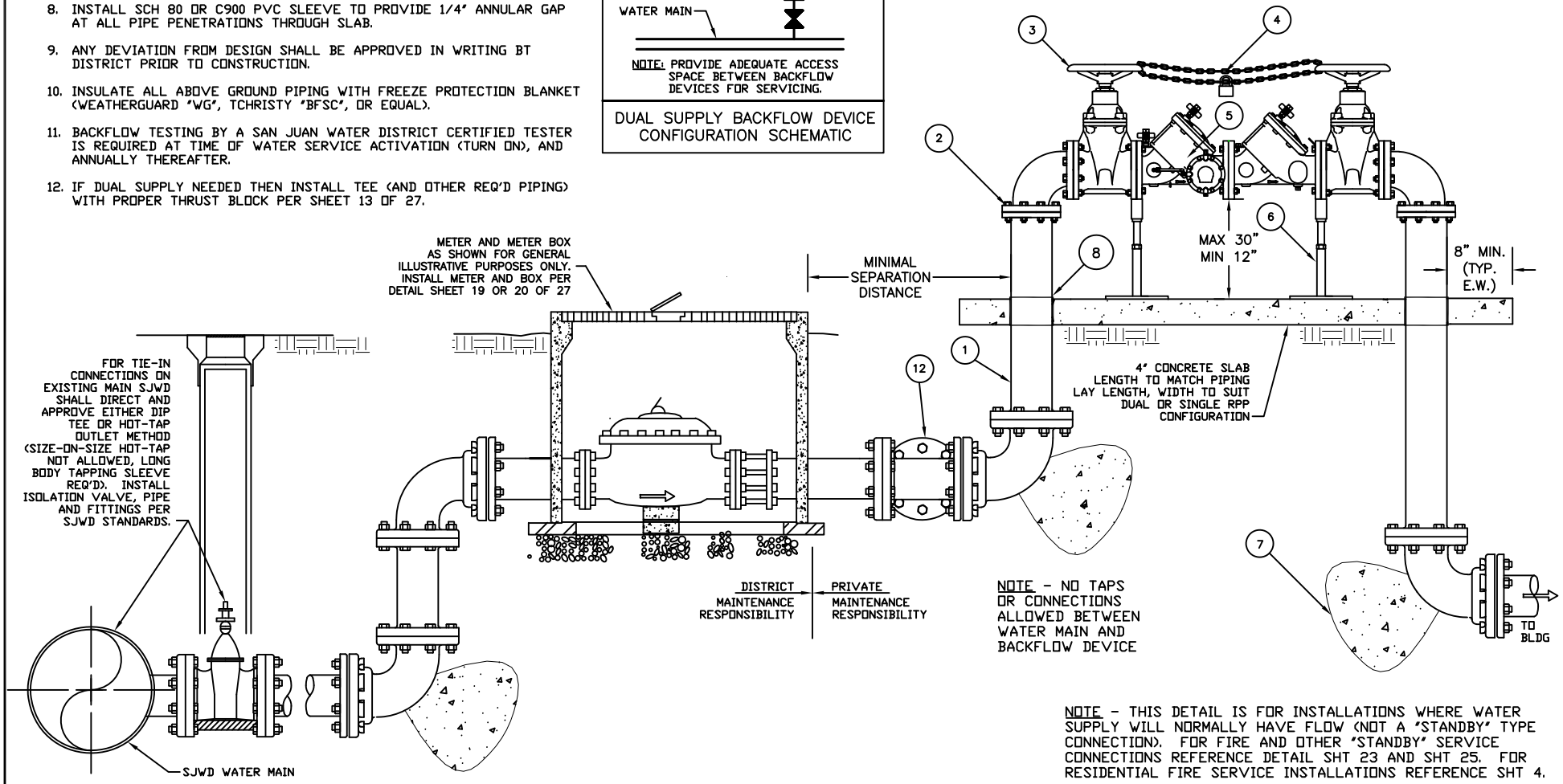
SCALE: NTS	PRINT DATE: 02/01/13	DETAIL NO: SHT 21 OF 27

NOTES:

1. ALL PIPING SHALL BE PRESSURE CLASS CL-350 DIP UNLESS OTHERWISE DISTRICT DIRECTED. POLY-WRAP PER AWWA C105.
2. FITTINGS SHALL BE FLG x FLG OR FLG x MJ MECHANICALLY RESTRAINED (EBAA MEGALUG, OR APPROVED EQUAL).
3. RESILIENT SEATED AWWA CS09 GATE VALVES.
4. MIN. OF 3/8" NON-CASE HARDENED CHAIN W/LOCK BETWEEN VALVES
5. RPP BACKFLOW PREVENTION DEVICE (WILKINS MODEL 975, FEBCO LF860, OR DISTRICT APPROVED EQUIVALENT).
6. PIPE SUPPORTS (PHD MANUFACTURING 875 WITH 871 STAND, PLACER WATERWORKS SDL-S SADDLE WITH STAND, OR DISTRICT APPROVED EQUIVALENT). INSTALL ANCHORS PER MANUFACTURER'S RECOMMENDATIONS.
7. THRUST BLOCKS PER DISTRICT REQUIREMENTS (SEE SHEET 12).
8. INSTALL SCH 80 OR C900 PVC SLEEVE TO PROVIDE 1/4" ANNULAR GAP AT ALL PIPE PENETRATIONS THROUGH SLAB.
9. ANY DEVIATION FROM DESIGN SHALL BE APPROVED IN WRITING BT DISTRICT PRIOR TO CONSTRUCTION.
10. INSULATE ALL ABOVE GROUND PIPING WITH FREEZE PROTECTION BLANKET (WEATHERGUARD "WG", TCHRISTY "BFSC", OR EQUAL).
11. BACKFLOW TESTING BY A SAN JUAN WATER DISTRICT CERTIFIED TESTER IS REQUIRED AT TIME OF WATER SERVICE ACTIVATION (TURN ON), AND ANNUALLY THEREAFTER.
12. IF DUAL SUPPLY NEEDED THEN INSTALL TEE (AND OTHER REQ'D PIPING) WITH PROPER THRUST BLOCK PER SHEET 13 OF 27.



DUAL SUPPLY BACKFLOW DEVICE CONFIGURATION SCHEMATIC



NOTE - THIS DETAIL IS FOR INSTALLATIONS WHERE WATER SUPPLY WILL NORMALLY HAVE FLOW (NOT A "STANDBY" TYPE CONNECTION). FOR FIRE AND OTHER "STANDBY" SERVICE CONNECTIONS REFERENCE DETAIL SHT 23 AND SHT 25. FOR RESIDENTIAL FIRE SERVICE INSTALLATIONS REFERENCE SHT 4.

NO	DATE	REVISIONS	APP	BY
A	2/8/21	FEBCO CHG(825 to 860)	A.P.	SE

SAN JUAN WATER ENGINEERING DEPT

BACKFLOW PREVENTION DEVICE WITH METER (2-1/2" OR LARGER)

SAN JUAN WATER DISTRICT

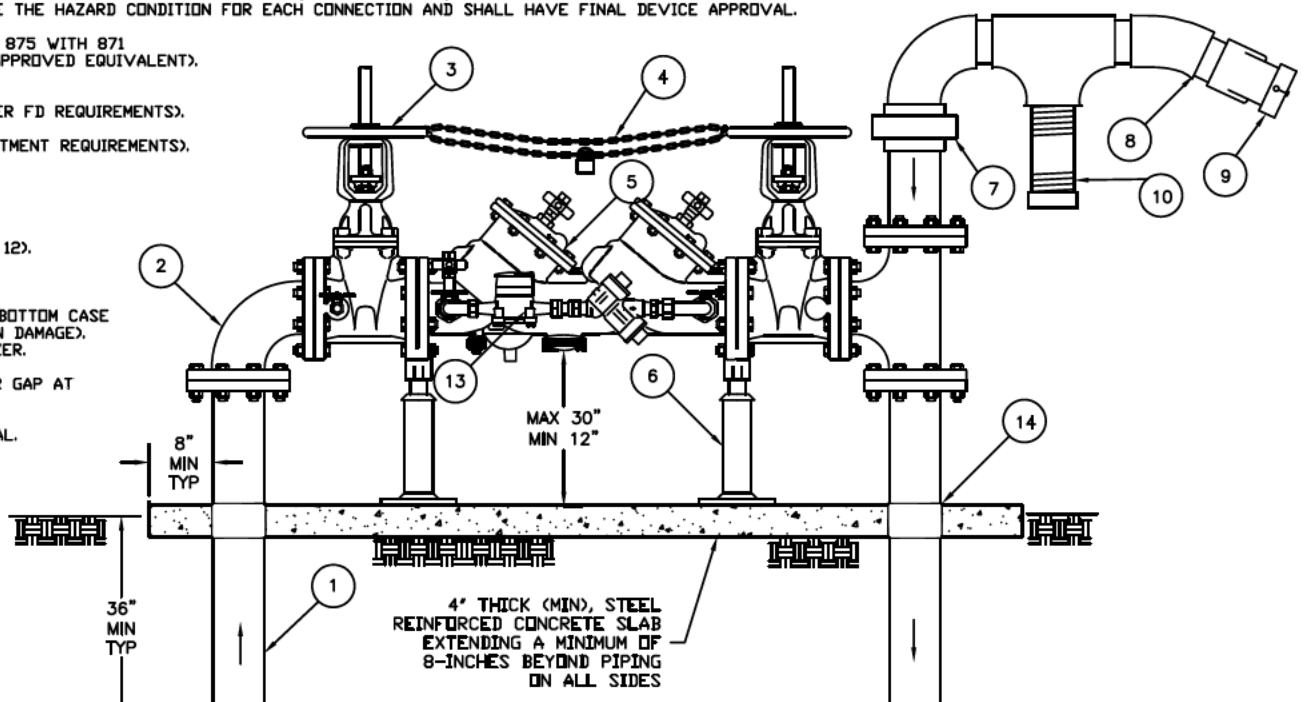
APPROVED FOR SJWD:

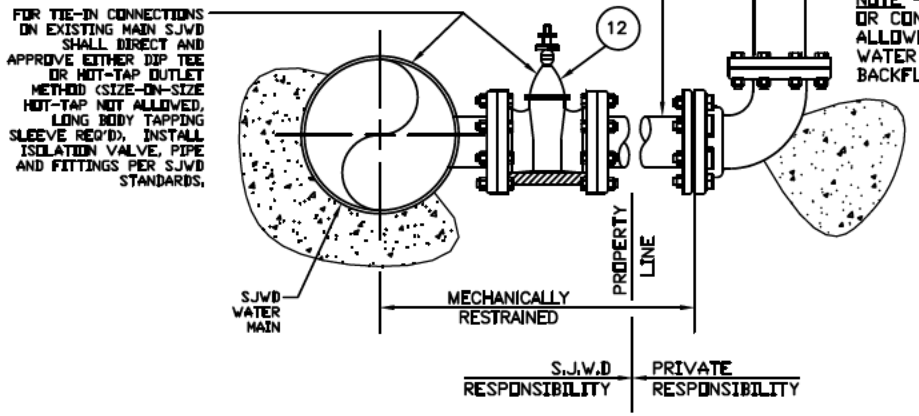
ANDREW PIERSON, P.E. - ENGINEERING SERVICES MANAGER

SCALE:	PRINT DATE:	DETAIL NO:
NTS	02/08/21	SHT 22 OF 27

NOTES:

1. ALL PIPING SHALL BE PRESSURE CL-350 DUCTILE IRON PIPE (DIP). ALL BURIED PIPE UP TO BACKFLOW DEVICE INLET SHALL BE POLY-WRAPPED PER AWWA C105.
2. FITTINGS SHALL BE FLG x FLG OR MECHANICALLY RESTRAINED FLG x MJ (EBAA MEGALUG OR APPROVED EQUAL).
3. OS & Y R.S. GATE VALVES, MEETING AWWA STANDARDS, AND LEFT IN NORMALLY OPEN POSITION.
4. PROVIDE A MIN. OF 3/8" NON-CASE HARDENED CHAIN W/LOCK BETWEEN VALVES.
5. REDUCED PRESSURE DETECTOR ASSEMBLY (RPDA) TYPE BACKFLOW PREVENTION DEVICE (FEBCO 826YD, WILKINS 975DA, OR DISTRICT APPROVED EQUIVALENT SUITED FOR HEALTH HAZARD CONDITION USE). DISTRICT SHALL DETERMINE THE HAZARD CONDITION FOR EACH CONNECTION AND SHALL HAVE FINAL DEVICE APPROVAL.
6. FABRICATED PIPE SUPPORT, TYP. 2 (PHD MANUFACTURERING MODEL 875 WITH 871 STAND, PLACER WATERWORKS SDL-S WITH STAND, OR DISTRICT APPROVED EQUIVALENT). ANCHOR BOLT TO SLAB PER MANUFACTURER'S RECOMMENDATIONS.
7. WAFER CHECK VALVE (GROENIGER KWIK-CHECK 68G, OR EQUAL, PER FD REQUIREMENTS).
8. SIAMESE 45 DEGREE-FDC UL, FD APPROVED FDC (PER FIRE DEPARTMENT REQUIREMENTS).
9. 2-1/2" BRASS PLUGS.
10. 4" x 12" GALVANIZED NIPPLE W/4" GALVANIZED CAP.
11. THRUST BLOCKS PER DISTRICT REQUIREMENTS (SEE DETAIL SHEET 12).
12. R.S. OR R.W. GATE VALVE REQUIRED ON FIRE LINES.
13. DETECTOR METER WITH BYPASS RPP BACKFLOW DEVICE (PLASTIC BOTTOM CASE TYPE RECOMMENDED TO PROTECT DEVICE FROM FREEZE CONDITION DAMAGE). METER TO READ IN CUBIC FEET, INSTANEOUS READ WITH TOTALIZER.
14. INSTALL SCH 80 OR C900 PVC SLEEVE TO PROVIDE 1/4" ANNULAR GAP AT ALL PIPE PENETRATIONS
15. ANY DESIGN DEVIATIONS SHALL HAVE WRITTEN DISTRICT APPROVAL.
16. INSULATE ENTIRE ABOVE-GROUND ASSEMBLY WITH FREEZE PROTECTION INSULATION BLANKET, CORRECTLY SIZED TO FIT INSTALLATION (WEATHER GUARD TYPE "W", TCHRISTY "BFSC", OR DISTRICT APPROVED EQUIVALENT.
17. BACKFLOW TEST REQUIRED AT TIME OF WATER ACTIVATION, AND ANNUALLY THEREAFTER.
18. CONNECTIONS WITH ONSITE BOOSTER PUMPS SHALL INCORPORATE RPDA AND A PRESSURE SUSTAINING CONTROL VALVE SET SO THE PUBLIC WATER SUPPLY WILL NOT DROP BELOW 20 PSI. SUBMIT DESIGN TO DISTRICT ENGINEER FOR PRE-APPROVAL.





NO	DATE	REVISIONS	APP	BY

SAN JUAN WATER ENGINEERING DEPT

BACKFLOW PREVENTION DEVICE WITH FIRE DEPT. CONNECTION

SAN JUAN WATER DISTRICT

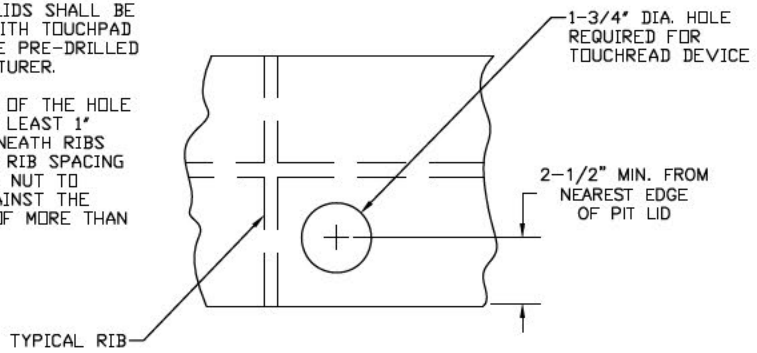
APPROVED FOR SJWD:

ROB WATSON, P.E. - ENGINEERING SERVICES MANAGER

SCALE: NTS	PRINT DATE: 09/13/10	DETAIL NO: SHT 23 OF 27

NOTES:

1. METER PIT LIDS SHALL BE PROVIDED WITH TOUCHPAD SENSOR HOLE PRE-DRILLED BY MANUFACTURER.
2. THE CENTER OF THE HOLE MUST BE AT LEAST 1" FROM UNDERNEATH RIBS UNLESS THE RIB SPACING ALLOWS THE NUT TO TIGHTEN AGAINST THE OPEN SIDE OF MORE THAN ONE RIB.



METER PIT LID
PLAN VIEW

INSTALLATION INSTRUCTIONS

INSTALLING DEVICE:

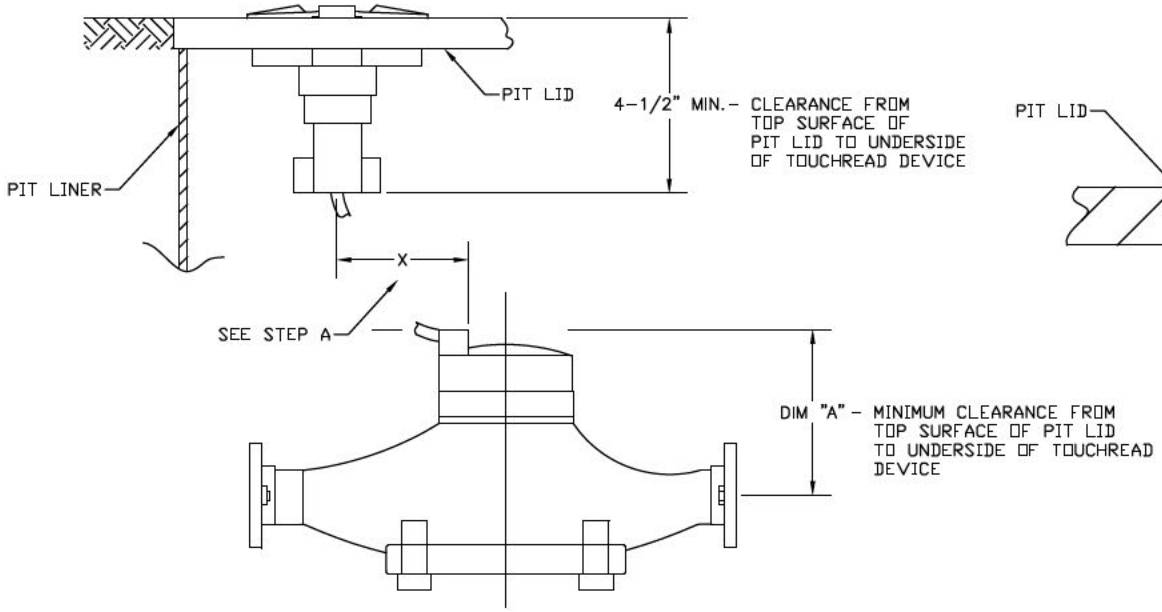
1. INSERT SENSOR HOUSING (A) THROUGH PIT LID HOLE FROM ABOVE AND TIGHTEN SECURELY IN PLACE WITH PLASTIC NUT (B).
2. INSERT SENSOR ASSEMBLY (C), CONNECTED TO METER'S REGISTER, INTO HOUSING AND SECURE IN PLACE WITH SCREW PLUG (D).
3. EXCESS WIRE SHOULD BE COILED LOOSELY, NOT TIED, IN METER PIT, ALLOWING SLACK FOR PIT COVER (LID) REMOVAL.

SR METERS

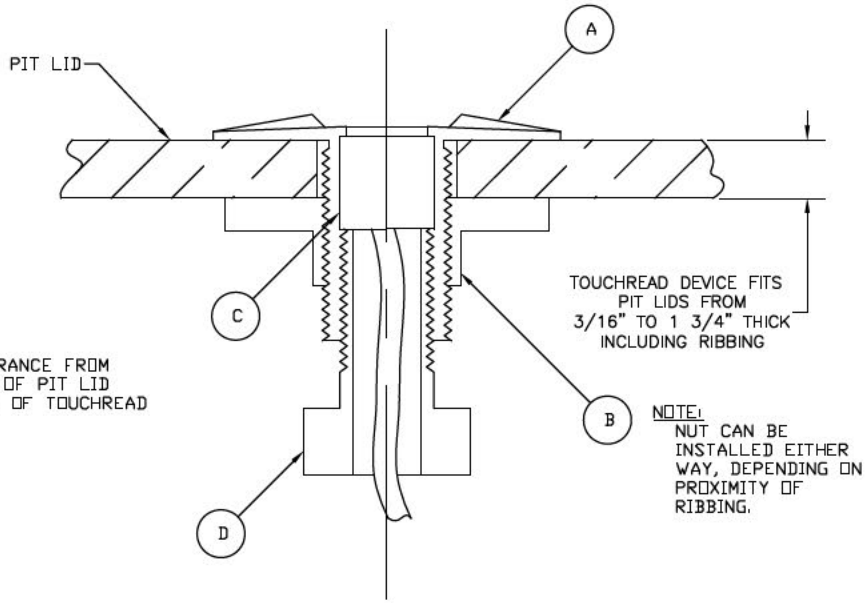
METER SIZE	DIM "A"
5/8"	4 1/2
3/4"	5
1"	5 1/2
1 1/2"	6
2"	7

SR II METERS

METER SIZE	DIM "A"
5/8"	5 1/2
3/4"	5 1/2
1"	6 1/2



METER PIT INSTALLATION
PROFILE VIEW



TOUCHREAD INSTALLATION DETAILS
SECTION VIEW

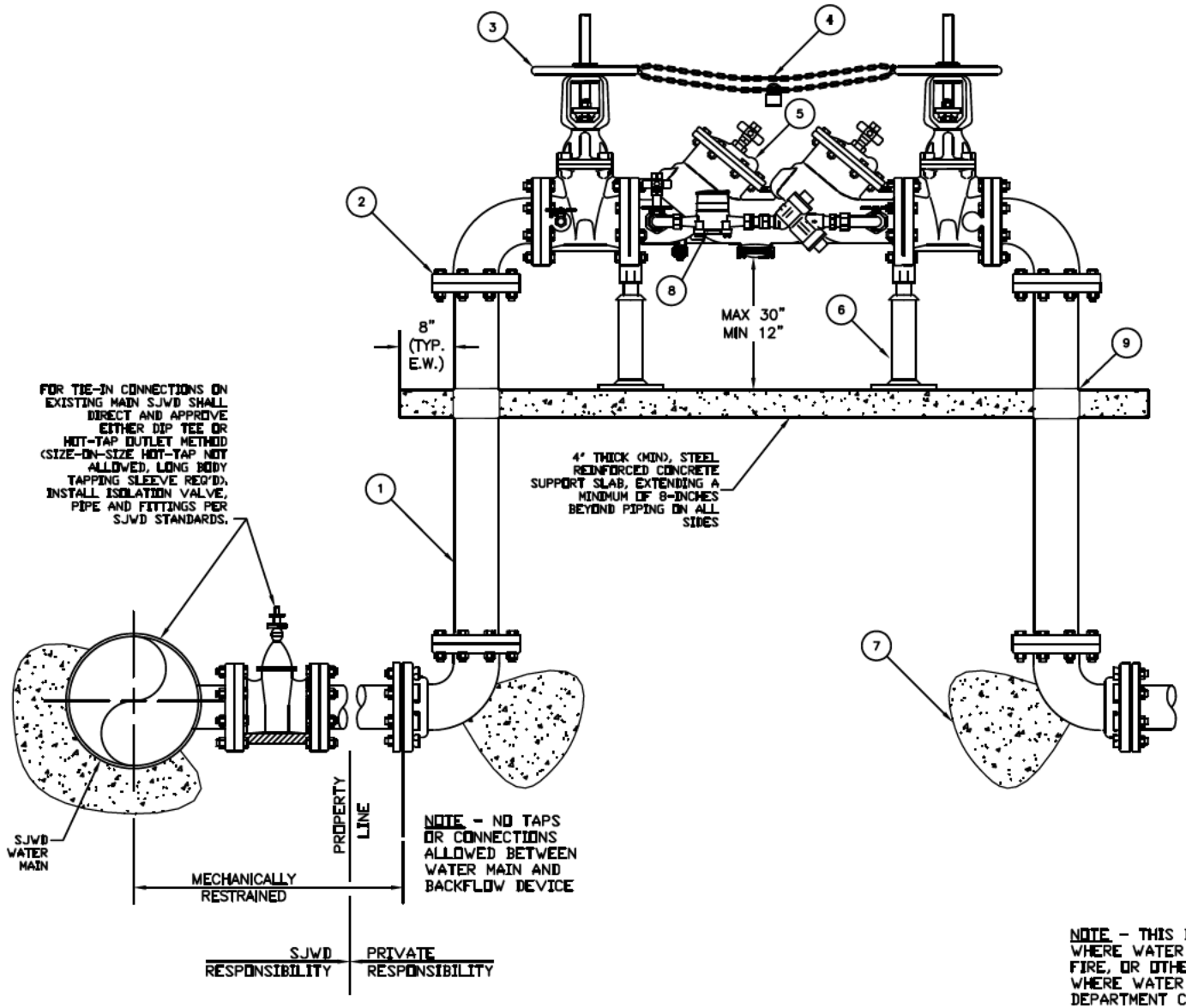
NO	DATE	REVISIONS	APP	BY

WATER METER TOUCHREAD DEVICE INSTALLATION INSTRUCTIONS

SAN JUAN WATER DISTRICT

APPROVED

SCALE: NTS | PRINT DATE: 04/17/07 | DETAIL NO: SHT 24 OF 27



NOTES:

1. PIPE AND FITTINGS SHALL BE PRESSURE CL-350 DUCTILE IRON PIPE. ALL UNDERGROUND DIP PIPE & FITTINGS SHALL BE POLY-WRAPPED PER AWWA C105.
2. ALL JOINTS SHALL BE MECHANICALLY RESTRAINED. USE FLG x FLG FITTINGS OR FLG x MJ FITTINGS WITH EBAA MEGALUG OR APPROVED EQUIVALENT.
3. OS & Y RESILENT SEAT, AWWA, VALVES.
4. PROVIDE A MIN. OF 3/8" NON-CASE HARDENED CHAIN W/LOCK BETWEEN VALVES.
5. DISTRICT APPROVED REDUCED PRESSURE DETECTOR ASSEMBLY (RPDA) TYPE BACKFLOW PREVENTION DEVICE (FEBCO 826YD, WILKINS 975DA, OR DISTRICT APPROVED EQUIVALENT). IN SOME NON-PWS-HEALTH-HAZARD AND NON-FIRE SYSTEM SUPPLY CASES, AND WITH PRIOR DISTRICT WRITTEN APPROVAL, THE DISTRICT MAY ALLOW AN APPROVED DOUBLE CHECK DETECTOR CHECK (DCDA) TYPE BACKFLOW PREVENTION DEVICE (WILKINS 950DA, FEBCO 856, OR DISTRICT APPROVED EQUIVALENT). THE DISTRICT SHALL DETERMINE THE HAZARD CONDITION FOR EACH CONNECTION AND SHALL HAVE FINAL APPROVAL OF THE DCDA OR RPDA DEVICE ALLOWED.
6. FABRICATED PIPE SUPPORTS (PHD MANUFACTURING MODEL 875 WITH 871 STAND, PLACER WATERWORKS SDL-S SADDLE WITH STAND, OR DISTRICT APPROVED EQUIVALENT), ANCHOR BOLTED TO SLAB PER MANUFACTURER'S RECOMMENDATIONS.
7. PROVIDE CONCRETE THRUST BLOCKS PER SJWD STANDARDS (SEE SHEET 12).
8. DETECTOR METER AND BYPASS RPP BACKFLOW PREVENTER (PLASTIC BOTTOM CASE TYPE RECOMMENDED TO PROTECT DEVICE FROM FREEZE CONDITION DAMAGE). METER TO READ IN CUBIC FEET, INSTANTANEOUS READ WITH TOTALIZER.
9. INSTALL SCH 80 OR C900 PVC SLEEVE TO PROVIDE 1/4" ANNULAR GAP AT ALL PIPE PENETRATIONS.
10. ANY DEVIATION FROM DESIGN SHALL BE APPROVED IN WRITING PRIOR TO PROJECT APPROVAL BY SJWD.
11. INSULATE ENTIRE ABOVE GROUND ASSEMPLY WITH FREEZE PROTECTION INSULATION BLANKET, CORRECTLY SIZED TO FIT INSTALLATION (WEATHERGUARD "WG", TCHRISTY "BFSC", OR DISTRICT APPROVED EQUIVALENT).
12. BACKFLOW TESTING BY A SAN JUAN WATER DISTRICT CERTIFIED TESTER IS REQUIRED AT TIME OF WATER SERVICE ACTIVATION (TURN ON), AND ANNUALLY THEREAFTER.

NOTE - THIS DETAIL IS FOR 3-IN AND LARGER INSTALLATIONS WHERE WATER SUPPLY IS ONLY FOR LIFE-SAFETY, EMERGENCY, FIRE, OR OTHER SIMILAR "STANDBY" CONNECTION CONDITIONS WHERE WATER FLOW WILL NOT NORMALLY OCCUR AND A FIRE DEPARTMENT CONNECTION (FDC) IS NOT REQUIRED. FOR SERVICE CONNECTIONS WHERE WATER SUPPLY WILL FLOW AND BE NORMALLY IN USE REFERENCE DETAIL SHT 22. FOR RESIDENTIAL FIRE SPRINKLER SERVICE CONNECTIONS REFERENCE SHT 4.

NO	DATE	REVISIONS	APP	BY

SAN JUAN WATER ENGINEERING DEPT

BACKFLOW PREVENTION DEVICE WITHOUT FIRE DEPT. CONNECTION

SAN JUAN WATER DISTRICT

APPROVED FOR SJWD:

ROB WATSON, P.E. - ENGINEERING SERVICES MANAGER

SCALE:	PRINT DATE:	DETAIL NO:
NTS	09/13/10	SHT 25 OF 27

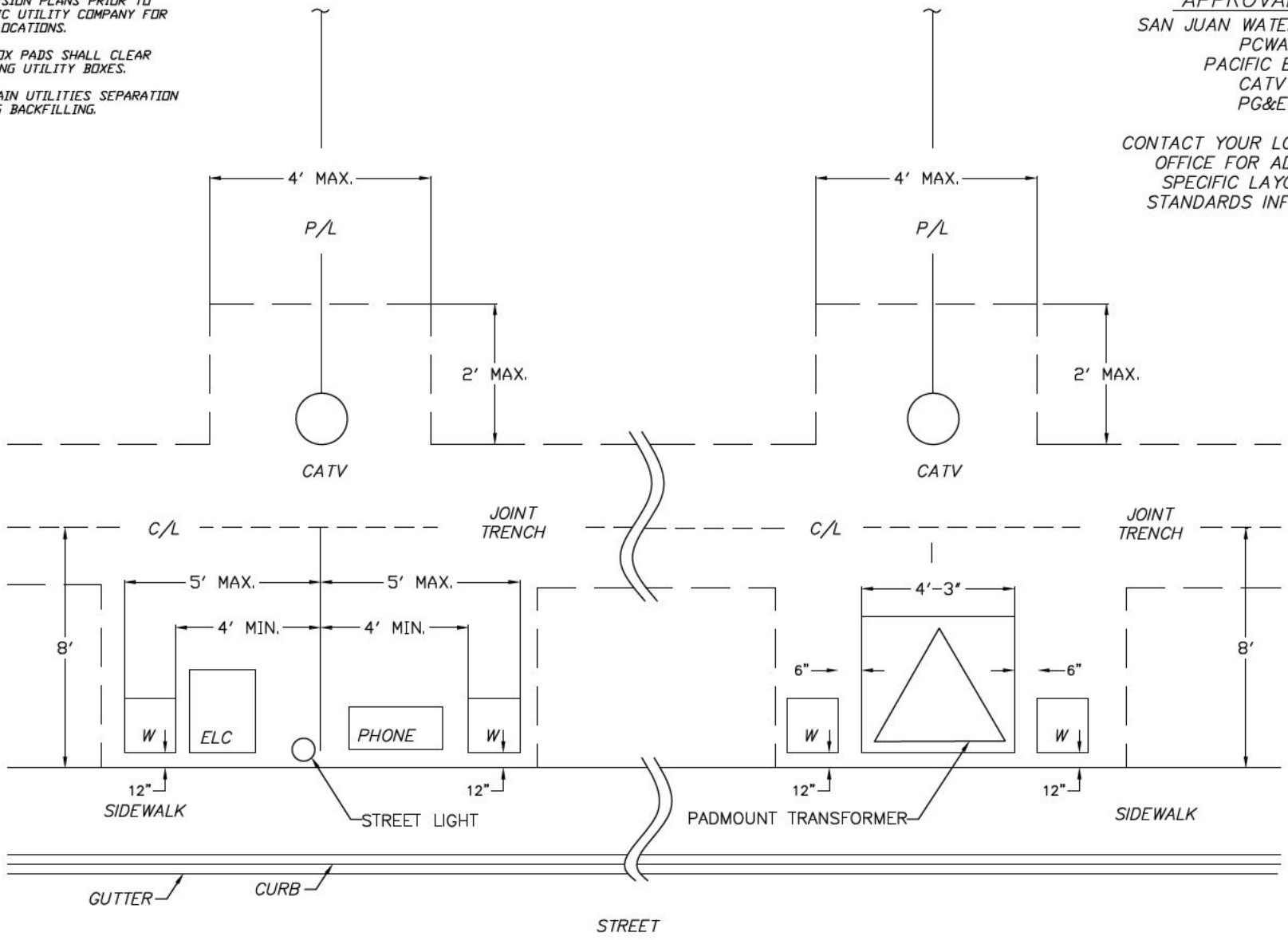
NOTES:

1. FIRE HYDRANTS TO BE LOCATED ON SUBDIVISION PLANS PRIOR TO ELECTRIC UTILITY COMPANY FOR THEIR LOCATIONS.
2. MAILBOX PADS SHALL CLEAR EXISTING UTILITY BOXES.
3. MAINTAIN UTILITIES SEPARATION DURING BACKFILLING.

MULTI-UTILITY APPROVAL BY

SAN JUAN WATER DISTRICT
PCWA
PACIFIC BELL
CATV
PG&E

CONTACT YOUR LOCAL UTILITY OFFICE FOR ADDITIONAL SPECIFIC LAYOUT AND STANDARDS INFORMATION



NO	DATE	REVISIONS	APP	BY

TYPICAL UTILITY SERVICE BOX CONFIGURATIONS IN SUBDIVISIONS

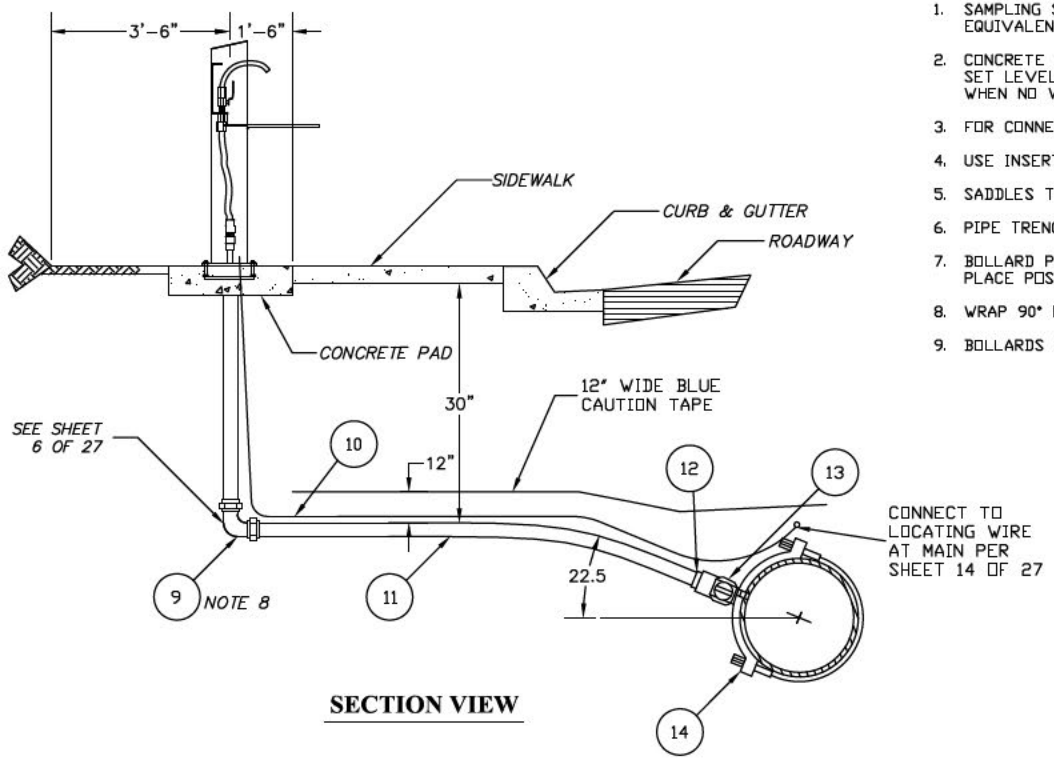
SAN JUAN WATER DISTRICT

APPROVED

SCALE: NTS | PRINT DATE: 04/17/07 | DETAIL NO: SHT 26 OF 27

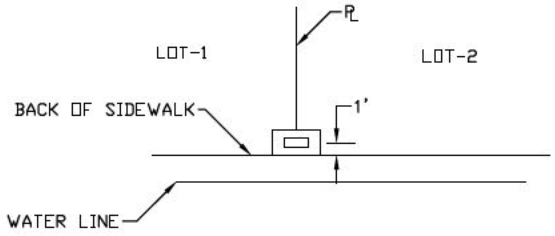
NOTES:

1. SAMPLING STATION SHALL BE A PLACER WATERWORKS MODEL PW/TRS-B OR DISTRICT APPROVED EQUIVALENT.
2. CONCRETE PAD FOR SAMPLING STATION SHALL BE 24" SQUARE AND 8" THICK. THE PAD SHALL BE SET LEVEL AND PLACED ADJACENT TO SIDEWALK, OR PLACED 5 FEET FROM EDGE OF PAVEMENT WHEN NO WALK EXISTS.
3. FOR CONNECTION TO MAIN SEE DISTRIBUTION MAIN SERVICE CONNECTIONS 1-IN ON DETAIL SHEET 7.
4. USE INSERT STIFFENER, ITEM 12 IN SCHEDULE OF MATERIALS, FOR EACH PACK JOINT.
5. SADDLES TO BE INSTALLED MIN. 18" FROM PIPE COUPLING OR ADJACENT SADDLES.
6. PIPE TRENCHING DETAILS SEE SHEET 11.
7. BOLLARD POSTS ARE REQUIRED WHERE SAMPLING STATIONS ARE LESS THAN 5' FROM BACK OF CURB. PLACE POSTS 5' APART AND 12" IN FRONT OF STATION. SEE SHEET 2 OF 27 FOR BOLLARD SPECS.
8. WRAP 90° ELL WITH 3-MIL POLYTAPE.
9. BOLLARDS MAY BE REQUIRED BY DISTRICT PER FIELD DIRECTION IN TRAFFIC HAZARD AREAS.

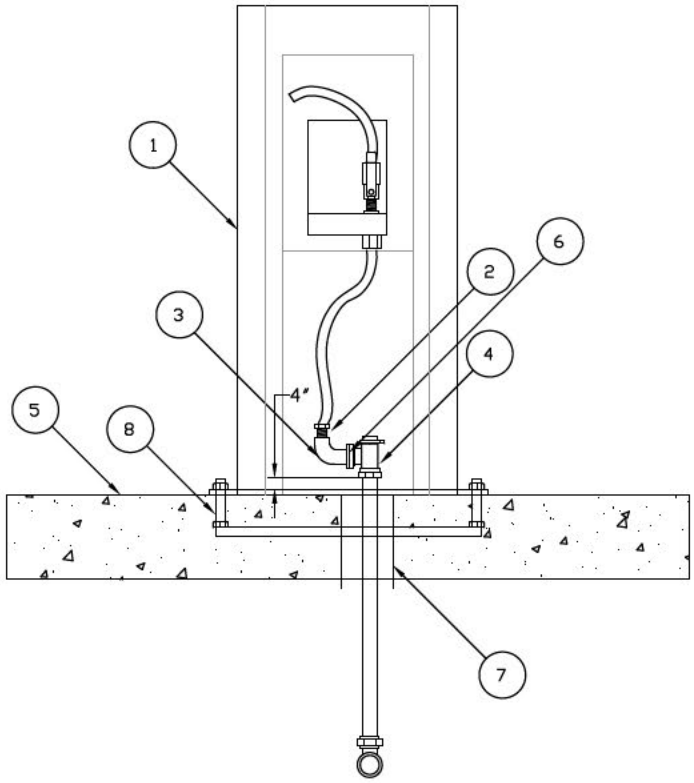


SECTION VIEW

MATERIALS – LIST	
ITEM	DESCRIPTION
1	PLACER WATER WORKS PW/TRS-B SAMPLING STATION
2	1" BRASS NIPPLE
3	1" BRASS STREET 90° ELL
4	1" ANGLE METER VALVE – FORD KV63-444K
5	24" x 24" x 8" CONCRETE SLAB
6	1½" x 1" BRASS BUSHING
7	4" PVC SLEEVE
8	CONCRETE EMBED KIT – PW/WSE
9	90° ELL – FORD L-66-44
10	10 GA COPPER(INSULATED) LOCATING WIRE
11	1" SERVICE LINE – POLYETHYLENE TUBE, IPS
12	INSERT – FORD 72
13	CORPORATION STOP – FORD F-FB1101
14	SERVICE SADDLE DIP & ACP – JONES 979 C-900 PVC – JONES 996



PLAN VIEW - RECOMMENDED PLACEMENT



FRONT VIEW

NO	DATE	REVISIONS	APP	BY

SAMPLE STATION INSTALLATION

SAN JUAN WATER DISTRICT

APPROVED

SCALE: NTS | PRINT DATE: 07/13/07 | DETAIL NO: SHT 27 OF 27