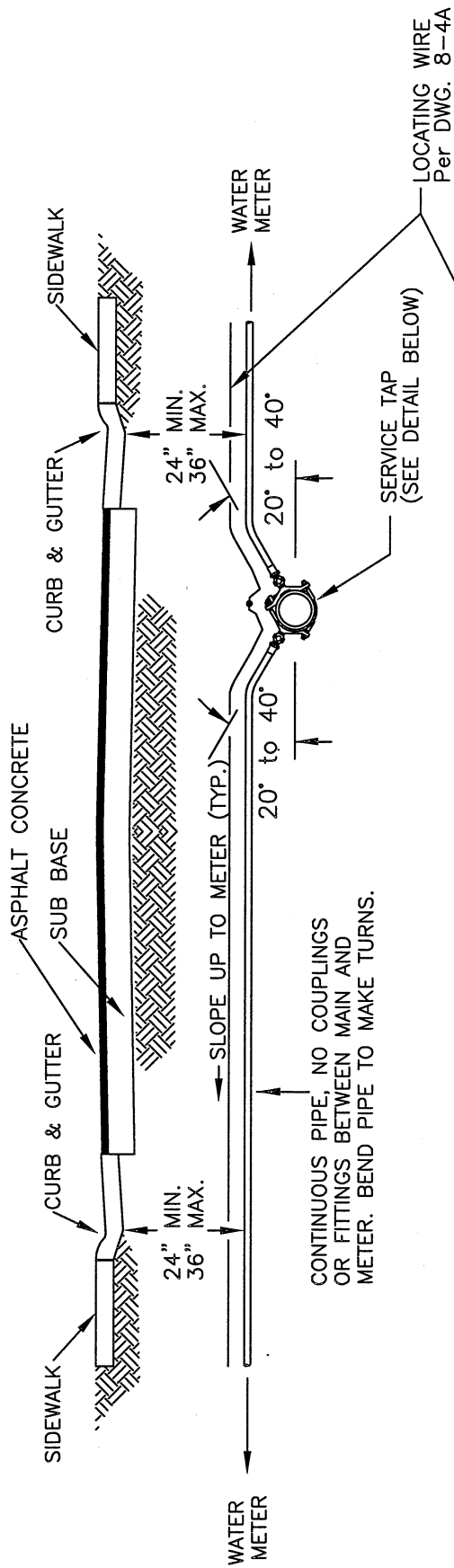


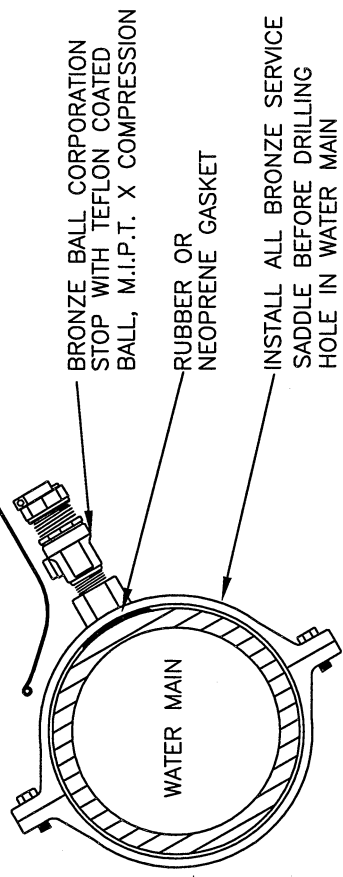
DRAWING NUMBER	TITLE
8-1	1"-2" WATER SERVICE INSTALLATION (8/13)
8-2A	FIRE HYDRANT INSTALLATION WATER MAIN IN STREET (8/13)
8-2B	FIRE HYDRANT INSTALLATION WATER MAIN NOT IN ROADWAY (8/13)
8-3A	THRUST BLOCK BEARING AREA (8/13)
8-3B	PIPE RESTRAINED LENGTH (11/15)
8-4A	LOCATING WIRE FOR WATER MAINS AND SERVICES (8/13)
8-4B	LOCATING WIRE STATION (8/13)
8-5	VALVE BOX INSTALLATION AND OPERATING NUT EXTENSION (8/13)
8-6A-1	1.5" RESIDENTIAL WATER SERVICE WITH 1" WATER METER (10/13)
8-6B	1-1/2" OR 2" COMMERCIAL METERED WATER SERVICE (11/15)
8-6C	3" TO 6" WATER SERVICE & METER INSTALLATION (11/15)
8-7	FIRE PROTECTION DETAIL (11/15)
8-8A	REDUCED PRESSURE BACKFLOW PREVENTER 1" TO 2" (11/15)
8-8B	REDUCED PRESSURE BACKFLOW PREVENTER 3" AND LARGER (11/15)
8-8C	DOUBLE CHECK DETECTOR OR RP PRINCIPLE DETECTOR 6" AND LARGER (11/15)
8-9A	MAXIMUM DEFLECTION FOR DUCTILE IRON PIPE (8/13)
8-9B	MAXIMUM DEFLECTION FOR PVC PIPE (8/13)
8-10	UTILITY CROSSING (11/15)
8-11	UTILITY CROSSING UNDER EXISTING WATER MAIN (11/15)
8-12	TEMPORARY BLOW OFF ASSEMBLY (8/13)
8-13A	4" BLOW OFF ASSEMBLY AT END OF MAIN (8/13)
8-13B	4" BLOW OFF ASSEMBLY AT END OF CUL-DE-SAC (8/13)
8-13C	4" IN-LINE BLOW-OFF ASSEMBLY (8/13)
8-14A	1" COMBINATION AIR/VACUUM VALVE (8/13)
8-14B	2" COMBINATION AIR/VACUUM VALVE (8/13)
8-15	WATER MAIN CUT-IN (11/15)
8-16	RECYCLED WATER SIGN (8/13)
8-17	TRENCH DETAIL (8/13)
8-18	TRANSITION SLEEVE (11/15)
8-19	TYPICAL WELL SITE (11/15)



CONTINUOUS PIPE, NO COUPLINGS OR FITTINGS BETWEEN MAIN AND METER. BEND PIPE TO MAKE TURNS.

NOTES:

1. CORPORATION STOP, METER CURB STOP AND WATER SERVICE LINE SHALL BE THE SAME SIZE.
2. SERVICE SADDLES SHALL BE A BRONZE SINGLE WIDE STRAP FOR PVC PIPE AND A BRONZE DOUBLE STRAP FOR DUCTILE IRON PIPE. BRONZE 'U' BOLTS MAY BE USED ON CAST IRON AND DUCTILE IRON WATER MAINS.
3. SERVICE SADDLES, CORPORATION STOPS, COUPLING NUTS, BOLTS, AND ALL APPURTENANCES SHALL BE BRONZE.
4. SERVICE TAP SHALL BE MADE BETWEEN 20 DEGREES TO 40 DEGREES ABOVE THE SPRING LINE OF THE PIPE.
5. SERVICE TAPS SHALL BE SPACED A MINIMUM OF 18" APART ON THE WATER MAIN AND SHALL BE A MINIMUM OF 24" FROM PIPE JOINTS.
6. INSULATED LOCATING WIRE SHALL BE PROVIDED ON ALL SERVICE LINES, PER DRAWING 8-4A. WIRE SHALL BE CONNECTED TO LOCATING WIRE ALONG WATER MAIN FOR CONTINUITY.
7. ALL BURIED METAL SHALL BE ENCASED WITH 8 MIL POLYETHYLENE SO THAT NO SOIL IS IN CONTACT WITH METAL.



SERVICE TAP
DETAIL

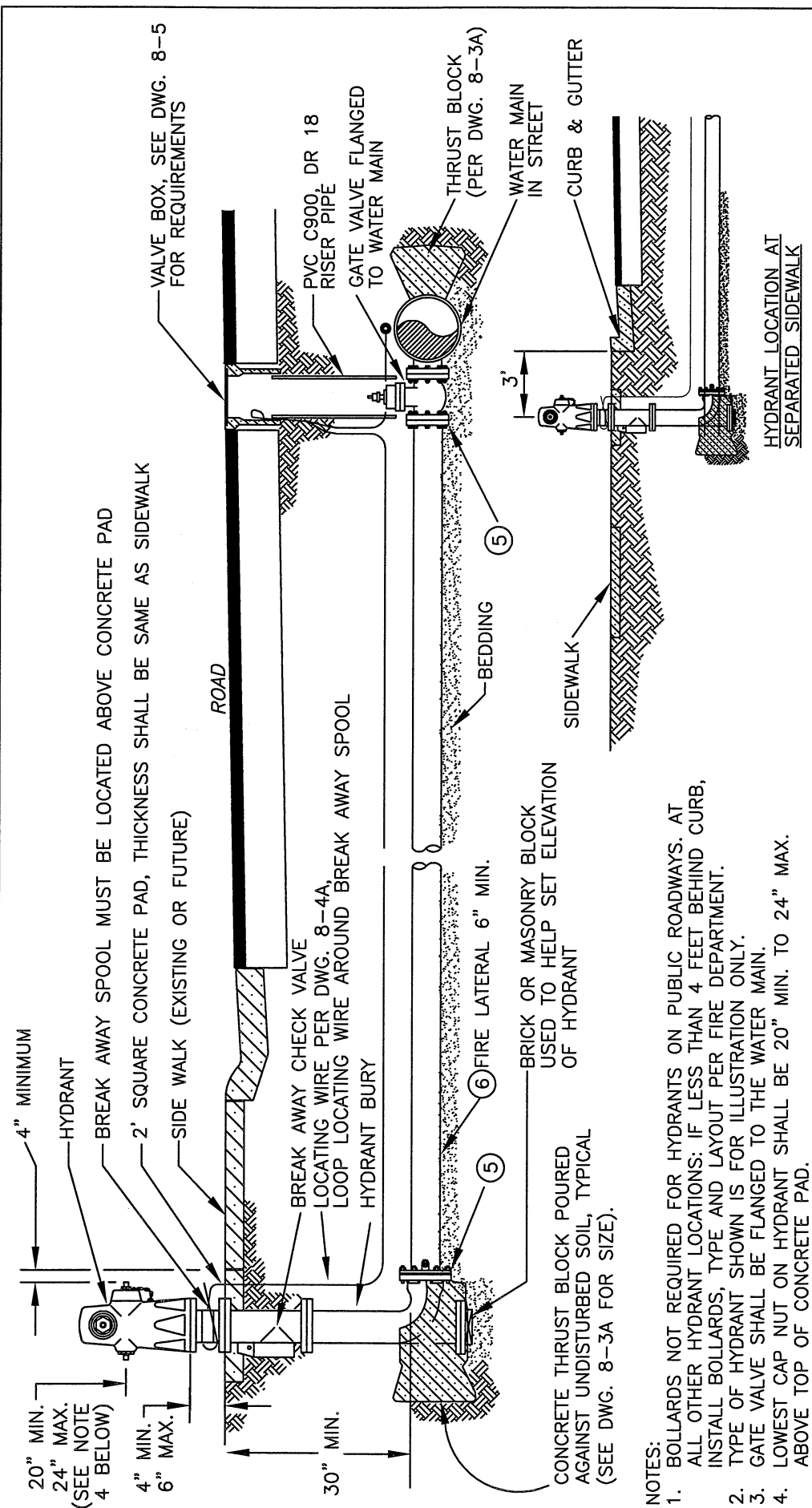
SACRAMENTO COUNTY
MUNICIPAL SERVICES AGENCY

**1"-2" WATER SERVICE
INSTALLATION**

Michael P. Peterson

DIRECTOR, DEPARTMENT OF WATER RESOURCES

SCALE: NONE
DATE: 8/13



SACRAMENTO COUNTY
MUNICIPAL SERVICES AGENCY

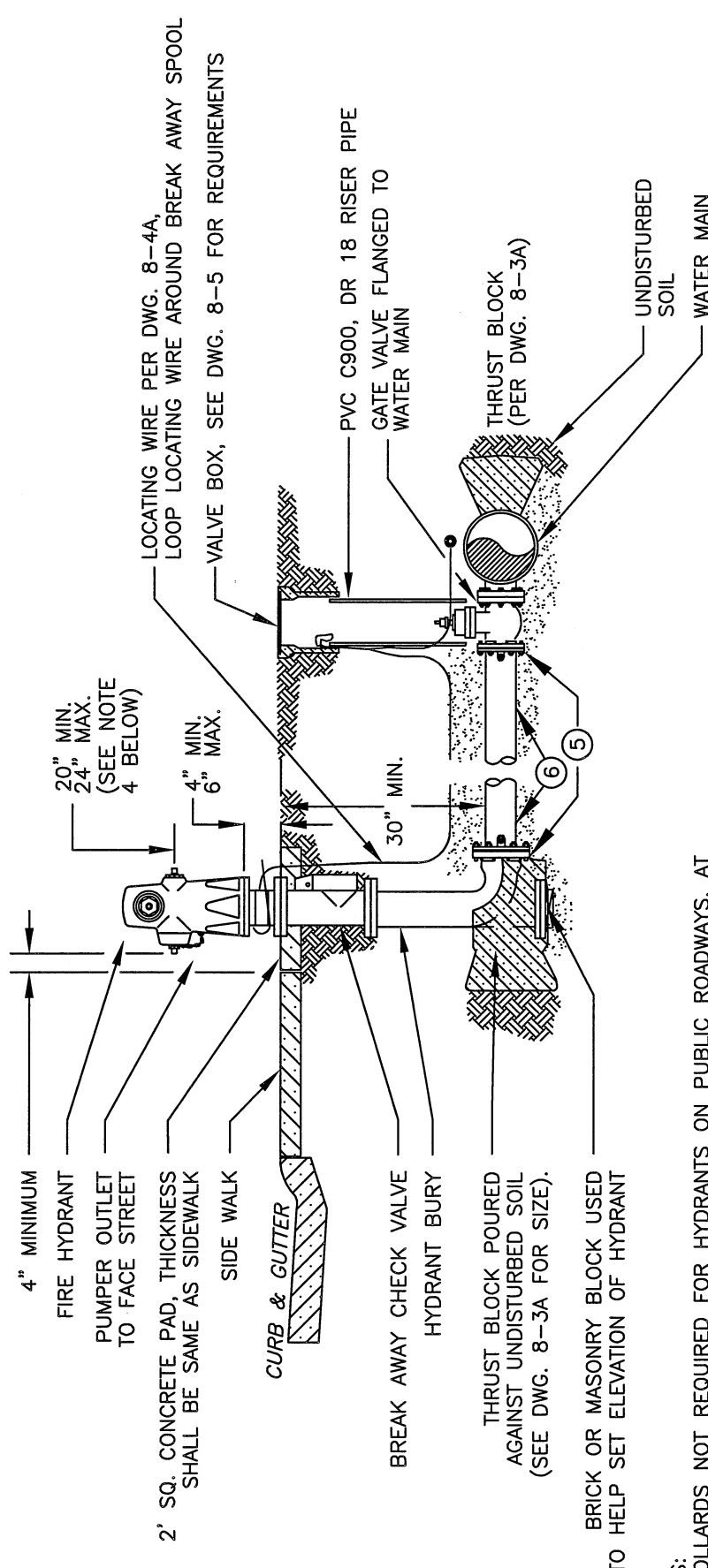
**FIRE HYDRANT
INSTALLATION
WATER MAIN IN STREET**

SCALE: NONE
DATE: 8/13

8-2A

Michael Peterson
DIRECTOR, DEPARTMENT OF WATER RESOURCES

- NOTES:
- BOLLARDS NOT REQUIRED FOR HYDRANTS ON PUBLIC ROADWAYS. AT ALL OTHER HYDRANT LOCATIONS: IF LESS THAN 4 FEET BEHIND CURB, INSTALL BOLLARDS, TYPE AND LAYOUT PER FIRE DEPARTMENT.
 - TYPE OF HYDRANT SHOWN IS FOR ILLUSTRATION ONLY.
 - GATE VALVE SHALL BE FLANGED TO THE WATER MAIN.
 - LOWEST CAP NUT ON HYDRANT SHALL BE 20" MIN. TO 24" MAX. ABOVE TOP OF CONCRETE PAD.
 - THESE JOINTS MAY BE FLANGED OR RESTRAINED MECHANICAL JOINT WITH AN APPROVED RESTRAINED DEVICE.
 - FIRE LATERAL: RESTRAIN ALL JOINTS. DUCTILE IRON PIPE, C900 PVC PIPE ALLOWED IF RUN IS LESS THAN ONE PIPE LENGTH AND INSTALLED WITHOUT PVC-TO-PVC JOINTS.
 - ALL BURIED METAL SHALL BE ENCASED WITH 8 MIL POLYETHYLENE SO THAT NO SOIL IS IN CONTACT WITH METAL.



- NOTES:
1. BOLLARDS NOT REQUIRED FOR HYDRANTS ON PUBLIC ROADWAYS. AT ALL OTHER HYDRANT LOCATIONS: IF LESS THAN 4 FEET BEHIND CURB, INSTALL BOLLARDS, TYPE AND LAYOUT PER FIRE DEPARTMENT.
 2. TYPE OF HYDRANT SHOWN IS FOR ILLUSTRATION ONLY.
 3. GATE VALVE SHALL BE FLANGED TO THE WATER MAIN.
 4. LOWEST CAP NUT ON HYDRANT SHALL BE 20" MIN. TO 24" MAX. ABOVE TOP OF CONCRETE PAD.
 5. THESE JOINTS MAY BE FLANGED OR RESTRAINED MECHANICAL JOINT WITH AN APPROVED RESTRAINED DEVICE.
 6. FIRE LATERAL: RESTRAIN ALL JOINTS. DUCTILE IRON PIPE; C900 PVC PIPE ALLOWED IF RUN IS LESS THAN ONE PIPE LENGTH AND INSTALLED WITHOUT PVC-TO-PVC JOINTS.
 7. ALL BURIED METAL SHALL BE ENCASED WITH 8 MIL POLYETHYLENE SO THAT NO SOIL IS IN CONTACT WITH METAL.

SACRAMENTO COUNTY
MUNICIPAL SERVICES AGENCY

**FIRE HYDRANT
INSTALLATION**

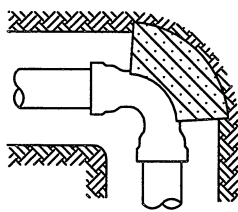
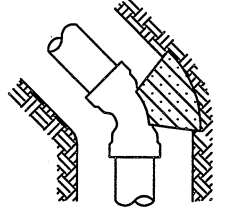
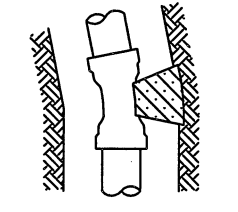
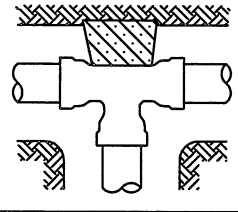
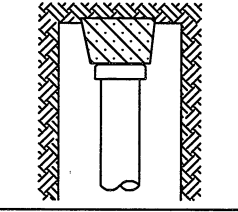
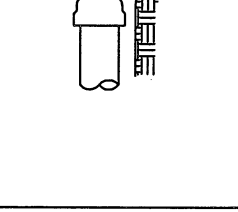
WATER MAIN NOT IN ROADWAY

SCALE: NONE
DATE: 8/13

8-2B

Michael Peterson
DIRECTOR, DEPARTMENT OF WATER RESOURCES

REQUIRED BEARING AREA IN TOTAL SQUARE FEET

TYPE OF FITTING	90° BEND	45° BEND	11-1/4" BEND 22-1/2" BEND	TEE	DEAD END	VERTICAL DOWN BEND
TYPICAL INSTALLATION						
	4"	2	1	2	2	THRUST BLOCKS NOT ALLOWED. USE RESTRAINED JOINTS WITH RESTRAINED LENGTH PER PLANS AND WATER NOTES.
	6"	4	1	3	3	
	8"	7	2	5	5	
	10"	12	3	8	8	
	12"	16	5	12	12	
SIZE OF PIPE						

SEE NOTE 5

NOTES

- THRUST BLOCKS SHALL BE CONSTRUCTED OF CLASS "B" CONCRETE.
- BEARING AREAS GIVEN ARE FOR TEST PRESSURES OF 150 PSI IN SOIL WITH MINIMUM 2,000 PSF BEARING CAPACITY. IF TEST PRESSURE IS HIGHER OR SOIL BEARING CAPACITY IS LOWER, THRUST BLOCK SIZE SHALL BE RE-DESIGNED & APPROVED BY THE WATER UTILITY.
- THRUST BLOCKS SHALL BE POURED AGAINST UNDISTURBED SOIL. IF THIS CANNOT BE DONE, USE RESTRAINED JOINTS TO RESIST THRUST OVER RESTRAINED LENGTHS APPROVED BY THE WATER UTILITY.
- PIPE JOINTS SHALL BE KEPT CLEAR OF CONCRETE.
- FOR DEAD ENDS: INSTALL TEMPORARY BLOW OFF PER DWG. 8-12.

SACRAMENTO COUNTY
MUNICIPAL SERVICES AGENCY

**THRUST BLOCK
BEARING AREA**

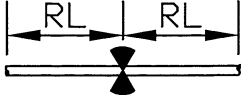
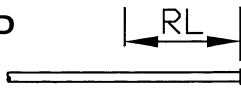
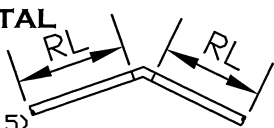
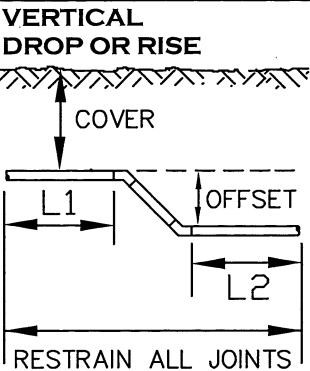
SCALE: NONE
DATE: 8/13

DIRECTOR, DEPARTMENT OF WATER RESOURCES

Michael J. Peterson

8-3A


RESTRAINED LENGTH IN FEET

PIPE CONFIGURATION	30" COVER AND GREATER								60" COVER AND GREATER										
	DIP				PVC				DIP				PVC						
	6"	8"	10"	12"	6"	8"	10"	12"	6"	8"	10"	12"	6"	8"	10"	12"			
RL = RESTRAINED LENGTH																			
NA = PVC PIPE NOT ALLOWED IN RESTRAINED LENGTH, USE ONLY DUCTILE IRON.																			
IN LINE VALVE 	46	59	71	83	NA				24	31	38	45	NA						
DEAD END W/O THRUST BLOCK (SEE NOTE 5) 	69	88	10	12	NA				36	47	57	67	NA						
HORIZONTAL BEND  (SEE NOTE 5)	11.25°	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6		
	22.5°	6	6	7	8	6	6	7	8	6	6	6	6	6	6	6	6		
	45°	9	12	14	16	9	12	14	16	6	6	7	9	6	6	7	9		
VERTICAL DROP OR RISE  RESTRAIN ALL JOINTS	OFFSET = 1.5-3.4 FT.	11.25°	L1	10	14	17	21	10	14	17	NA				6	6	7	9	
			L2	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	
		22.5°	L1	25	33	41	48	NA				12	17	21	25	12	17	NA	
			L2	7	9	11	13	NA				6	6	6	6	6	6	NA	
	OFFSET ≥ 3.5 FT.	11.25°	L1	7	9	11	12	NA				6	6	6	7	NA			
			L2	6	6	6	6	NA				6	6	6	6	NA			
		22.5°	L1	23	31	38	45	NA				10	14	18	22	10	14	18	NA
			L2	6	7	9	11	NA				6	6	6	6	6	6	6	NA
	TEE, CROSS & ASSOCIATED VALVES	PIPE RESTRAINT REQUIRED. SEE RESTRAINED LENGTHS SHOWN ON PLANS. (SEE NOTE 2)																	

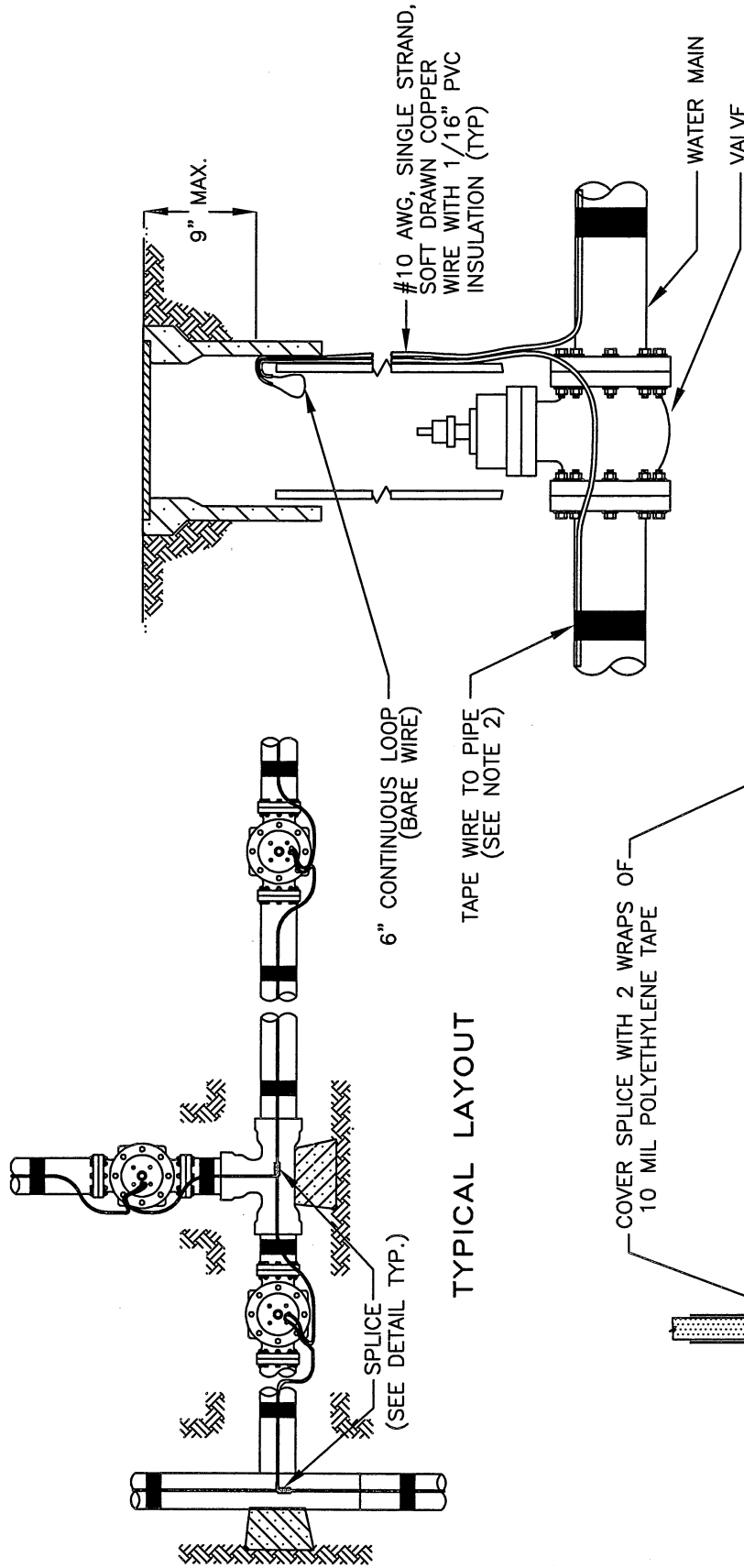
***** RESTRAINED LENGTHS SHOWN ON THE PLANS SUPERSEDE THIS TABLE *****

NOTES:

1. ALL JOINTS WITHIN THE RESTRAINED LENGTH SHALL BE RESTRAINED. NO JOINTS WITHIN 6 FEET OF FITTINGS, UNLESS OTHERWISE SPECIFIED.
2. RESTRAINED LENGTHS ARE REQUIRED AT TEES AND CROSSES. IF NOT SPECIFIED ON THE PLANS, RESTRAINED LENGTHS SHALL BE DESIGNED BY THE CIVIL ENGINEER OF RECORD AND APPROVED BY THE WATER UTILITY.
3. RESTRAINING DEVICES FOR MJ'S: FOR DUCTILE IRON USE EBAA MEGALUG 1100, STAR PIPE PRODUCTS STARGRIP 3000, OR SIGMA ONE-LOK SLDE; FOR PVC PIPE USE EBAA 2000PV, STAR PIPE PRODUCTS STARGRIP 4000, OR SIGMA ONE-LOC SLCE.
4. RESTRAINING DEVICES FOR PUSH-ON JOINTS: FOR DUCTILE IRON USE U.S. PIPE FIELD LOK GASKETS, U.S. PIPE TR FLEX PIPE, OR APPROVED EQUAL; RESTRAINED PVC PUSH-ON JOINTS NOT ALLOWED, USE DUCTILE IRON PIPE ONLY FOR RESTRAINED PUSH-ON JOINTS.
5. FOR DEAD ENDS AND HORIZONTAL BENDS ONLY: IF A THRUST BLOCK IS INSTALLED BEHIND THE FITTING IN ACCORDANCE WITH DWG. 8-3A, RESTRAINED JOINTS NOT REQUIRED UNLESS OTHERWISE SPECIFIED.
6. RESTRAINED LENGTHS ARE BASED ON 150 PSI TEST PRESSURE. IF HIGHER PRESSURES OR HIGHER SURGES ARE ANTICIPATED, THIS TABLE SHALL NOT APPLY AND RESTRAINED LENGTHS SHALL BE DESIGNED BY THE CIVIL ENGINEER OF RECORD AND APPROVED BY THE WATER UTILITY.


 DIRECTOR, DEPARTMENT OF WATER RESOURCES

SACRAMENTO COUNTY MUNICIPAL SERVICES AGENCY	
PIPE RESTRAINED LENGTH	
SCALE: NONE DATE: 11/15	8-3B



NOTES:

1. WIRE SHALL BE CONTINUOUS, EXCEPT WHERE SPLICES ARE REQUIRED AT TEES, CROSSES, AND CONNECTIONS TO EXISTING LOCATING WIRES.
2. LOCATING WIRE SHALL BE LAID ON TOP OF THE WATER MAIN, AND SHALL BE TAPED TO IT OR THE POLYETHYLENE ENCASUREMENT AT 10' INTERVALS AND TAPED AT ALL FITTINGS. TAPE SHALL BE 10 MIL POLYETHYLENE. CONTINUITY TESTS SHALL BE PERFORMED ON EACH SPlice PRIOR TO BACKFILL, AND ON THE FULL WIRE SYSTEM AFTER IT IS FINISHED.
4. **ALL SPLICES SHALL BE SOLDERED AND TAPED.**

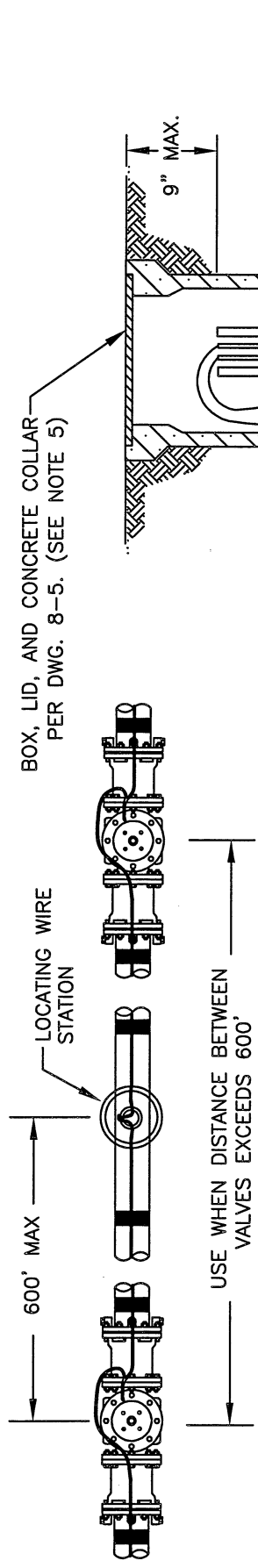
SPLICE DETAIL (TEE SPlice)

SPLICE DETAIL (BUTT SPlice)

COVER SPlice WITH 2 WRAPS OF 10 MIL POLYETHYLENE TAPE

SACRAMENTO COUNTY MUNICIPAL SERVICES AGENCY	
LOCATING WIRE FOR WATER MAINS AND SERVICES	
SCALE: NONE DATE: 8/13	8-4A

Michael J. Peterson
DIRECTOR, DEPARTMENT OF WATER RESOURCES



TYPICAL LAYOUT

BOX, LID, AND CONCRETE COLLAR
PER DWG. 8-5. (SEE NOTE 5)

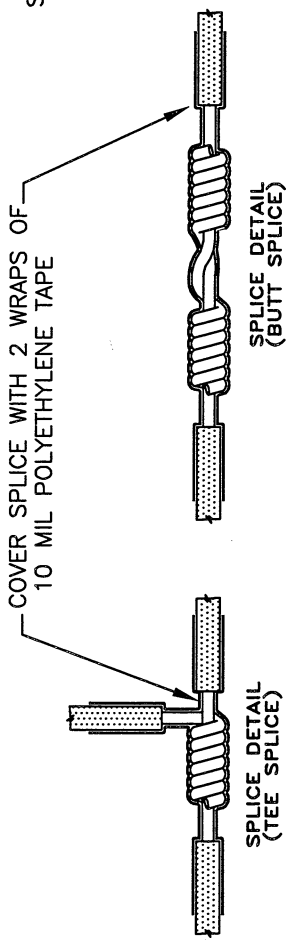
6" CONTINUOUS LOOP
(BARE WIRE)

2" PVC SCHEDULE 80,
SEAL TOP WITH DUCT SEAL

#10 AWG, SINGLE STRAND,
SOFT DRAWN COPPER
WIRE WITH 1/16" PVC
INSULATION (TYP)

WATER MAIN

9" MAX.



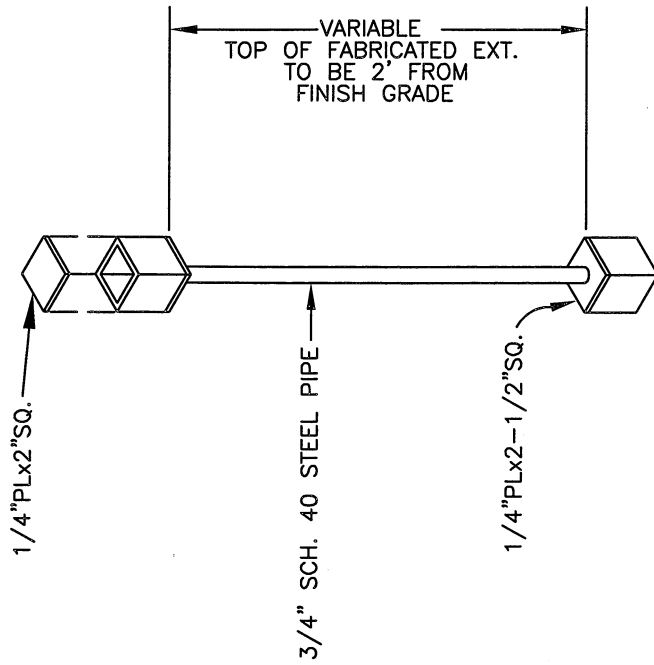
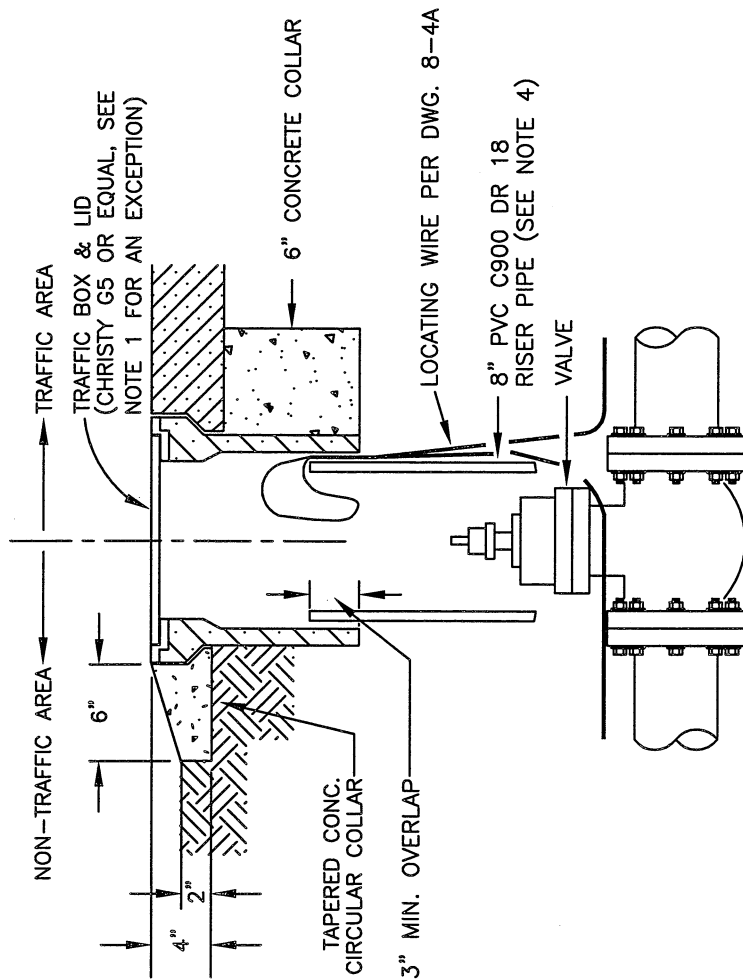
NOTES:

1. WIRE SHALL BE CONTINUOUS, EXCEPT WHERE SPLICES ARE REQUIRED AT TEES AND CROSSES.
2. LOCATING WIRE SHALL BE LAID ON TOP OF THE WATER MAIN, AND SHALL BE TAPED TO IT OR THE POLYETHYLENE ENCASMENT AT 10' INTERVALS AND TAPED AT ALL FITTINGS. TAPE SHALL BE 10 MIL POLYETHYLENE.
3. CONTINUITY TESTS SHALL BE PERFORMED ON EACH SPLICE PRIOR TO BACKFILL, AND ON THE FULL WIRE SYSTEM AFTER IT IS FINISHED.
4. **ALL SPLICES SHALL BE SOLDERED AND TAPED.**
5. LABELING AND COATING OF BOX AND LID SHALL COMPLY WITH THE REQUIREMENTS OF DWG. 8-5.

LOCATING WIRE STATION

SACRAMENTO COUNTY MUNICIPAL SERVICES AGENCY
LOCATING WIRE STATION
SCALE: NONE DATE: 8/13
8-4B

Michael J. Peters
DIRECTOR, DEPARTMENT OF WATER RESOURCES



TRAFFIC VALVE BOX

NOTES:

1. BOXES IN MAJOR ROADS (ULTIMATE PLANNED WIDTH ≥ 70 FT BOC TO BOC) SHALL BE CHRISTY G5VP BOLT-DOWN LID AND BOX, OR EQUAL.
2. VALVE BOX AND RISER SHALL BE SET PLUMB AND CENTERED OVER WATER VALVE NUT.
3. SET VALVE BOX TO FINAL FINISH GRADE. IN AREAS WHERE FINISH GRADE HAS NOT BEEN DEFINED, PLACE 4"x4" LOCATING POST WITHIN 1 FOOT OF VALVE BOX. POST SHALL BE 6 FEET IN LENGTH AND BURIED 3 FEET. PAINT POST BLUE FOR POTABLE WATER, PURPLE FOR RECYCLED AND NONPOTABLE WATER, GREEN FOR RAW WATER.
4. RISER PIPE SHALL BE BLUE OR WHITE FOR POTABLE WATER, WHITE FOR RAW WATER, OR PURPLE FOR RECYCLED AND NONPOTABLE WATER. FOR RAW WATER ONLY: PAINT BOX INTERIOR & TOP 1 FT. OF RISER GREEN.
5. LIDS SHALL BE LABELED WITH CAST OR BEAD WELDED LETTERS: "WATER" FOR POTABLE, "RECYCLED WATER" FOR RECYCLED AND NONPOTABLE WATER, "RAW WATER" FOR RAW WATER.
6. RECYCLED AND NONPOTABLE WATER: TOP OF FRAME AND COVER SHALL BE COATED PURPLE PRIOR TO INSTALLATION PER STANDARD SPECIFICATIONS.
7. LIDS SHALL NOT BE INTERCHANGED INTO DIFFERENT MAKE OR MODEL BOXES.

VALVE OPERATING NUT EXTENSION

REQUIRED WHERE VALVE NUT IS IN EXCESS OF 10 FEET BELOW FINISH GRADE.

SACRAMENTO COUNTY
MUNICIPAL SERVICES AGENCY

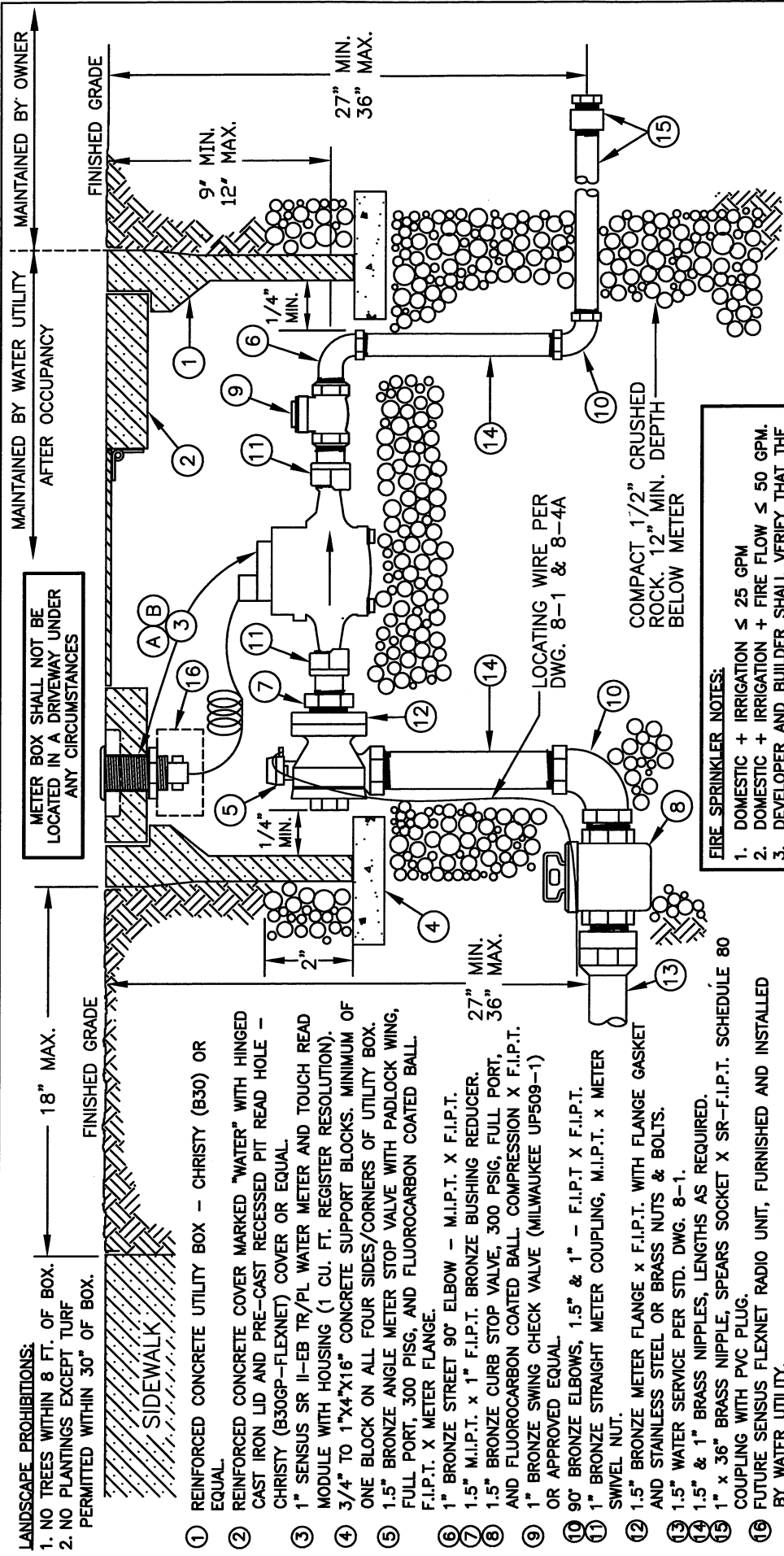
**VALVE BOX INSTALLATION
AND OPERATING NUT
EXTENSION**

Michael Peterson

SCALE: NONE
DATE: 8/13

DIRECTOR, DEPARTMENT OF WATER RESOURCES

8-5



METER BOX SHALL NOT BE LOCATED IN A DRIVEWAY UNDER ANY CIRCUMSTANCES

MANTAINED BY WATER UTILITY AFTER OCCUPANCY

MANTAINED BY OWNER

LANDSCAPE PROHIBITIONS:
 1. NO TREES WITHIN 8 FT. OF BOX.
 2. NO PLANTINGS EXCEPT TURF PERMITTED WITHIN 30" OF BOX.

18" MAX. FINISHED GRADE
 SIDEWALK
 9" MIN. 12" MAX.
 27" MIN. 36" MAX.
 1/4" MIN.
 1/4" MIN.
 1/4" MIN.
 2" MIN. 36" MAX.
 LOCATING WIRE PER DWG. 8-1 & 8-4A
 COMPACT 1/2" CRUSHED ROCK. 12" MIN. DEPTH BELOW METER

- ① REINFORCED CONCRETE UTILITY BOX - CHRISTY (B30) OR EQUAL.
- ② REINFORCED CONCRETE COVER MARKED "WATER" WITH HINGED CAST IRON LID AND PRE-CAST RECESSED PIT READ HOLE - CHRISTY (B30GP-FLEXNET) COVER OR EQUAL.
- ③ 1" SENSUS SR II-EB TR/PL WATER METER AND TOUCH READ MODULE WITH HOUSING (1 CU. FT. REGISTER RESOLUTION), 3/4" TO 1"x4"x16" CONCRETE SUPPORT BLOCKS. MINIMUM OF ONE BLOCK ON ALL FOUR SIDES/CORNERS OF UTILITY BOX.
- ④ 1.5" BRONZE ANGLE METER STOP VALVE WITH PADLOCK WING, FULL PORT, 300 PSIG, AND FLUOROCARBON COATED BALL. F.I.P.T. X METER FLANGE.
- ⑤ 1" BRONZE STREET 90° ELBOW - M.I.P.T. X F.I.P.T.
- ⑥ 1.5" M.I.P.T. X 1" F.I.P.T. BRONZE BUSHING REDUCER. 27" MIN. 36" MAX.
- ⑦ 1.5" BRONZE CURB STOP VALVE, 300 PSIG, FULL PORT, AND FLUOROCARBON COATED BALL. COMPRESSION X F.I.P.T.
- ⑧ 1" BRONZE SWING CHECK VALVE (MILWAUKEE UP509-1) OR APPROVED EQUAL.
- ⑨ 90° BRONZE ELBOWS, 1.5" & 1" - F.I.P.T. X F.I.P.T.
- ⑩ 1" BRONZE STRAIGHT METER COUPLING, M.I.P.T. X METER SWIVEL NUT.
- ⑪ 1.5" BRONZE METER FLANGE X F.I.P.T. WITH FLANGE GASKET AND STAINLESS STEEL OR BRASS NUTS & BOLTS.
- ⑫ 1.5" WATER SERVICE PER STD. DWG. 8-1.
- ⑬ 1.5" & 1" BRASS NIPPLES, LENGTHS AS REQUIRED.
- ⑭ 1" x 36" BRASS NIPPLE, SPEARS SOCKET X SR-F.I.P.T. SCHEDULE 80 COUPLING WITH PVC PLUG.
- ⑮ FUTURE SENSUS FLEXNET RADIO UNIT, FURNISHED AND INSTALLED BY WATER UTILITY.

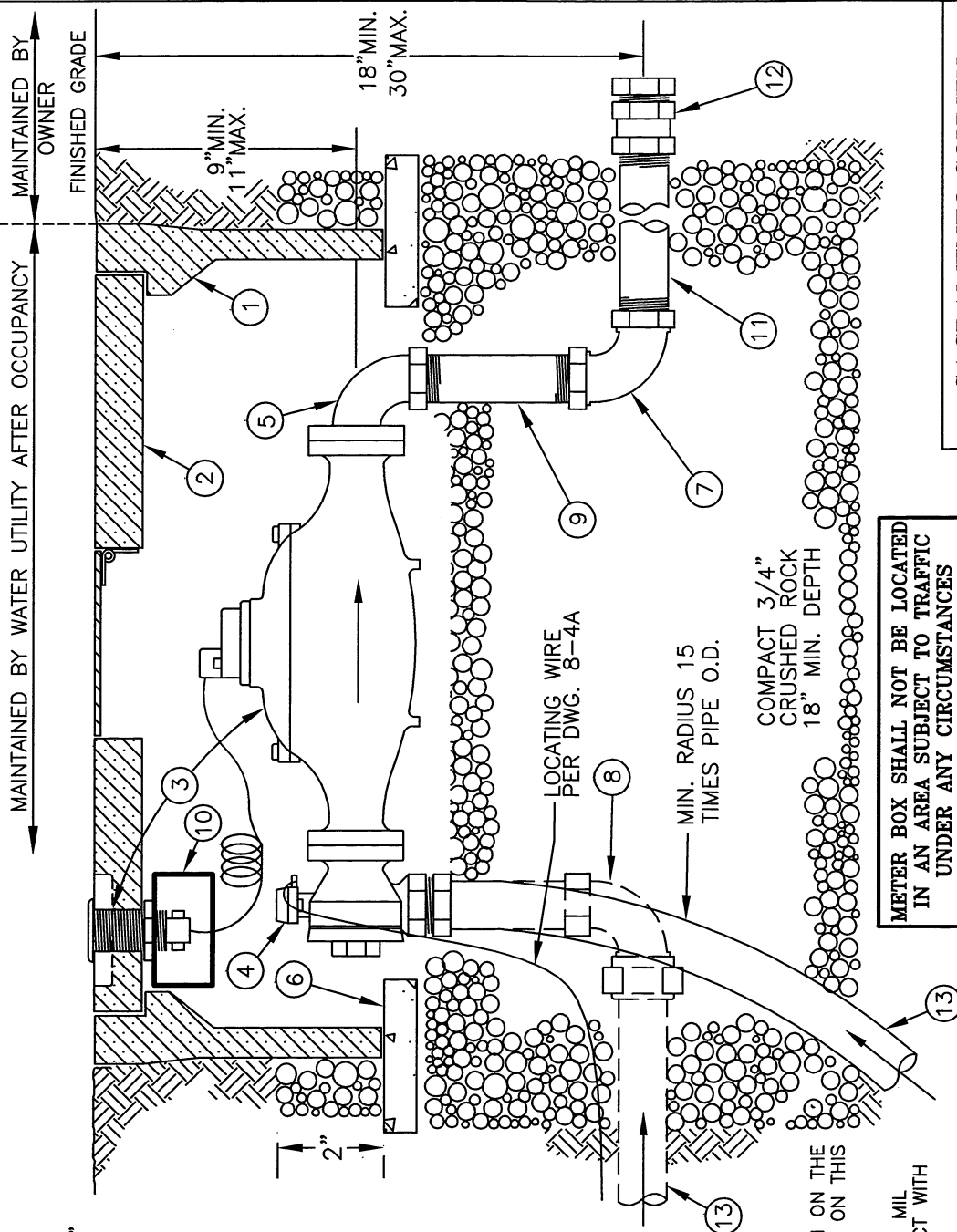
- NOTES:**
- A. THE CONTRACTOR INSTALLING FACILITIES SHOWN ON THE IMPROVEMENT PLANS SHALL INSTALL ALL ITEMS ON THIS DRAWING EXCEPT THAT A METER IDLER PIPE SHALL BE INSTALLED IN PLACE OF THE METER. IDLER PIPE MATERIAL SHALL BE BRASS, GALV. STEEL, OR SCHED. 80 PVC AND SUPPLIED BY A WATER MATERIAL SUPPLIER. (SEE NOTE B)
 - B. THE HOME BUILDER SHALL INSTALL THE METER AND TOUCH READ MODULE. AS AN OPTION, THE IMPROVEMENT PLAN CONTRACTOR MAY INSTALL THE METER AND TOUCH READ MODULE.
 - C. ALL BURIED METAL SHALL BE ENCASED WITH 8 MIL. POLYETHYLENE SO THAT NO SOIL IS IN CONTACT WITH METAL.

FIRE SPRINKLER NOTES:

- 1. DOMESTIC + IRRIGATION ≤ 25 GPM
- 2. DOMESTIC + IRRIGATION + FIRE FLOW ≤ 50 GPM.
- 3. DEVELOPER AND BUILDER SHALL VERIFY THAT THE FLOW AND PRESSURE REQUIRED BY THEIR FIRE SPRINKLER DESIGN CAN BE DELIVERED BY THE WATER SYSTEM AND WATER SERVICE BASED ON THE WATER UTILITY'S LATEST MODELED PEAK-HOUR SCENARIO.
- 4. PASSIVE-PURGE SPRINKLER DESIGN MANDATORY.

SACRAMENTO COUNTY
 MUNICIPAL SERVICES AGENCY
**1.5" RESIDENTIAL
 WATER SERVICE WITH
 1" WATER METER**
 SCALE: NONE
 DATE: 12/15
8-6A-1

[Signature]
 DIRECTOR, DEPARTMENT OF WATER RESOURCES



- ① REINFORCED CONCRETE UTILITY BOX (CHRISTY B36) OR EQUAL.
- ② REINFORCED CONCRETE COVER MARKED "WATER" WITH A HINGED CAST IRON LID AND A PRE-CAST RECESSED PIT READ HOLE - (CHRISTY B36G-FLEXNET) OR EQUAL.
- ③ SENSUS OMNI C² TR/PL WATER METER AND TOUCH READ MODULE WITH HOUSING (1 CU. FT. REGISTER RESOLUTION).
- ④ FLANGED WINGED ANGLE METER STOP VALVE WITH TEFLON COATED BALL.
- ⑤ OVAL FLANGED 90° BRONZE ELBOW FITTING.
- ⑥ 3/4" TO 1"X4"X16" CONCRETE BLOCK TO HELP SUPPORT VALVE BOX, USE ONE BLOCK ON ALL FOUR SIDES OF METER IN THE SIDE OF THE UTILITY BOX WITH CONCRETE BLOCK.
- ⑦ BRONZE 90° ELBOW, THREADED.
- ⑧ BRONZE 90° ELBOW, THREADED OR COMPRESSION.
- ⑨ BRASS NIPPLE, LENGTH AS REQUIRED
- ⑩ FUTURE SENSUS FLEXNET RADIO UNIT, FURNISHED AND INSTALLED BY WATER UTILITY.
- ⑪ 36" BRASS NIPPLE.
- ⑫ BRASS COUPLING WITH BRASS M.I.P.T. PLUG.
- ⑬ WATER SERVICE LINE PER STD. DWG. 8-1, WITH TWO CONFIGURATION OPTIONS.

NOTES:

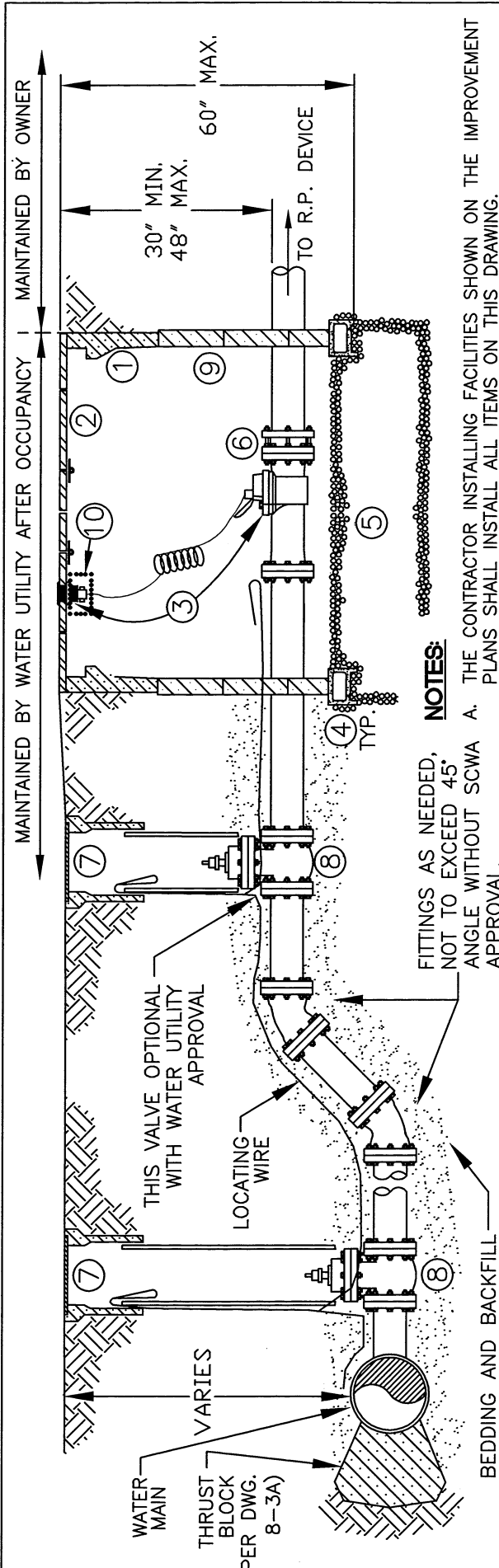
- A. THE CONTRACTOR INSTALLING FACILITIES SHOWN ON THE IMPROVEMENT PLANS SHALL INSTALL ALL ITEMS ON THIS DRAWING.
- B. ALL BURIED METAL SHALL BE ENCASED WITH 8 MIL POLYETHYLENE SO THAT NO SOIL IS IN CONTACT WITH METAL.
- C. RECYCLED AND NONPOTABLE SERVICES: BOX SHALL HAVE A PURPLE POLYETHYLENE FACE RING, READING LID SHALL BE LABELED "RECYCLED WATER" WITH BEAD WELDED OR ENGRAVED LETTERS, AND TOP OF THE COVER SHALL BE COATED PURPLE PER STANDARD SPECIFICATIONS.
- D. SIZE OF SERVICE LINE, PIPING, AND FITTINGS SHALL BE THE SAME SIZE AS METER.

METER BOX SHALL NOT BE LOCATED IN AN AREA SUBJECT TO TRAFFIC UNDER ANY CIRCUMSTANCES

SACRAMENTO COUNTY MUNICIPAL SERVICES AGENCY
1-1/2" OR 2" COMMERCIAL METERED WATER SERVICE
SCALE: NONE DATE: 11/15
8-6B

Michael P. [Signature]

DIRECTOR, DEPARTMENT OF WATER RESOURCES



NOTES:

- A. THE CONTRACTOR INSTALLING FACILITIES SHOWN ON THE IMPROVEMENT PLANS SHALL INSTALL ALL ITEMS ON THIS DRAWING.
- B. 4" TO 6" DIA. PIPE BETWEEN WATER MAIN AND METER SHALL BE DUCTILE IRON. 3" PIPE SHALL BE TYPE K COPPER OR DUCTILE IRON. JOINTS BETWEEN MAIN AND METER SHALL BE RESTRAINED. RESTRAINING DEVICES SHALL BE APPROVED BY WATER UTILITY.
- C. INSTALL LOCATING WIRE PER DWG. 8-4A.
- D. CONCRETE BLOCKS SHALL BE USED TO BLOCK ANY OPENING OR CUT-OUT PORTIONS OF THE METER BOX NOT UTILIZED (MINIMUM 1" THICK BLOCK).
- E. SIZE OF SERVICE LINE, PIPING, AND FITTINGS SHALL BE THE SAME SIZE AS METER.
- F. ALL BURIED METAL SHALL BE ENCASED WITH 8 MIL POLYETHYLENE SO THAT NO SOIL IS IN CONTACT WITH METAL.
- G. RECYCLED AND NONPOTABLE SERVICES: COVER SHALL BE LABELED "RECYCLED WATER" WITH BEAD WELDED LETTERS AND TOP OF COVER SHALL BE COATED PURPLE PER STANDARD SPECIFICATIONS.

- ① REINFORCED CONCRETE UTILITY BOX WITH EXTENSIONS (CHRISTY B48).
- ② 2 PIECE GALVANIZED STEEL CHECKER PLATE W/ TWO 10" ROUND SELF-CLOSING READING LIDS AND 1-3/4" HOLE FOR TOUCH READ MODULE IN ONE READING LID (CHRISTY B48-62G PIT READ COVER).
- ③ SENSUS OMNI C2 TR/PL METER AND TOUCH READ MODULE WITH HOUSING (1 CU. FT. REGISTER RESOLUTION).
- ④ CONCRETE BLOCKS SHALL BE PLACED ALONG THE ENTIRE PERIMETER TO SUPPORT BOX.
- ⑤ 3/4" CRUSHED ROCK, 12" TO 18" DEEP, COMPACTED.
- ⑥ FLANGED COUPLING ADAPTER, EPOXY COATED WITH STAINLESS STEEL HARDWARE.
- ⑦ VALVE BOX, SEE DWG. 8-5 FOR REQUIREMENTS.
- ⑧ GATE VALVE, BOTH ENDS FLANGED.
- ⑨ METER BOX EXTENSION (TYPICAL).
- ⑩ FUTURE SENSUS FLEXNET RADIO UNIT, FURNISHED AND INSTALLED BY WATER UTILITY.

METER BOX SHALL NOT BE LOCATED IN AN AREA SUBJECT TO TRAFFIC UNDER ANY CIRCUMSTANCES

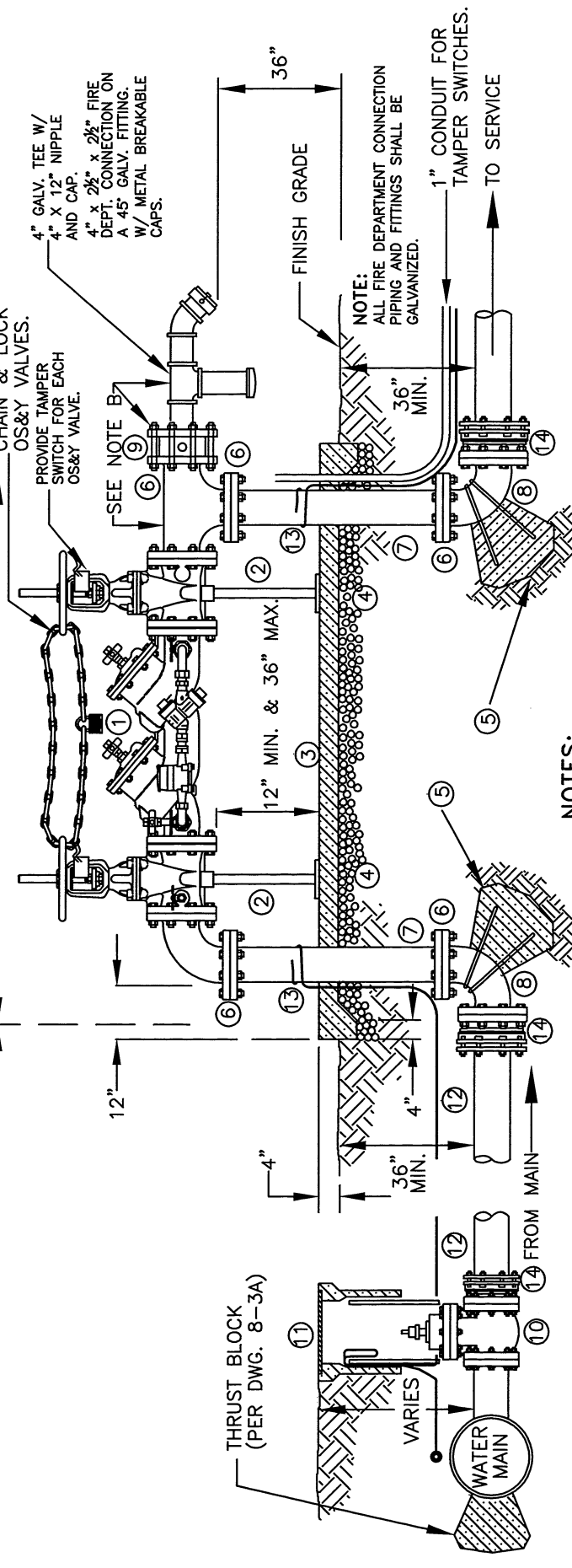
Michael B. Peter

DIRECTOR, DEPARTMENT OF WATER RESOURCES

SACRAMENTO COUNTY
 MUNICIPAL SERVICES AGENCY
3" TO 6" WATER SERVICE & METER INSTALLATION
 SCALE: NONE
 DATE: 11/15
8-6C

MAINTAINED BY WATER UTILITY AFTER OCCUPANCY

MAINTAINED BY OWNER (NOTE E)



NOTES:

- 1 DOUBLE CHECK DETECTOR ASSEMBLY W/ FLANGED OS&Y VALVES.
- 2 PIPE SUPPORT, 2" GALVANIZED SCH 40 AT MINIMUM.
- 3 4" CONCRETE SLAB - 24" WIDE WITH VARYING LENGTH.
- 4 6" OF CRUSHED AGGREGATE COMPACTED TO 95% COMPACTION.
- 5 THRUST BLOCK (PER DWG. 8-3A) WITH #5 REBARS. WRAP THE PORTION OF THE REBAR THAT IS NOT EMBEDDED IN THE CONCRETE WITH 20 MIL POLYETHYLENE TAPE.
- 6 FLANGED CONNECTION ONLY.
- 7 FLANGE X FLANGE SPOOL, DUCTILE IRON. WRAP WITH TWO LAYERS OF 20 MIL TAPE AT SLAB PENETRATION.
- 8 FLANGE X FLANGE 90° ELBOW, DUCTILE IRON.
- 9 WAFER CHECK VALVE.
- 10 GATE VALVE, FLANGE X FLANGE.
- 11 VALVE BOX, SEE DWG. 8-5 FOR REQUIREMENTS.
- 12 DUCTILE IRON PIPE, PUSH ON JOINTS. RESTRAIN WITH U.S. PIPE FIELD LOK GASKETS OR APPROVED EQUAL.
- 13 LOCATING WIRE PER DWG. 8-4A. LOOP WIRE AROUND PIPE AT TOP OF SLAB.
- 14 FLANGE X MJ ADAPTER. RESTRAIN MJ WITH EBAA MEGALUG 1100 OR APPROVED EQUAL.

A. DOUBLE CHECK DETECTOR ASSEMBLY SHALL BE APPROVED BY THE STATE OF CALIFORNIA DIVISION OF DRINKING WATER AND BE ON THE MOST RECENT LIST OF APPROVED BACKFLOW PREVENTION ASSEMBLIES. (www.emd.saccounty.net/EC/Pages/CrossConnection.aspx) (www.waterboards.ca.gov/drinking_water/certific/drinkingwater/Publications.shtml) (www.usc.edu/dept/fccchr/list.html)

B. IF SPECIFICALLY CALLED OUT ON THE PLANS, DO NOT PROVIDE FIRE DEPARTMENT CONNECTION. IN THAT CASE, INSTALL FL X FL 90° ELBOW INSTEAD OF FL X FL TEE.

C. PIPE SHALL BE DUCTILE IRON. FLANGES SHALL BE CLASS D.

D. ALL BURIED METAL SHALL BE ENCASED WITH 8 MIL POLYETHYLENE SO THAT NO SOIL IS IN CONTACT WITH METAL.

E. BYPASS DETECTOR ASSEMBLY SHALL BE MAINTAINED IN OPERABLE CONDITION AT ALL TIMES BY OWNER.

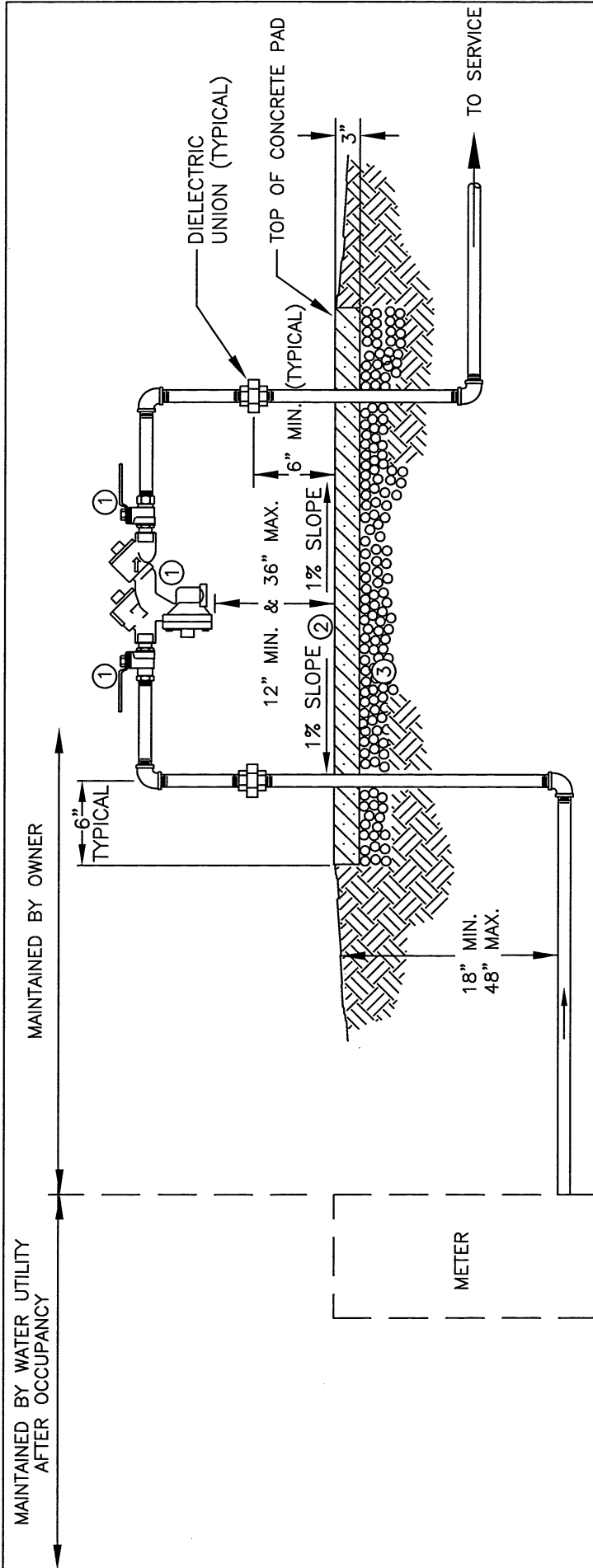
SACRAMENTO COUNTY
MUNICIPAL SERVICES AGENCY

**FIRE PROTECTION
DETAIL**

SCALE: NONE
DATE: 11/15

DIRECTOR, DEPARTMENT OF WATER RESOURCES


Michael L. Peterson



NOTES:

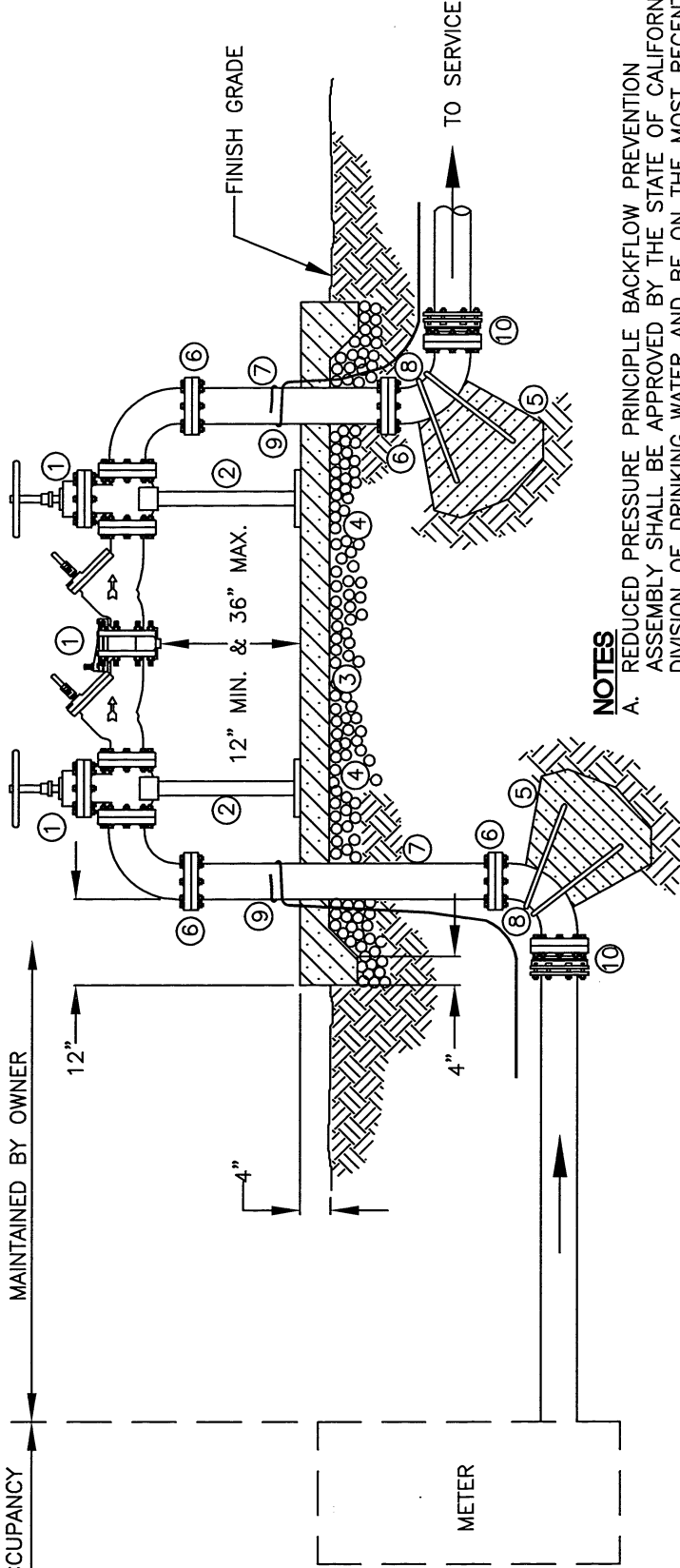
- A. REDUCED PRESSURE PRINCIPLE BACKFLOW PREVENTION ASSEMBLY SHALL BE APPROVED BY THE STATE OF CALIFORNIA DIVISION OF DRINKING WATER AND BE ON THE MOST RECENT LIST OF APPROVED BACKFLOW PREVENTION ASSEMBLIES. (www.emd.saccounty.net/EC/Pages/CrossConnection.aspx) (www.waterboards.ca.gov/drinking_water/certific/drinkingwater/Publications.shtml) (www.usc.edu/dept/fccchr/list.html)
- B. ALL PIPE SHALL BE GALVANIZED SCHEDULE 40 STEEL, TYPE K COPPER, OR BRASS. BURIED METAL SHALL BE ENCASED WITH 8 MIL POLYETHYLENE WRAP OR 10 MIL POLYETHYLENE TAPE SO THAT NO SOIL IS IN CONTACT WITH METAL.
- C. GALVANIZED PIPE SHALL HAVE ANODE BAG PER COUNTY CODE SECTION 16.24.100. INSTALL DIELECTRIC COUPLING OR FITTING BETWEEN DISSIMILAR METALS.

- ① REDUCED PRESSURE PRINCIPLE BACKFLOW PREVENTION ASSEMBLY, WITH 2 BRONZE RESILIENT SEATED BALL VALVES MINIMUM WORKING PRESSURE 175 PSI.
- ② 3" SLAB - 18" WIDE WITH VARYING LENGTH
- ③ 1/2" OR 3/4" CRUSHED ROCK, 4" MINIMUM THICKNESS, MECHANICALLY COMPACTED TO 95% COMPACTION.

<p>SACRAMENTO COUNTY MUNICIPAL SERVICES AGENCY</p>	<p>SCALE: NONE DATE: 11/15</p>
<p>REDUCED PRESSURE BACKFLOW PREVENTER 1" TO 2"</p>	
	
<p>DIRECTOR, DEPARTMENT OF WATER RESOURCES</p>	
<p>8-8A</p>	

MAINTAINED BY WATER UTILITY
AFTER OCCUPANCY

MAINTAINED BY OWNER



NOTES

- A. REDUCED PRESSURE PRINCIPLE BACKFLOW PREVENTION ASSEMBLY SHALL BE APPROVED BY THE STATE OF CALIFORNIA DIVISION OF DRINKING WATER AND BE ON THE MOST RECENT LIST OF APPROVED BACKFLOW PREVENTION ASSEMBLIES. (www.emd.saccounty.net/EC/Pages/CrossConnection.aspx) (www.waterboards.ca.gov/drinking_water/certific/drinkingwater/Publications.shtm) (www.usc.edu/dept/fccchr/ist.html)
- B. PIPE SHALL BE DUCTILE IRON. FLANGES SHALL BE CLASS D.
- C. ALL BURIED METAL SHALL BE ENCASED WITH 8 MIL. POLYETHYLENE SO THAT NO SOIL IS IN CONTACT WITH METAL.

- ① REDUCED PRESSURE PRINCIPLE BACKFLOW PREVENTION ASSEMBLY, WITH 2 RESILIENT WEDGE GATE VALVES, FLANGED, WITH HANDWHEEL OPERATORS.
- ② PIPE SUPPORT, MIN. 2" GALVANIZED SCH 40.
- ③ 4" CONCRETE SLAB - 24" WIDE WITH VARYING LENGTH.
- ④ 6" CRUSHED AGGREGATE COMPACTED TO 95% COMPACTION
- ⑤ THRUST BLOCK (PER DWG. 8-3A) WITH #5 REBARS. WRAP THE PORTION OF THE REBAR NOT EMBEDDED IN CONCRETE WITH 20 MIL POLYETHYLENE TAPE.
- ⑥ FLANGE CONNECTION ONLY.
- ⑦ FLANGE X FLANGE SPOOL, DUCTILE IRON. WRAP WITH 2 LAYERS 20 MIL TAPE AT SLAB PENETRATION
- ⑧ FLANGE X FLANGE 90° ELBOW, DUCTILE IRON.
- ⑨ LOCATING WIRE PER DWG. 8-4A. LOOP WIRE AROUND PIPE AT TOP OF SLAB.
- ⑩ FLANGE X MJ ADAPTER, RESTRAINED.

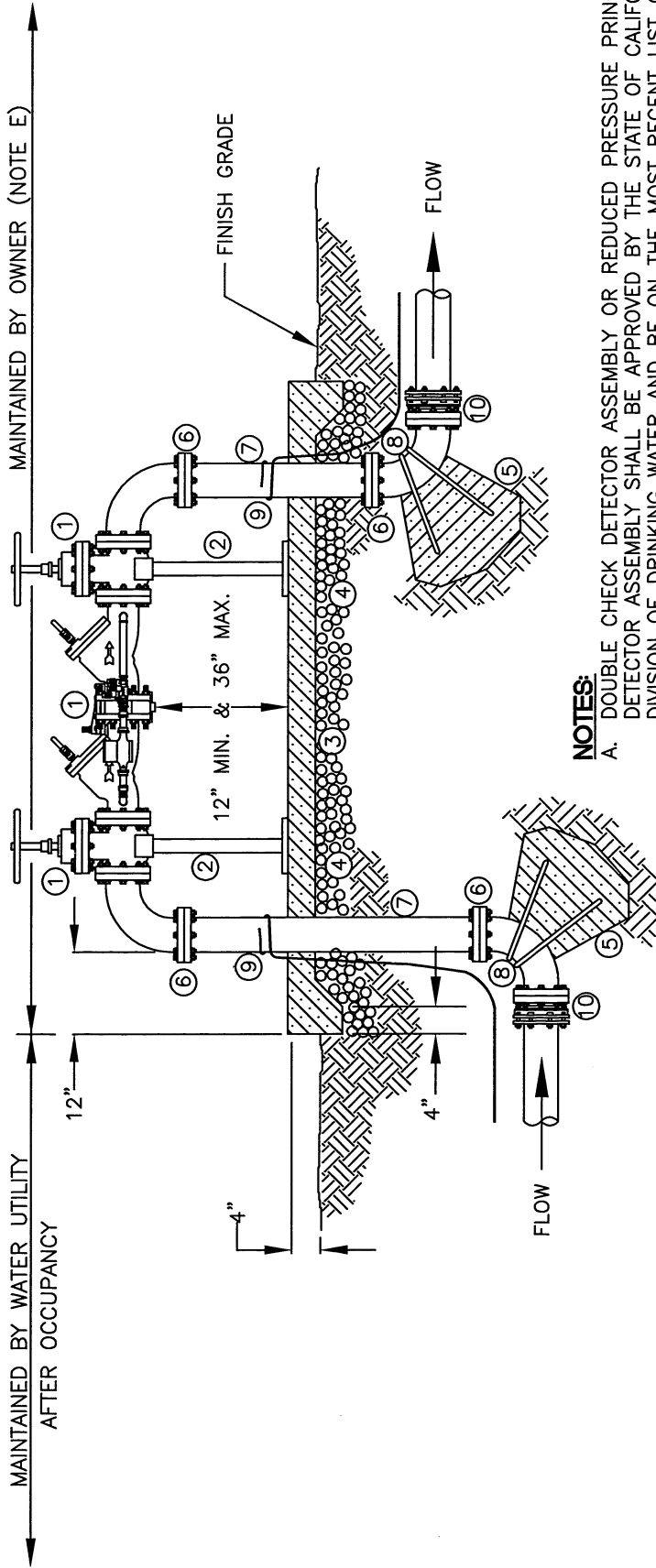
SACRAMENTO COUNTY
MUNICIPAL SERVICES AGENCY

**REDUCED PRESSURE BACKFLOW
PREVENTER 3" AND LARGER**

SCALE: NONE
DATE: 11/15

DIRECTOR, DEPARTMENT OF WATER RESOURCES

8-8B



NOTES:

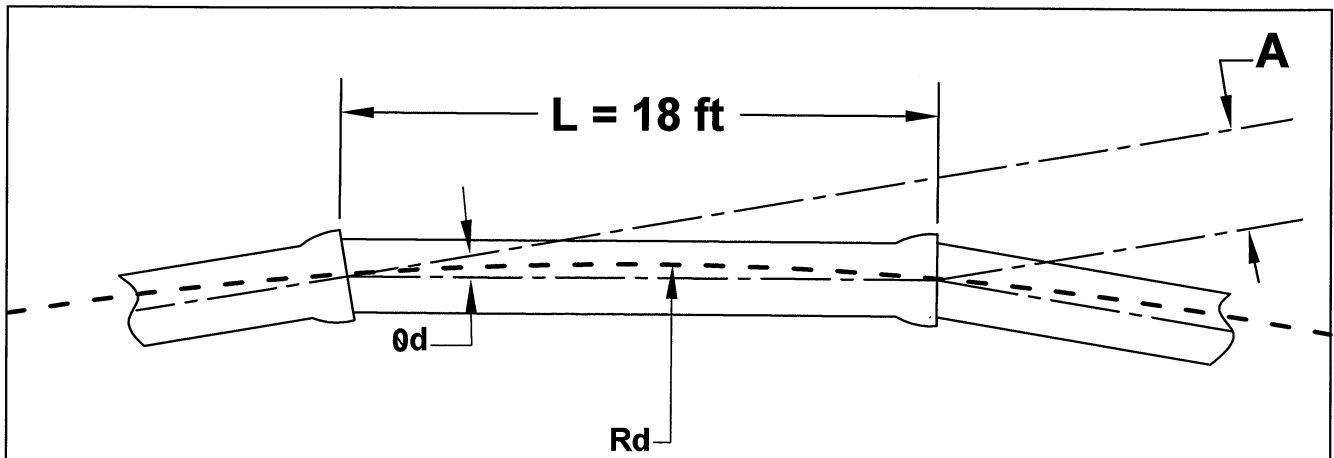
- A. DOUBLE CHECK DETECTOR ASSEMBLY OR REDUCED PRESSURE PRINCIPLE DETECTOR ASSEMBLY SHALL BE APPROVED BY THE STATE OF CALIFORNIA DIVISION OF DRINKING WATER AND BE ON THE MOST RECENT LIST OF APPROVED BACKFLOW PREVENTION ASSEMBLIES.
(www.emd.saccounty.net/EC/Pages/CrossConnection.aspx)
(www.waterboards.ca.gov/drinking_water/certific/drinkingwater/Publications.shtml)
(www.usc.edu/dept/fccchr/list.html)
- B. PIPE SHALL BE DUCTILE IRON. FLANGES SHALL BE CLASS D.
- C. ALL BURIED METAL SHALL BE ENCASED WITH 8 MIL. POLYETHYLENE SO THAT NO SOIL IS IN CONTACT WITH METAL.
- D. PROVIDE TAMPER SWITCHES AND CHAIN LOCK IF REQUIRED BY FIRE DEPARTMENT.
- E. BYPASS DETECTOR ASSEMBLY SHALL BE MAINTAINED IN OPERABLE CONDITION AT ALL TIMES BY OWNER.

- ① DOUBLE CHECK DETECTOR ASSEMBLY OR RP PRINCIPLE DETECTOR ASSEMBLY. TYPE AS CALLED OUT ON PLANS, WITH 2 RESILIENT WEDGE GATE VALVES, FLANGED, WITH HANDWHEEL OPERATORS.
- ② PIPE SUPPORT, MIN. 2" GALVANIZED SCH 40.
- ③ 4" CONCRETE SLAB - 24" WIDE WITH VARYING LENGTH.
- ④ 6" CRUSHED AGGREGATE COMPACTED TO 95% COMPACTION
- ⑤ THRUST BLOCK (PER DWG. 8-3A) WITH #5 REBARS. WRAP THE PORTION OF THE REBAR NOT EMBEDDED IN CONCRETE WITH 20 MIL POLYETHYLENE TAPE.
- ⑥ FLANGE CONNECTION ONLY.
- ⑦ FLANGE X FLANGE SPOOL, DUCTILE IRON. WRAP WITH 2 LAYERS 20 MIL TAPE AT SLAB PENETRATION.
- ⑧ FLANGE X FLANGE 90° ELBOW, DUCTILE IRON.
- ⑨ LOCATING WIRE PER DWG. 8-4A. LOOP WIRE AROUND PIPE AT TOP OF SLAB.
- ⑩ FLANGE X MJ ADAPTER, RESTRAINED.

SACRAMENTO COUNTY MUNICIPAL SERVICES AGENCY	
DOUBLE CHECK DETECTOR OR RP PRINCIPLE DETECTOR 6" AND LARGER	
SCALE: NONE	8-8C
DATE: 11/15	

Michael J. ...

DIRECTOR, DEPARTMENT OF WATER RESOURCES



θd = Maximum joint deflection angle (degrees)

A = Offset at the end of the pipe (inches)

Rd = Minimum radius of curve produced by succession of joints (feet)

MAXIMUM JOINT DEFLECTION FOR DUCTILE IRON PIPE						
Size Of Pipe (inches)	UNRESTRAINED JOINTS			RESTRAINED JOINTS		
	Maximum Deflection Angle, " θd " (degrees)	Minimum Radius, " Rd " (feet)	Offset At Free End, " A " (inches)	Maximum Deflection Angle, " θd " (degrees)	Minimum Radius, " Rd " (feet)	Offset At Free End, " A " (Inches)
4	2.5	400	10	2.5	400	10
6	2.5	400	10	2.5	400	10
8	2.5	400	10	2.5	400	10
10	2.5	400	10	2.5	400	10
12	2.5	400	10	2.5	400	10
14	2.5	400	10	2.0	500	8
16	2.5	400	10	2.0	500	8
18	2.5	400	10	2.0	500	8
20	2.5	400	10	1.25	800	5
24	2.5	400	10	1.25	800	5
30	2.5	400	10	1.00	1100	4
36	2.5	400	10	0.75	1400	3
42	2.0	500	8	0.25	4000	1

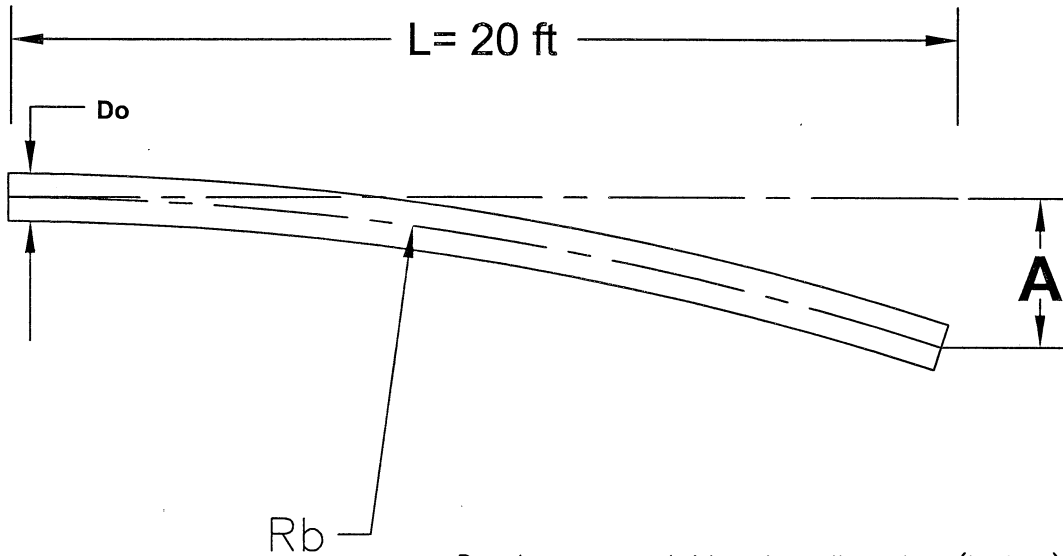
SACRAMENTO COUNTY
MUNICIPAL SERVICES AGENCY

DIRECTOR, DEPARTMENT OF WATER RESOURCES

**MAXIMUM DEFLECTION
FOR DUCTILE IRON PIPE**

SCALE: NONE
DATE: 8/13

8-9A



Do=Average outside pipe diameter (inches)
 A=Offset at the end of the pipe (inches)
 Rb=Minimum bending radius (feet)

MAXIMUM BENDING DEFLECTION FOR PVC PIPE				
Nominal Pipe Diameter	Average Outside Pipe Diameter "Do"	Minimum Wall Thickness	Minimum Bending Radius "Rb"	Offset at Free End, "A"
(inches)	(inches)	(inches)	(feet)	(inches)
AWWA C900 CLASS 150 DR 18				
4	4.800	0.267	120	20
6	6.900	0.383	185	13
8	9.050	0.503	240	10
10	11.100	0.617	400	6
12	13.200	0.733	800	3
AWWA C905 CLASS 235 DR 18				
14	15.300	0.850	1500	2
16	17.400	0.967	1500	2
18	19.500	1.083	1500	2

JOINT DEFLECTION OF AWWA C900 & C905 PVC PIPE IS PROHIBITED.

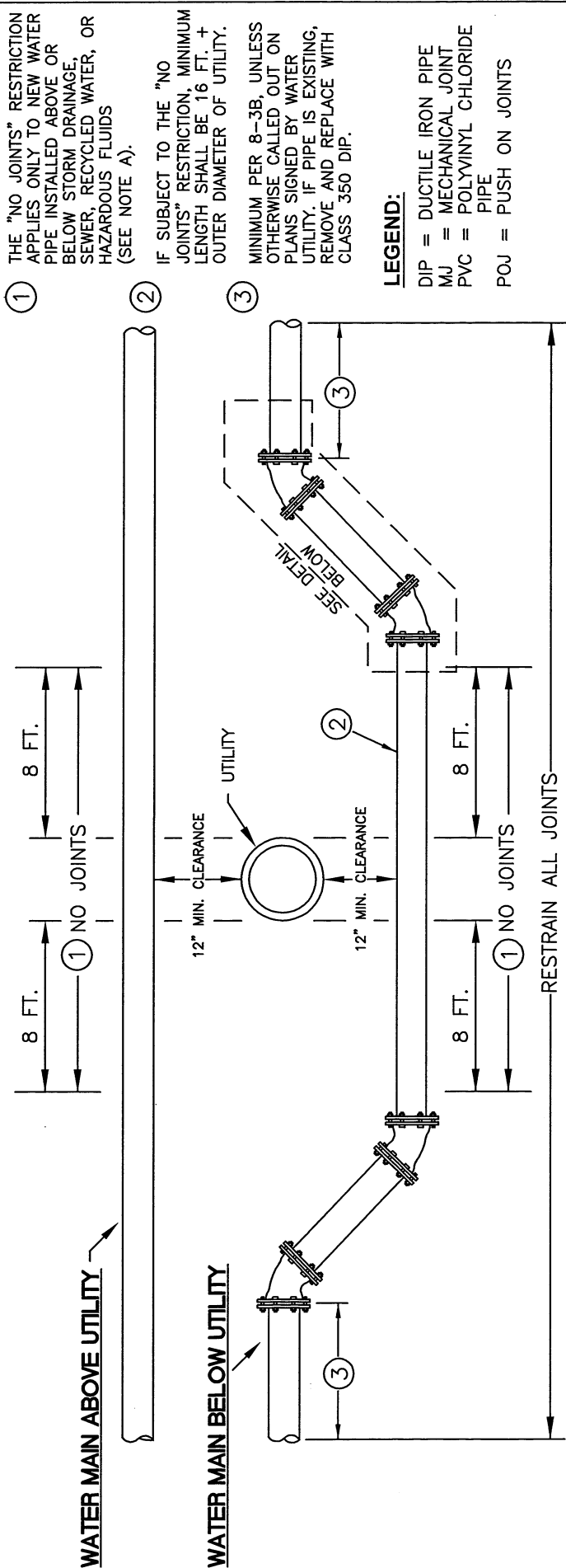
Michael Stever
 DIRECTOR, DEPARTMENT OF WATER RESOURCES

SACRAMENTO COUNTY
 MUNICIPAL SERVICES AGENCY

**MAXIMUM DEFLECTION
 FOR PVC PIPE**

SCALE: NONE
 DATE: 8/13

8-9B



① THE "NO JOINTS" RESTRICTION APPLIES ONLY TO NEW WATER PIPE INSTALLED ABOVE OR BELOW STORM DRAINAGE, SEWER, RECYCLED WATER, OR HAZARDOUS FLUIDS (SEE NOTE A).

② IF SUBJECT TO THE "NO JOINTS" RESTRICTION, MINIMUM LENGTH SHALL BE 16 FT. + OUTER DIAMETER OF UTILITY.

③ MINIMUM PER 8-3B, UNLESS OTHERWISE CALLED OUT ON PLANS SIGNED BY WATER UTILITY. IF PIPE IS EXISTING, REMOVE AND REPLACE WITH CLASS 350 DIP.

LEGEND:

- DIP = DUCTILE IRON PIPE
- MJ = MECHANICAL JOINT
- PVC = POLYVINYL CHLORIDE PIPE
- POJ = PUSH ON JOINTS

NOTES:

- A. APPLICABILITY: (1) DETAIL APPLIES TO 12" & SMALLER WATER MAINS; (2) PER 2008 CALIFORNIA WATER REGULATIONS, NEW POTABLE WATER MAINS SHALL NOT BE INSTALLED BELOW STORM DRAINAGE, SEWER, RECYCLED WATER, OR HAZARDOUS FLUIDS. WRITTEN APPROVAL FROM CALIFORNIA DIVISION OF DRINKING WATER SHALL BE RECEIVED BY WATER UTILITY PRIOR TO INSTALLATION OF NON-COMPLIANT WATER MAINS. ADDITIONAL DESIGN REQUIREMENTS WILL APPLY.
- B. BENDS SHALL NOT EXCEED 22.5° OF BEND UNLESS OTHERWISE SPECIFIED ON PLANS SIGNED BY THE WATER UTILITY.
- C. RESTRAINING DEVICES FOR MJ'S: FOR DUCTILE IRON USE EBAA MEGALUG 1100, STAR PIPE PRODUCTS STARGRIP 3000, OR SIGMA ONE-LOK SLIDE; FOR PVC PIPE USE EBAA 2000PV, STAR PIPE PRODUCTS STARGRIP 4000, OR SIGMA ONE-LOK SLICE.
- D. RESTRAINING DEVICES FOR PUSH-ON JOINTS: FOR DUCTILE IRON USE U.S. PIPE FIELD LOK GASKETS, U.S. PIPE TR FLEX PIPE, OR APPROVED EQUAL; RESTRAINED PVC PUSH-ON JOINTS NOT ALLOWED, USE DUCTILE IRON PIPE ONLY FOR RESTRAINED PUSH-ON JOINTS.
- E. INSTALL LOCATING WIRE PER 8-4A.
- F. ALL BURIED METAL SHALL BE ENCASED WITH AWWA C105 8 MIL POLYETHYLENE SO THAT NO SOIL IS IN CONTACT WITH METAL.

C151 CLASS 350 DIP (C900 PVC DR 18 MAY BE USED IF UTILITY IS NOT SUBJECT TO "NO JOINTS" RESTRICTION.)

C-153 MJ X MJ DUCTILE IRON FITTING FOR DIP AND PVC PIPE; OR C153 POJ X POJ DUCTILE IRON FITTING FOR DIP.

DEGREE OF BEND PER PLAN AND PROFILE SHEET (TYPICAL)

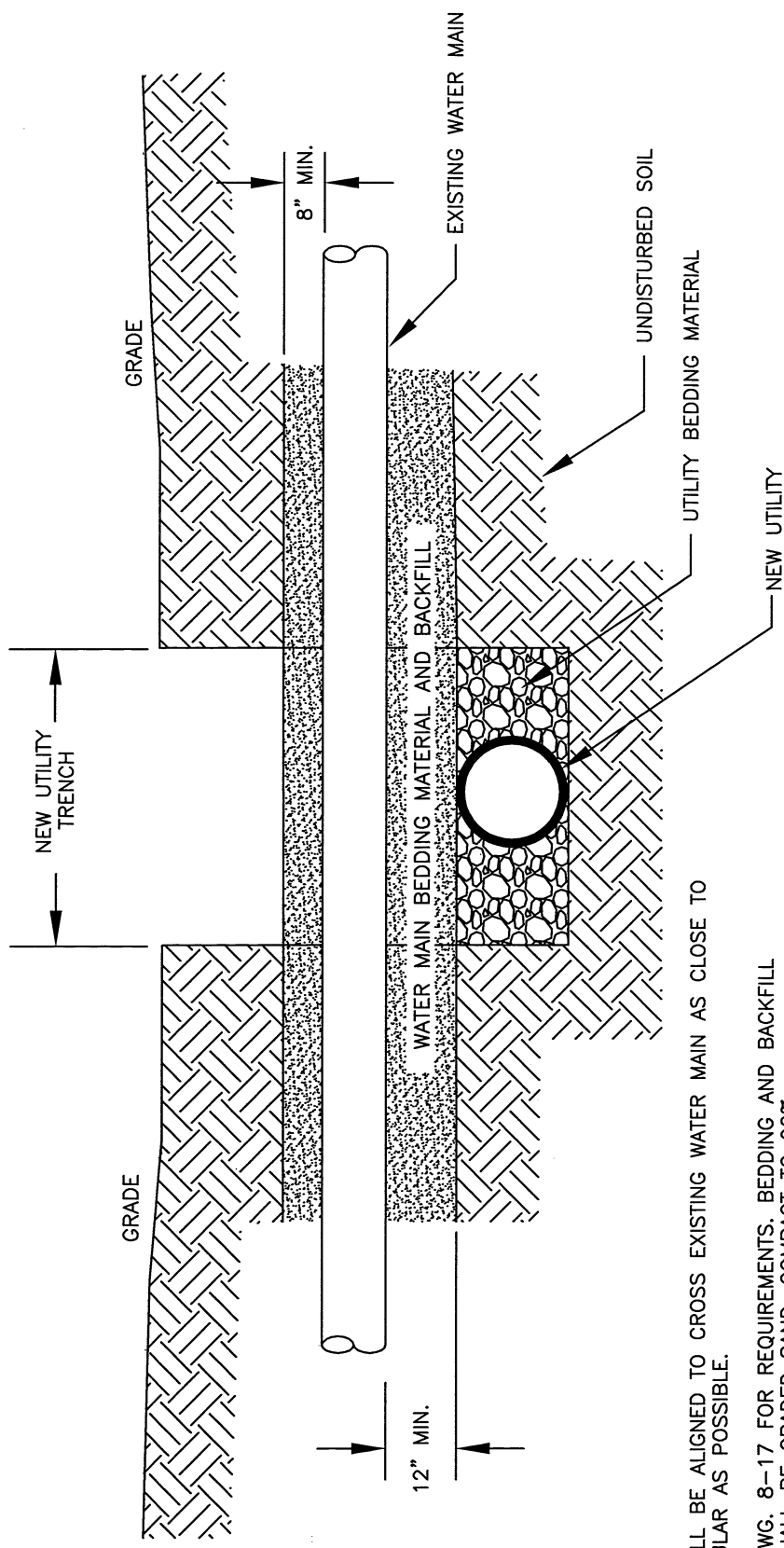
SACRAMENTO COUNTY
MUNICIPAL SERVICES AGENCY

UTILITY CROSSING

SCALE: NONE
DATE: 11/15

8-10

Much...
DIRECTOR, DEPARTMENT OF WATER RESOURCES



NOTES:

1. UTILITY SHALL BE ALIGNED TO CROSS EXISTING WATER MAIN AS CLOSE TO PERPENDICULAR AS POSSIBLE.
2. SEE STD. DWG. 8-17 FOR REQUIREMENTS. BEDDING AND BACKFILL MATERIAL SHALL BE GRADED SAND. COMPACT TO 90%.
3. REPAIR OR REPLACE EXISTING LOCATING WIRE, POLYETHYLENE ENCASEMENT, AND UNDERGROUND MARKING TAPE.
4. FOR EXISTING ASBESTOS CEMENT (ACP) WATER MAINS: PRIOR TO EXCAVATION OF NEW UTILITY TRENCH, EXCAVATE AND REMOVE EXISTING ACP 5 TO 10 FEET BEYOND THE PLANNED TRENCH LIMITS OF NEW UTILITY TO AN EXISTING ACP JOINT AND REPLACE WITH CLASS 350 DUCTILE IRON PIPE (DIP) USING TRANSITION COUPLINGS (SMITH-BLAIR OMNI 442 WITH 12-INCH SLEEVE AND S.S. HARDWARE). WRAP DIP AND COUPLINGS WITH 8 MIL POLYETHYLENE AND BACKFILL WITH CLSM 6 INCHES UNDER DIP TO SPRINGLINE WITHIN 5 FEET OF ACP. BACKFILL REST OF PIPE ZONE WITH SAND. COMPLY WITH WRITTEN REQUIREMENTS OBTAINED FROM THE WATER UTILITY FOR THE REPLACEMENT.

SACRAMENTO COUNTY
MUNICIPAL SERVICES AGENCY

**UTILITY CROSSING UNDER
EXISTING WATER MAIN**

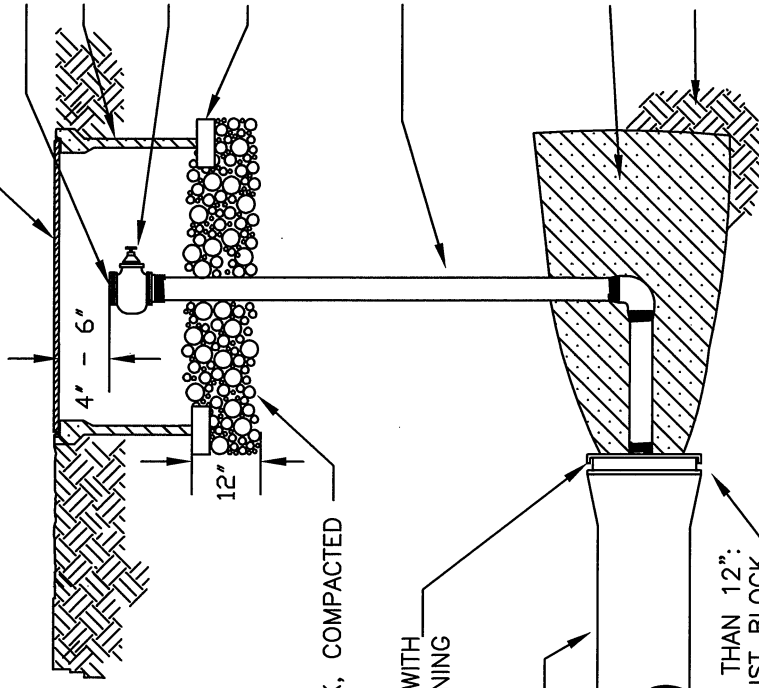
SCALE: NONE
DATE: 11/15

8-11

Michael J. [Signature]
DIRECTOR, DEPARTMENT OF WATER RESOURCES

A 2" TEMPORARY BLOW OFF IS SHOWN. FOR 3" TEMPORARY BLOW OFF, USE 3" BRONZE BALL VALVE OR 3" AWWA GATE VALVE, WITH 3" BRONZE PLUG, 3" GALVANIZED PIPE & FITTING, 3" THREADED TAP AT MJ CAP/PLUG, AND CHRISTY B1324 TRAFFIC BOX, OR EQUAL.

BOLT DOWN H2O TRAFFIC RATED GALVANIZED STEEL COVER. COVER SHALL BE LABELED WITH BEAD WELDED LETTERS: "WATER" FOR POTABLE, "RECYCLED WATER" FOR RECYCLED AND NON-POTABLE WATER, "RAW WATER" FOR RAW WATER. (SEE NOTE 1)



BRONZE PLUG W/ 1/2" SQUARE INDENTED NUT

10"X17" BOX WITH H/20 TRAFFIC LOADING: CHRISTY B1017BOX, BROOKS 3 1/2-T PB, OR APPROVED EQUAL.

2" BRONZE BALL CURB STOP WITH TEFLON COATED BALL, F.I.P.T. x F.I.P.T. WITH LOCKWING.

3/4" TO 1"X4"X16" CONCRETE BLOCKS TO HELP LEVEL AND SUPPORT BOX. USE MINIMUM OF ONE BLOCK ON ALL FOUR SIDES OF BOX. COVER ANY OPENINGS OR HOLES IN UTILITY BOX WITH CONCRETE BLOCKS.

2" GALVANIZED SCH 40 STEEL PIPE & 90° ELBOW. WRAP WITH 10 MIL POLYETHYLENE TAPE, DOUBLE WRAP PIPE THREADS (TYPICAL). A STREET 90° ELBOW MAY BE USED IF THE END OF THE MJ CAP/PLUG IS FLAT.

THRUST BLOCK (12" AND SMALLER MAINS), SIZE FOR "DEAD END" PER DWG. 8-3A.

UNDISTURBED EARTH

3/4" CRUSHED ROCK, COMPACTED

MJ CAP OR MJ PLUG WITH 2" NPT THREADED OPENING

WATER MAIN

FOR MAINS LARGER THAN 12": DO NOT INSTALL THRUST BLOCK; USE RESTRAINED JOINTS OVER RESTRAINED LENGTH SHOWN ON PLANS.

NOTES:

1. RECYCLED AND NONPOTABLE WATER: TOP OF FRAME AND COVER SHALL BE COATED PURPLE PRIOR TO INSTALLATION PER STANDARD SPECIFICATIONS.

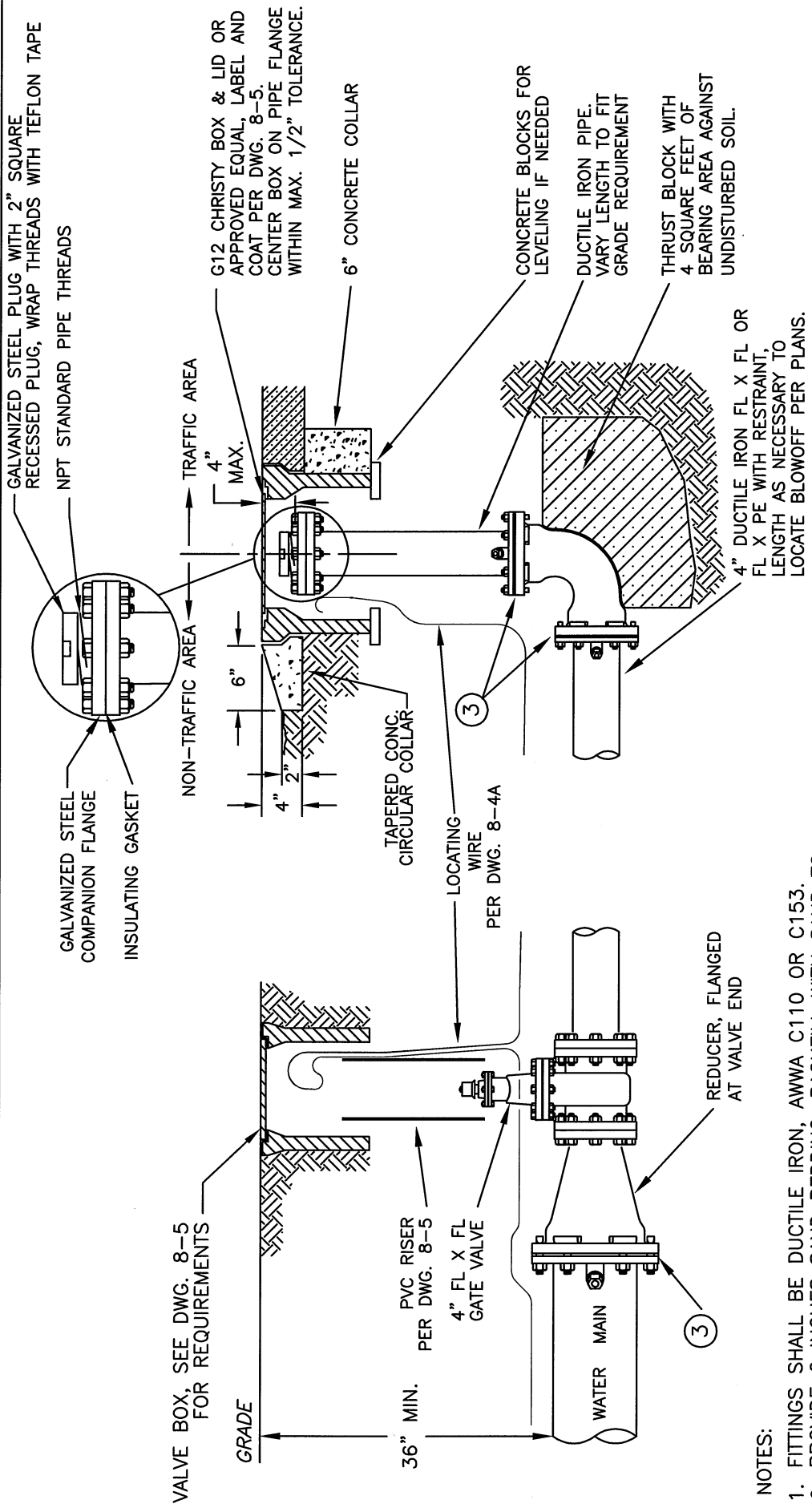
SACRAMENTO COUNTY
MUNICIPAL SERVICES AGENCY

**TEMPORARY
BLOW OFF ASSEMBLY**

SCALE: NONE
DATE: 8/13

Mulder
DIRECTOR, DEPARTMENT OF WATER RESOURCES

8-12



NOTES:

1. FITTINGS SHALL BE DUCTILE IRON, AWWA C110 OR C153.
2. PROVIDE 6 INCHES SAND BEDDING. BACKFILL WITH SAND TO 8 INCHES ABOVE THE TOP OF PIPE. COMPACT TO 90% RELATIVE COMPACTION.
3. THESE JOINTS MAY BE FLANGED, RESTRAINED MECHANICAL JOINT WITH APPROVED RESTRAINING DEVICES, OR PUSH-ON WITH U.S. PIPE FIELD-LOK GASKETS OR APPROVED EQUAL.
4. ALL BURIED METAL SHALL BE ENCASED WITH 8 MIL POLYETHYLENE SO THAT NO SOIL IS IN CONTACT WITH METAL.

Michael J. Peters
 DIRECTOR, DEPARTMENT OF WATER RESOURCES

SACRAMENTO COUNTY
 MUNICIPAL SERVICES AGENCY

**4" BLOW OFF ASSEMBLY
 AT END OF MAIN**

SCALE: NONE
 DATE: 8/13

8-13A

GALVANIZED STEEL PLUG WITH 2" SQUARE RECESSED PLUG, WRAP THREADS WITH TEFLON TAPE
NPT STANDARD PIPE THREADS

GALVANIZED STEEL COMPANION FLANGE

INSULATING GASKET

SIDEWALK

CURB & GUTTER

VALVE BOX, SEE DWG. 8-5 FOR REQUIREMENTS

GRADE

36" MIN.

PVC RISER PER DWG. 8-5

4" FL x FL GATE VALVE

REDUCER, FLANGED AT VALVE END

WATER MAIN

LAST WATER SERVICE

LOCATING WIRE PER DWG. 8-4A

TAPERED CONC. CIRCULAR COLLAR

G12 CHRISTY BOX & LID OR APPROVED EQUAL, LABEL AND COAT PER DWG. 8-5. CENTER BOX ON PIPE FLANGE, MAX. 1/2" TOLERANCE.

4" MAX.

CONCRETE BLOCKS FOR LEVELING IF NEEDED

DUCTILE IRON PIPE, VARY LENGTH TO FIT GRADE REQUIREMENT

THRUST BLOCK WITH 4 SQUARE FEET OF BEARING AREA AGAINST UNDISTURBED SOIL.

4" DUCTILE IRON FL X FL OR FL X PE WITH RESTRAINT, LENGTH AS NECESSARY TO LOCATE BLOWOFF PER PLANS.

NOTES:

1. FITTINGS SHALL BE DUCTILE IRON, AWWA C110 OR C153.
2. PROVIDE 6 INCHES SAND BEDDING. BACKFILL WITH SAND TO 8 INCHES ABOVE THE TOP OF PIPE. COMPACT TO 90% RELATIVE COMPACTION.
3. THESE JOINTS MAY BE FLANGED, RESTRAINED MECHANICAL JOINT WITH APPROVED RESTRAINING DEVICES, OR PUSH-ON WITH U.S. PIPE FIELD-LOK GASKETS OR APPROVED EQUAL.
4. ALL BURIED METAL SHALL BE ENCASED WITH 8 MIL POLYETHYLENE SO THAT NO SOIL IS IN CONTACT WITH METAL.

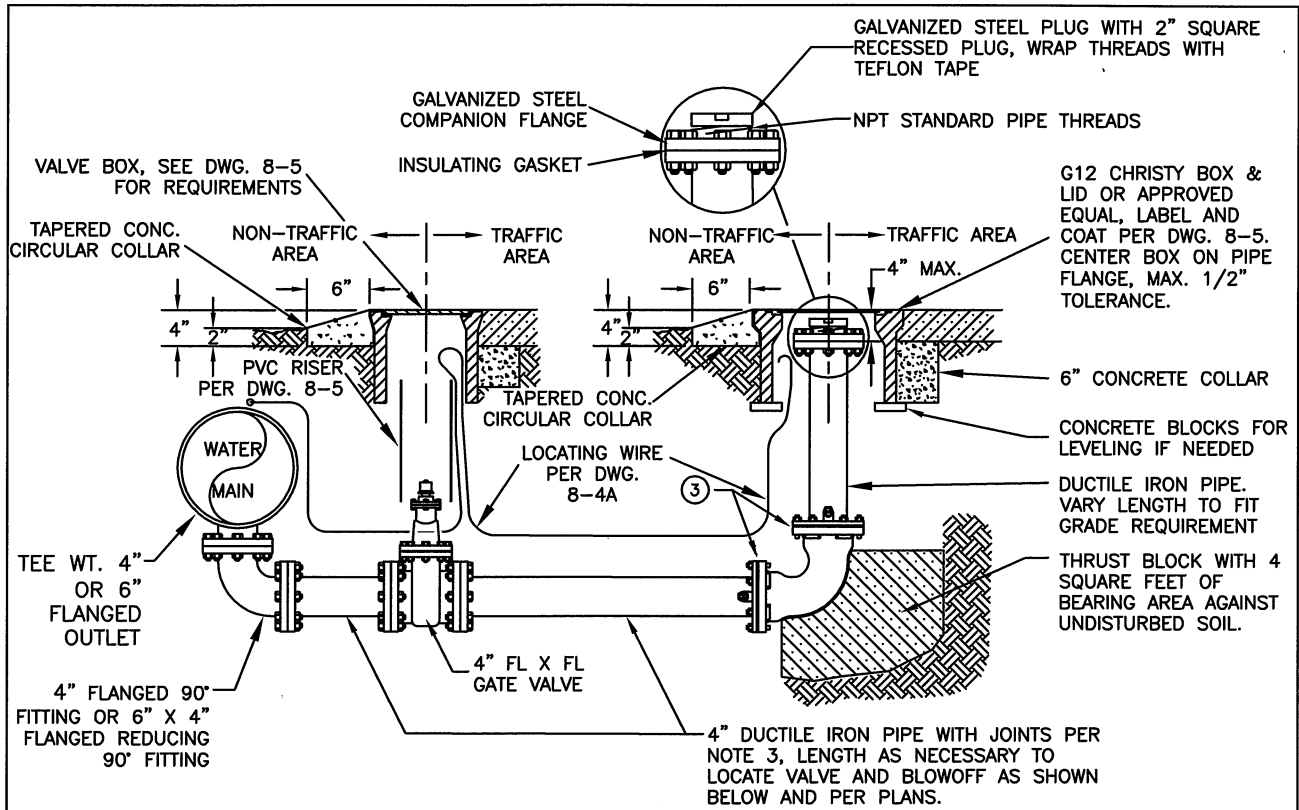
SACRAMENTO COUNTY MUNICIPAL SERVICES AGENCY

4" BLOW OFF ASSEMBLY AT END OF CUL-DE-SAC

M. J. ...
DIRECTOR, DEPARTMENT OF WATER RESOURCES

SCALE: NONE
DATE: 8/13

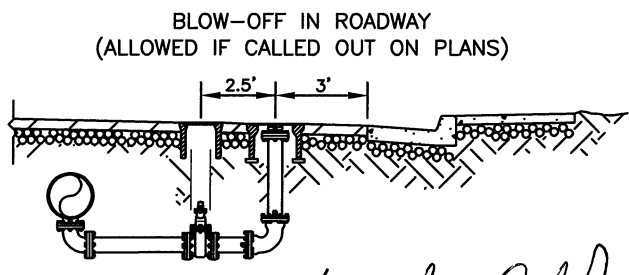
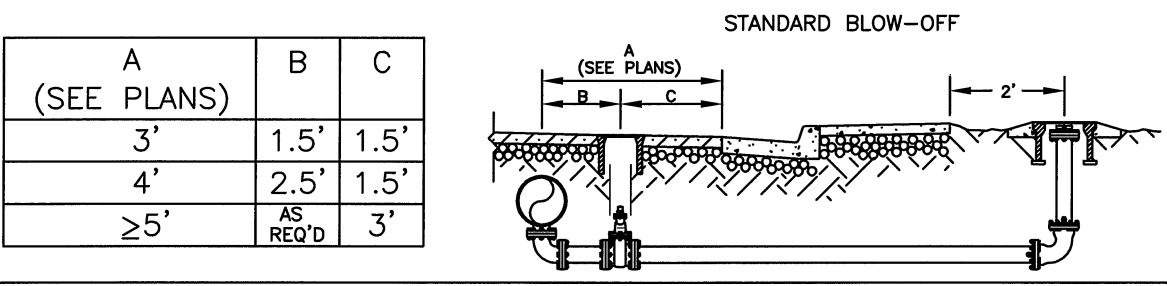
8-13 B



NOTES:

1. FITTINGS SHALL BE DUCTILE IRON, AWWA C110 OR C153.
2. PROVIDE 6 INCHES SAND BEDDING. BACKFILL WITH SAND TO 8 INCHES ABOVE THE TOP OF PIPE. COMPACT TO 90% RELATIVE COMPACTION.
3. JOINTS MAY BE FLANGED, RESTRAINED MECHANICAL JOINT WITH APPROVED RESTRAINING DEVICES, OR PUSH-ON WITH U.S. PIPE FIELD-LOK GASKETS OR APPROVED EQUAL.
4. ALL BURIED METAL SHALL BE ENCASED WITH 8 MIL POLYETHYLENE SO THAT NO SOIL IS IN CONTACT WITH METAL.
5. RECYCLED AND NONPOTABLE WATER: THE TOP SURFACES OF BOXES AND LIDS SHALL BE COATED PURPLE PRIOR TO INSTALLATION PER STANDARD SPECIFICATIONS.

UNLESS OTHERWISE SPECIFIED ON THE PLANS, LOCATION OF VALVE AND BLOW-OFF BOX SHALL CONFORM TO THE FOLLOWING:



**SACRAMENTO COUNTY
MUNICIPAL SERVICES AGENCY**

**4" IN-LINE BLOW-OFF
ASSEMBLY**

SCALE: NONE
DATE: 8/13

8-13C

Michael L. Peterson
DIRECTOR, DEPARTMENT OF WATER RESOURCES

CLEAN INTERIOR AND EXTERIOR SURFACES OF LID AND TUBE WITH DEVPREP 88 OR EQUAL, THEN COAT ALL SURFACES, NUTS AND BOLTS W/ DEVOE BAR-RUST 233H EPOXY UNDERCOAT, 2-3MILS, COLOR GRAY; THEN APPLY 2 COATS OF DEVOE ACRYLIC 1.5 MILS TO 2.0 MILS, EACH, COLOR SHALL BE HUNTER GREEN FOR POTABLE WATER AND RAW WATER; PURPLE FOR RECYCLED AND NONPOTABLE WATER.

3/16" STEEL, 6" X 6" SQUARE TUBE 18" HIGH WITH AN 8-1/2" CAP, SPOT WELDED AT THE TOP.

2-3/8" BOLTS, GRADE 3 WITH WASHER.

1/4" THICK STEEL LID, TACK WELD 1/4" THICK BY 1" WIDE STEEL PLATE AROUND PERIMETER OF LID SO TOP OF LID IS FLUSH W/ TOP OF BOX. CUT 5" X 5" SQUARE HOLE IN TOP OF LID. SQUARE HOLE TO BE CENTERED RELATIVE TO WIDTH OF LID. LID SHALL BE BOLTED TO BOX. LID SHALL BE LABELED WITH BEAD WELDED LETTERS: "RECYCLED WATER" FOR RECYCLED AND NONPOTABLE WATER; "RAW WATER" FOR RAW WATER; AND UNLABELED FOR POTABLE WATER. LID & TUBE ASSEMBLY SHALL BE PWAE118M BY PLACER WATERWORKS OR EQUAL APPROVED BY THE WATER UTILITY.

WELD 2 LOCKING NUTS TO LID TO ACCEPT BOLTS.

1" SCHEDULE 40 GALVANIZED STEEL PIPE W/STEEL THREADED COUPLING AND 1" TO 3/4" PVC ADAPTER. OPERATOR MUST BE ABLE TO UNSCREW PVC RISER FROM COUPLING.

1" CRISPIN UL-10 COMBINATION AIR RELEASE/VACUUM VALVE OR SCWA APPROVED EQUAL

1"- 90° BRONZE FITTING (TYP)

1"- BRASS NIPPLE (TYP)

1 1/4" X 1" BRONZE THREADED BUSHING

COPPER PIPE, TYPE K PER AWWA C800 W/ POLYETHYLENE ENCASMENT; CONTINUOUS PIPE, NO JOINTS PERMITTED (SEE NOTE 6 FOR AN EXCEPTION).

1" BRONZE BALL CORP. STOP WITH TEFLON COATED BALL.

NOTES:

1. MAINTAIN A MIN 2% CONTINUOUS UPWARD SLOPE FROM CORP STOP TO AIR VALVE. INSPECTOR SHALL VERIFY SLOPE EVERY 5 FEET OF RUN.
2. FLARE, SOLDER JOINT, OR COMPRESSION FITTINGS ARE ACCEPTABLE.
3. PROVIDE 3' X 3' X 3' OF 1/2" CRUSHED AGGREGATE FOR DRAINAGE AND SUPPORT UNDER VALVE, COMPACT TO 95%.
4. SEE PLANS FOR LOCATION INFORMATION. UNLESS OTHERWISE SPECIFIED, LOCATE BOX 2' BEHIND SIDEWALK.
5. BOX SHALL NOT BE INSTALLED IN LOCATIONS SUBJECT TO TRAFFIC.
6. IF IT IS NECESSARY TO RELOCATE AN EXISTING INSTALLATION THAT IS UNDER EXISTING PAVEMENT: NEW COPPER PIPE MAY BE JOINED TO EXISTING COPPER PIPE WITH A MUELLER 110 H-15403 CONNECTOR.

3/4" SCHEDULE 40 PVC #16 MESH BRONZE OR STAINLESS STEEL SCREEN

RIVET 1" X 4" STAINLESS STEEL NAME PLATE THAT READS "SACRAMENTO COUNTY WATER" TO TUBING.

H2O TRAFFIC RATED BOX TO ACCEPT BOLT DOWN METAL LID. BOX SHALL HAVE A 13" X 24" INSIDE DIMENSION AS MADE BY CHRISTY, BROOKS OR APPROVED EQUAL.

6" DIAMETER PVC SLEEVE

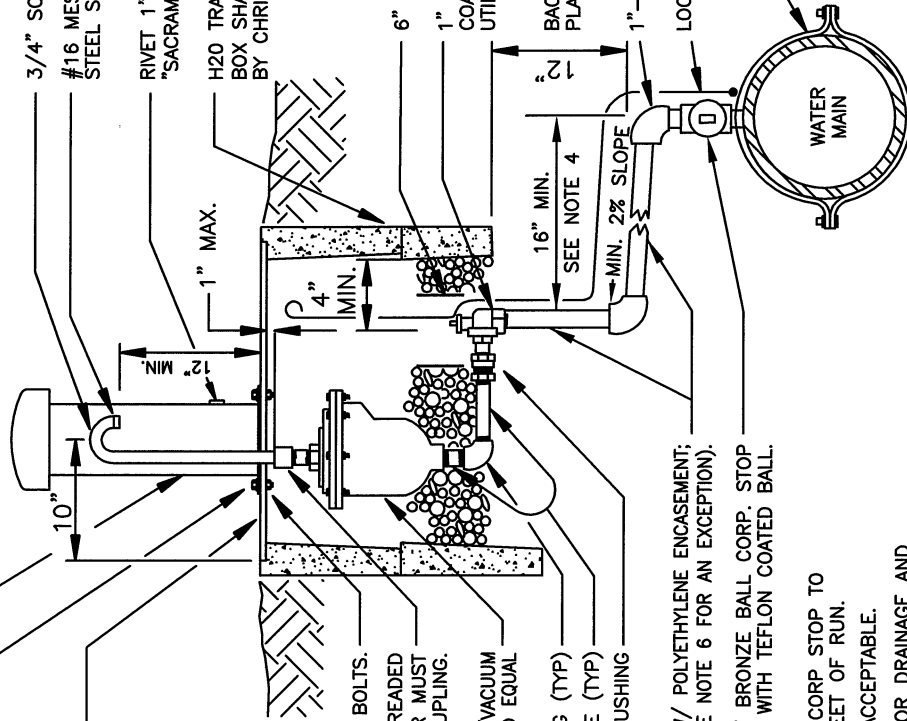
1" BRONZE ANGLE METER STOP BALL VALVE WITH TEFLON COATED BALL: JONES OR EQUAL APPROVED BY THE WATER UTILITY.

BACKFILL W/ SAND TO 12 INCHES ABOVE PIPE AND PLACE WARNING TAPE 12 INCHES ABOVE PIPE

1"- 90° COPPER FITTING (TYPICAL)

LOCATING WIRE PER DWG. 8-4A

BRONZE SERVICE SADDLE AND BOLTS, WRAP W/ 8 MIL POLYETHYLENE ENCASMENT



SACRAMENTO COUNTY
MUNICIPAL SERVICES AGENCY

**1" COMBINATION AIR/
VACUUM VALVE**

SCALE: NONE
DATE: 8/13
8-14A

Michael J. ...
DIRECTOR, DEPARTMENT OF WATER RESOURCES

CLEAN INTERIOR AND EXTERIOR SURFACES OF LID AND TUBE WITH DEVPREP 88 OR EQUAL, THEN COAT ALL SURFACES, NUTS AND BOLTS W/ DEVOE BAR-RUST 233H EPOXY UNDERCOAT, 2-3MILS, COLOR GRAY; THEN APPLY 2 COATS OF DEVOE ACRYLIC 1.5 MILS TO 2.0 MILS, EACH. COLOR SHALL BE HUNTER GREEN FOR POTABLE WATER AND RAW WATER; PURPLE FOR RECYCLED AND NONPOTABLE WATER.

3/8" THICK STEEL LID. IF NEEDED, TACK WELD 1/4" THICK BY 1" WIDE STEEL PLATE AROUND PERIMETER OF LID SO TOP OF LID IS FLUSH W/ TOP OF BOX. CUT 5" X 5" SQUARE HOLE IN TOP OF LID. SQUARE HOLE SHALL BE CENTERED RELATIVE TO WIDTH OF LID. LID SHALL BE BOLTED TO BOX. LID SHALL BE LABELED WITH BEAD WELDED LETTERS: "RECYCLED WATER" FOR RECYCLED AND NONPOTABLE WATER; "RAW WATER" FOR RAW WATER; AND UNLABELED FOR POTABLE WATER. LID & TUBE ASSEMBLY SHALL BE PWAE218M BY PLACER WATERWORKS OR EQUAL APPROVED BY THE WATER UTILITY.

WELD 2 LOCKING NUTS TO LID TO ACCEPT BOLTS.
 2" SCHEDULE 40 GALVANIZED STEEL PIPE W/ STEEL THREADED COUPLING AND 2" TO 1-1/2" PVC ADAPTER. SCWA OPERATOR MUST BE ABLE TO UNSCREW PVC RISER FROM COUPLING.

① 2" CRISPIN C-20 OR UL-20 COMBINATION AIR RELEASE/VACUUM VALVE OR SCWA APPROVED EQUAL
 ② 2"- BRASS NIPPLE (TYP)

③ COPPER PIPE, TYPE K, PER AWWA C800 W/ POLYETHYLENE ENCASMENT; CONTINUOUS PIPE, NO JOINTS PERMITTED (SEE NOTE 6 FOR AN EXCEPTION).

④ 2"- 90° COPPER FITTING (TYP)

⑤ 2" BRONZE METEER FLANGE

2"- 90° BRONZE FITTING (TYP)
 2" BRONZE BALL CORP. STOP WITH TEFLON COATED BALL.
 2"- 90° BRONZE FITTING (TYP)

NOTES:

1. MAINTAIN A MIN 2% CONTINUOUS UPWARD SLOPE FROM CORP STOP TO AIR VALVE. INSPECTOR SHALL VERIFY SLOPE EVERY 5 FEET OF RUN.
2. FLARE, SOLDER JOINT, OR COMPRESSION FITTINGS ARE ACCEPTABLE.
3. PROVIDE 3' X 3' X 3' OF 1/2" CRUSHED AGGREGATE FOR DRAINAGE AND SUPPORT UNDER VALVE, COMPACT TO 95%.
4. SEE PLANS FOR LOCATION INFORMATION. UNLESS OTHERWISE SPECIFIED, LOCATE BOX 2' BEHIND SIDEWALK.
5. BOX SHALL NOT BE INSTALLED IN LOCATIONS SUBJECT TO TRAFFIC.
6. IF IT IS NECESSARY TO RELOCATE AN EXISTING INSTALLATION THAT IS UNDER EXISTING PAVEMENT; NEW COPPER PIPE MAY BE JOINED TO EXISTING COPPER PIPE WITH A MUELLER 110 H-15403 CONNECTOR.

1-1/2" SCHEDULE 40 PVC CAP & WYE.
 3/16" STEEL, 6" X 6" SQUARE TUBE 18" HIGH WITH AN 8-1/2" DIAMETER CAP, SPOT WELDED AT THE TOP.

#16 MESH BRONZE OR STAINLESS STEEL SCREEN

1-1/2" SCHEDULE 40 PVC

RIVET 1" X 4" STAINLESS STEEL NAME PLATE THAT READS "SACRAMENTO COUNTY WATER".

2 EA. 3/8" BOLTS, GRADE 3 WITH WASHER.

1/2" COPPER TUBING.

H2O TRAFFIC RATED BOX TO ACCEPT BOLT DOWN METAL LID. BOX SHALL HAVE A MAXIMUM OF 17" X 30" INSIDE DIMENSION AS MADE BY CHRISTY, BROOKS OR EQUAL APPROVED BY THE WATER UTILITY.

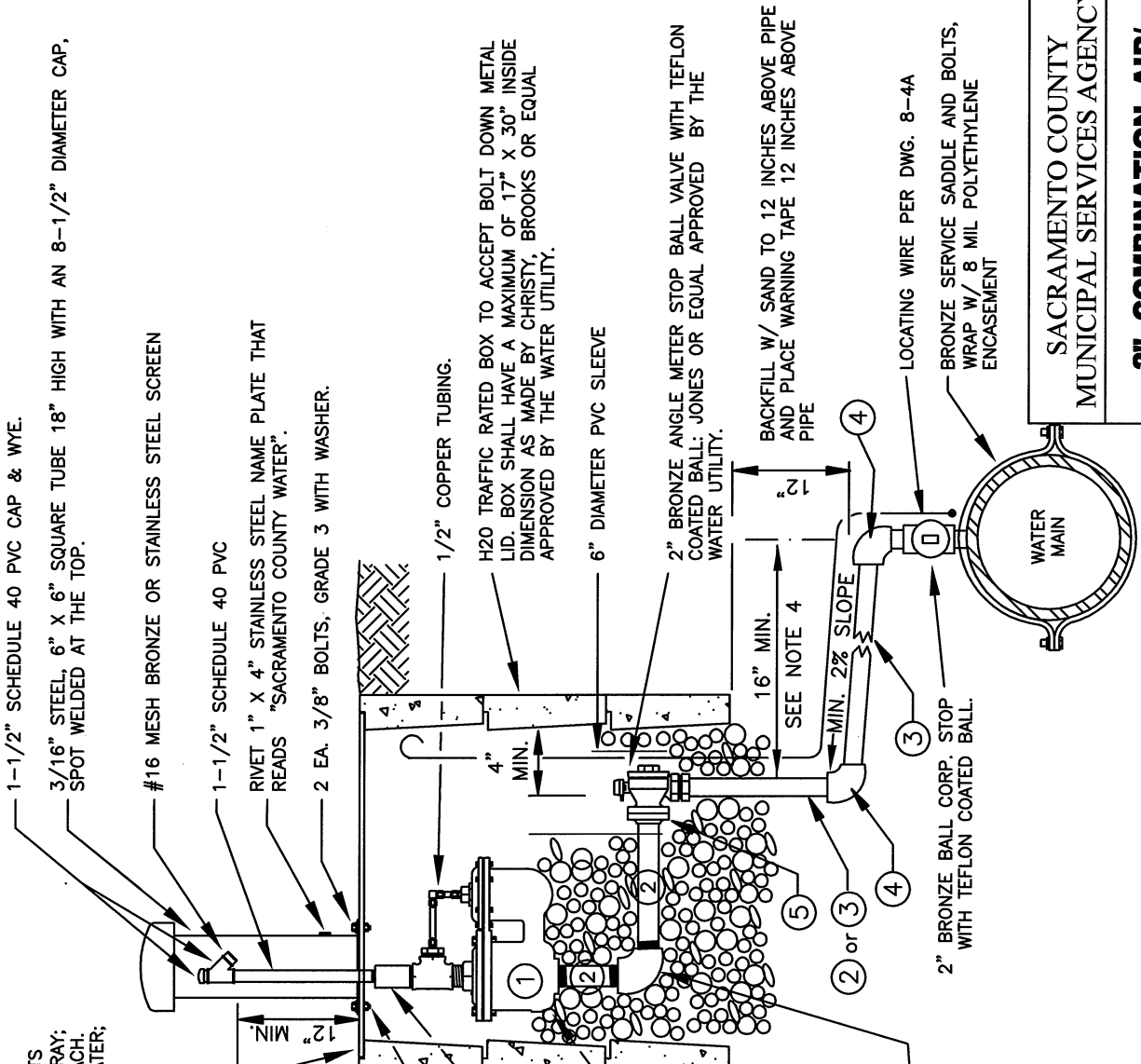
6" DIAMETER PVC SLEEVE

2" BRONZE ANGLE METER STOP BALL VALVE WITH TEFLON COATED BALL; JONES OR EQUAL APPROVED BY THE WATER UTILITY.

BACKFILL W/ SAND TO 12 INCHES ABOVE PIPE AND PLACE WARNING TAPE 12 INCHES ABOVE PIPE

LOCATING WIRE PER DWG. 8-4A

BRONZE SERVICE SADDLE AND BOLTS, WRAP W/ 8 MIL POLYETHYLENE ENCASMENT



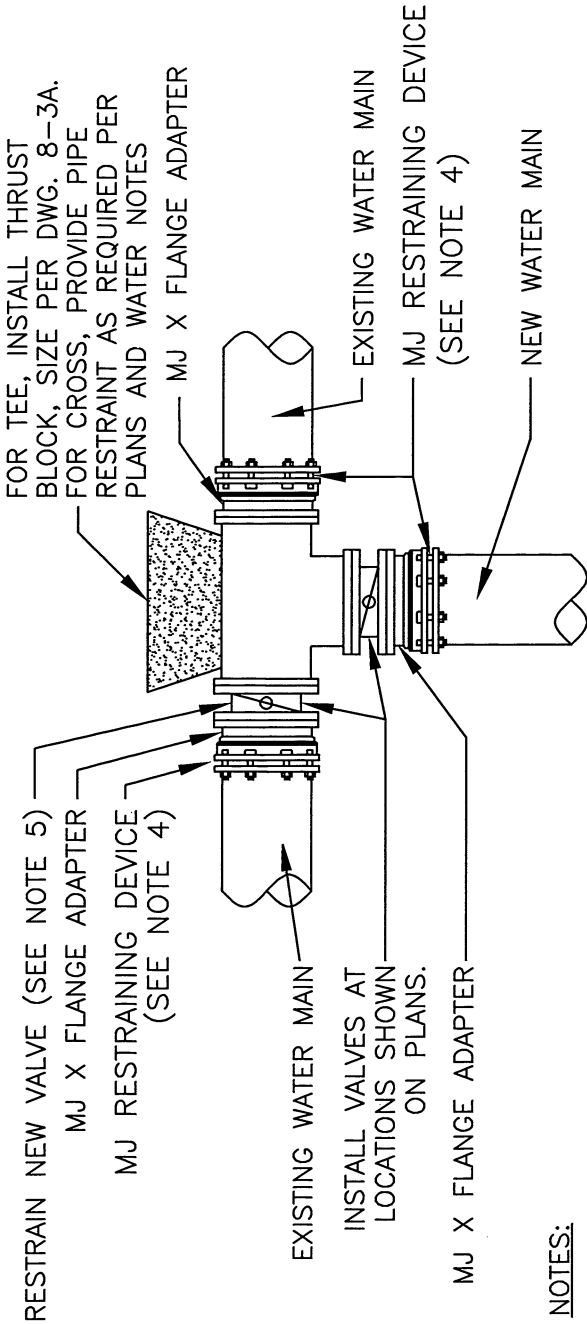
SACRAMENTO COUNTY
 MUNICIPAL SERVICES AGENCY

**2" COMBINATION AIR/
 VACUUM VALVE**

SCALE: NONE
 DATE: 8/13

8-14B

M. L. ...
 DIRECTOR, DEPARTMENT OF WATER RESOURCES



NOTES:

1. APPLICABILITY: THIS DETAIL SHALL BE USED WHEN (A) THE PLANS REQUIRE BOTH A NEW CONNECTION AND NEW IN-LINE VALVE IN AN EXISTING MAIN, OR WHEN (B) CALLED OUT ON THE PLANS.
2. DIG SUMP UNDER THE CUT AND PUMP ALL WATER FROM EXISTING MAIN AWAY FROM CUT-IN LOCATION. DO NOT ALLOW ANY WATER TO ENTER EXISTING PIPE. SPRAY EXISTING PIPE, ALL FITTINGS AND VALVES WITH A SOLUTION OF SUPER CHLORINATED WATER JUST PRIOR TO INSTALLATION.
3. RESTRAIN ALL JOINTS.
4. RESTRAINING DEVICES FOR MJ'S: FOR DUCTILE IRON USE EBAA MEGALUG 1100, STAR PIPE PRODUCTS STARGRIP 3000, OR SIGMA ONE-LOK SLIDE; FOR PVC PIPE USE EBAA 2000PV, STAR PIPE PRODUCTS STARGRIP 4000, OR SIGMA ONE-LOK SLCE.
5. RESTRAIN NEW IN-LINE VALVE WITH A CONCRETE ANCHOR BLOCK PER A DESIGN APPROVED BY THE WATER UTILITY. SUBMIT DESIGN TO WATER UTILITY FOR REVIEW AND APPROVAL.
6. CONNECT NEW LOCATING WIRE TO EXISTING LOCATING WIRE PER DWG. 8-4A.
7. FOR EXISTING ASBESTOS CEMENT (ACP) WATER MAINS: REMOVE EXISTING ACP 5 TO 10 FEET BEYOND EACH SIDE OF CUT-IN TO AN EXISTING ACP JOINT AND REPLACE WITH CLASS 350 DIP USING TRANSITION COUPLINGS (SMITH-BLAIR OMNI 442 WITH 1/2-INCH SLEEVE AND S.S. HARDWARE). PLACE CLSM 6-INCHES UNDER DIP TO SPRINGLINE WITHIN 5 FEET OF ACP.
8. BURIED METAL SHALL BE ENCASED WITH 8 MIL POLYETHYLENE SO THAT NO SOIL IS IN CONTACT WITH METAL.

FIT UP PROCEDURE:

1. CAREFULLY MEASURE AND CUT A SECTION FROM THE EXISTING WATER MAIN 1/4" LARGER THAN THE COMBINED MAKE UP OF THE FITTINGS AND GASKETS.
2. BOLT UP THE ASSEMBLY WITH THE EXCEPTION OF THE MJ X FL ADAPTERS.
3. LOOSELY BOLT THE MJ ADAPTERS TO THE ENDS OF THE PIPE. TWO-HOLE THE FLANGES AND LEAVE THE MJ BOLTS SNUG.
4. DROP IN THE FLANGED TEE AND VALVE ASSEMBLY AND SUPPORT THE VALVE WITH BLOCKS.
5. INSTALL THE BOTTOM TWO FLANGE BOLTS (THIS WILL SECURE THE GASKET IN PLACE WHILE ADJUSTMENTS ARE MADE TO THE MJ ADAPTERS).
6. ADJUST EVERYTHING LEVEL AND TO GRADE AND INSTALL ALL OF THE BOLTS AND NUTS ON THE FLANGES AND TIGHTEN.
7. TIGHTEN THE BOLTS FOR THE MJ GLANDS.
8. LASTLY, TIGHTEN THE MJ RESTRAINING BOLTS.

SACRAMENTO COUNTY
MUNICIPAL SERVICES AGENCY

**WATER MAIN
CUT - IN**

SCALE: NONE
DATE: 11/15

8-15

DIRECTOR, DEPARTMENT OF WATER RESOURCES

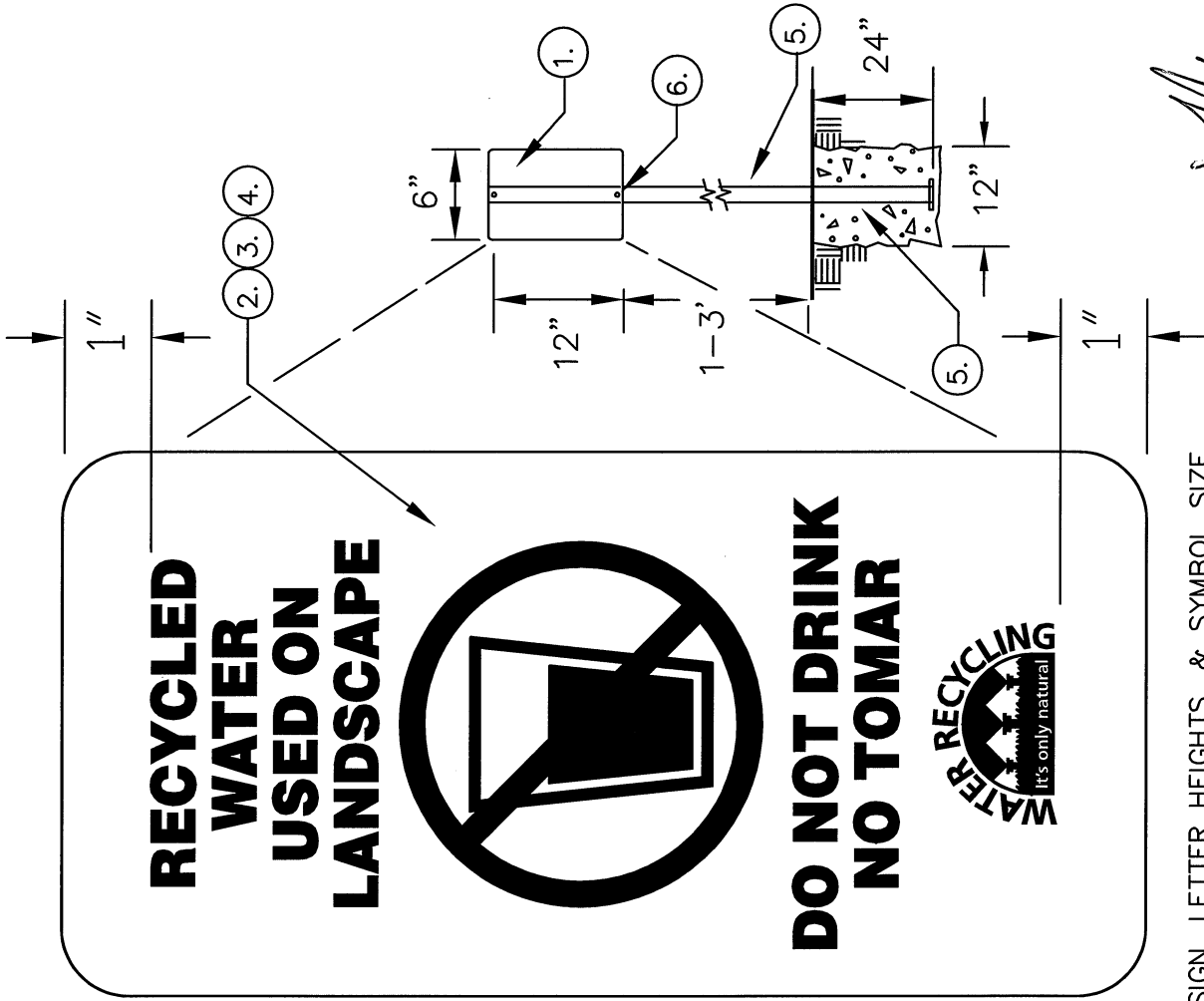
Michael J. [Signature]

NOTES:

1. 6" x 12" ALUMINUM SHEET ALLOY 6061-T6 0.080" GAUGE, ROUNDED CORNERS (1" RADIUS).
2. LETTER HEIGHT & SYMBOL SIZE SHALL BE PROPORTIONAL TO SIGN SIZE.
3. THE BACKGROUND SHALL BE WHITE. THE LETTERING SHALL BE PURPLE, THE GRASS GREEN, AND THE WATER BLUE.
4. LETTERING AND SYMBOL SHALL BE PRESSURE SENSITIVE VINYL. CLEAR COAT ENTIRE SIGN ONCE LETTERING AND SYMBOLS ARE ATTACHED.
5. 1"x1" SQUARE STEEL POST PAINTED WHITE TO MATCH SIGN BACKGROUND. CAP OFF POST AND FINISH CLEAN. PROVIDE REBAR AT END FOR CONCRETE INSTALLATION AT 24 INCH DEPTH.
6. 5/16"Ø x 4-1/2" ZINC PLATED CARRIAGE BOLT WITH VANDAL PROOF NUTS. PAINT WHITE TO MATCH SIGN.

WHEN MOUNTING ON WALLS OR CHAIN LINK FENCE, PROVIDE 1/4 INCH HOLES IN ALL FOUR CORNERS.

3" x 4-1/2" PRESSURE SENSITIVE DECALS ARE REQUIRED FOR IRRIGATION CONTROLLERS AND OTHER ABOVE GROUND FACILITIES REQUIRING A WARNING SIGN. WHEN CONDITIONS AND/OR FACILITY CHARACTERISTICS RENDER THESE SPECIFICATIONS INAPPROPRIATE, ALTERNATIVE SIGNING SHALL BE SUBMITTED FOR REVIEW AND APPROVAL BY THE WATER UTILITY.



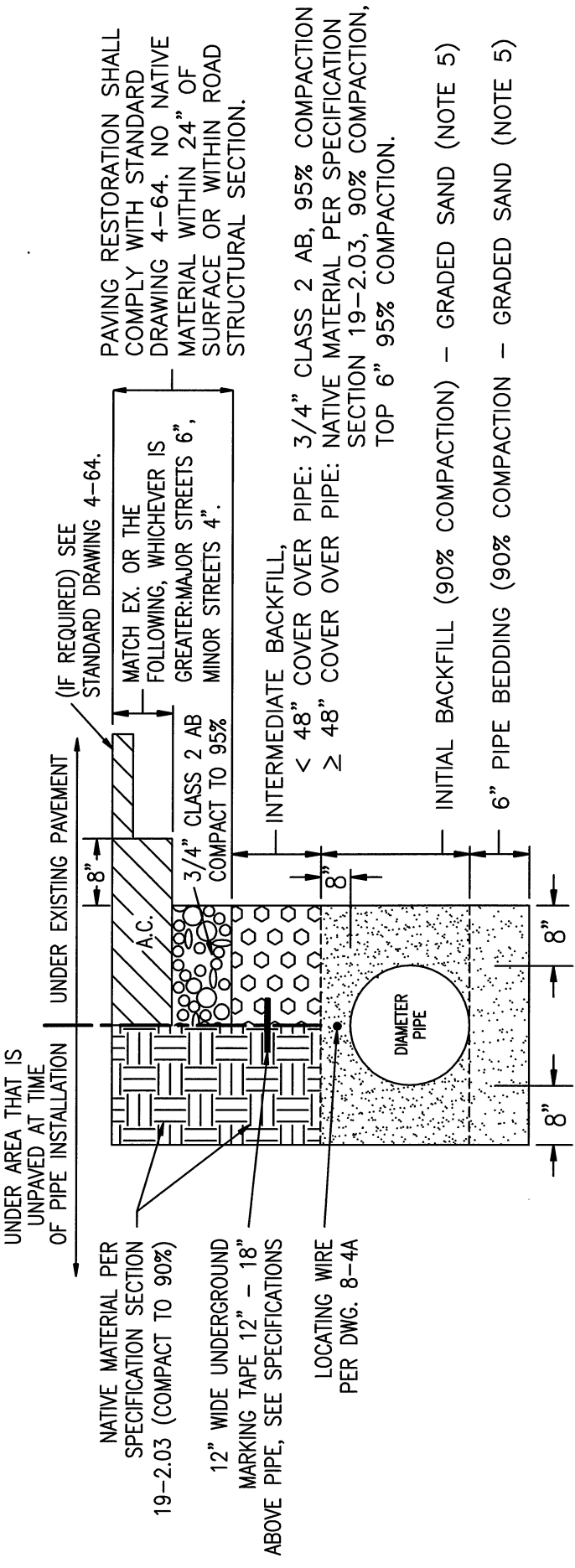
SIGN, LETTER HEIGHTS, & SYMBOL SIZE SHOWN ARE IN REQUIRED PROPORTIONS

SACRAMENTO COUNTY
MUNICIPAL SERVICES AGENCY

RECYCLED WATER SIGN

SCALE: NONE
DATE: 8/13

Michael J. Peters
DIRECTOR, DEPARTMENT OF WATER RESOURCES



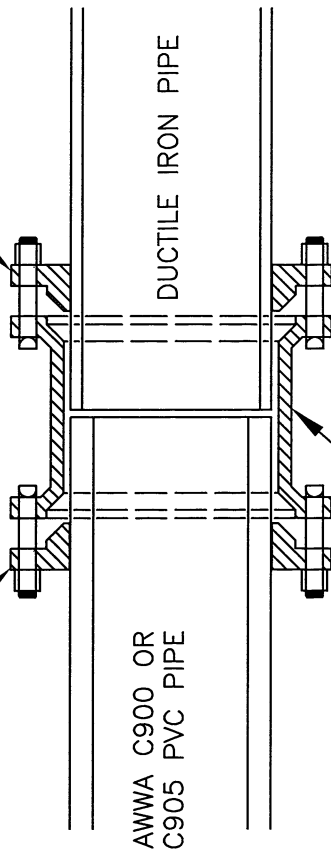
NOTES:

- SEE THE COUNTY OF SACRAMENTO STANDARD CONSTRUCTION SPECIFICATIONS, IMPROVEMENT STANDARDS, AND THE PROJECT WATER NOTES FOR REQUIREMENTS.
- 6" & 8" DIMENSIONS SHALL INCLUDE DISTANCE BETWEEN PIPE BELL AND TRENCH WALL.
- EXCAVATION, BEDDING, AND BACKFILL SHALL COMPLY WITH STANDARD SPECIFICATION SECTION 19.
- COORDINATE COMPACTION TESTS WITH RESIDENT ENGINEER.
- PIPE BEDDING AND INITIAL BACKFILL REQUIREMENTS ARE THE SAME FOR BOTH TYPES OF TRENCHES.
- IF USED, BATCH-PLANT BASED TRENCH BACKFILL MATERIAL USED IN PLACE OF NATIVE MATERIAL SHALL BE DESIGNED WITH A 28-DAY COMPRESSIVE STRENGTH OF 100 PSI. STRONGER MIXES ARE NOT PERMITTED.

Michael L. Patten
DIRECTOR, DEPARTMENT OF WATER RESOURCES

MJ RESTRAINING DEVICE FOR
PVC PIPE (IF REQUIRED),
SEE NOTES

MJ RESTRAINING DEVICE FOR
DUCTILE IRON PIPE (IF REQUIRED),
SEE NOTES



DUCTILE IRON MECHANICAL JOINT LONG
SLEEVE, AWWA C110 OR AWWA C153.

NOTES:

1. THIS DETAIL SHALL BE USED AT ALL IN-LINE TRANSITIONS BETWEEN PVC PIPE AND DUCTILE IRON PIPE.
2. TRANSITIONS SHALL BE LOCATED OUTSIDE OF RESTRAINED AREAS, UNLESS APPROVED BY THE WATER UTILITY.
3. TRANSITIONS LOCATED WITHIN RESTRAINED AREAS SHALL BE RESTRAINED. RESTRAINING DEVICE FOR THE PVC PIPE SIDE SHALL BE EBAA 2000PV, STAR PIPE PRODUCTS STARGRIP 4000, OR SIGMA ONE-LOK SLCE. RESTRAINING DEVICE FOR THE DUCTILE IRON PIPE SIDE SHALL BE EBAA MEGALUG 1100, STAR PIPE PRODUCTS STARGRIP 3000, OR SIGMA ONE-LOK SLDE.
4. RESTRAINING DEVICES NOT REQUIRED IF TRANSITION IS NOT IN A RESTRAINED AREA.
5. ALL BURIED METAL SHALL BE ENCASED WITH 8 MIL POLYETHYLENE SO THAT NO SOIL IS IN CONTACT WITH METAL.
6. FOR EXISTING ASBESTOS CEMENT (ACP) WATER MAINS:
CONNECT NEW WATER MAINS TO EXISTING ACP WITH SMITH-BLAIR
OMNI 442 TRANSITION COUPLINGS, WITH 12-INCH SLEEVE AND
S.S. HARDWARE.

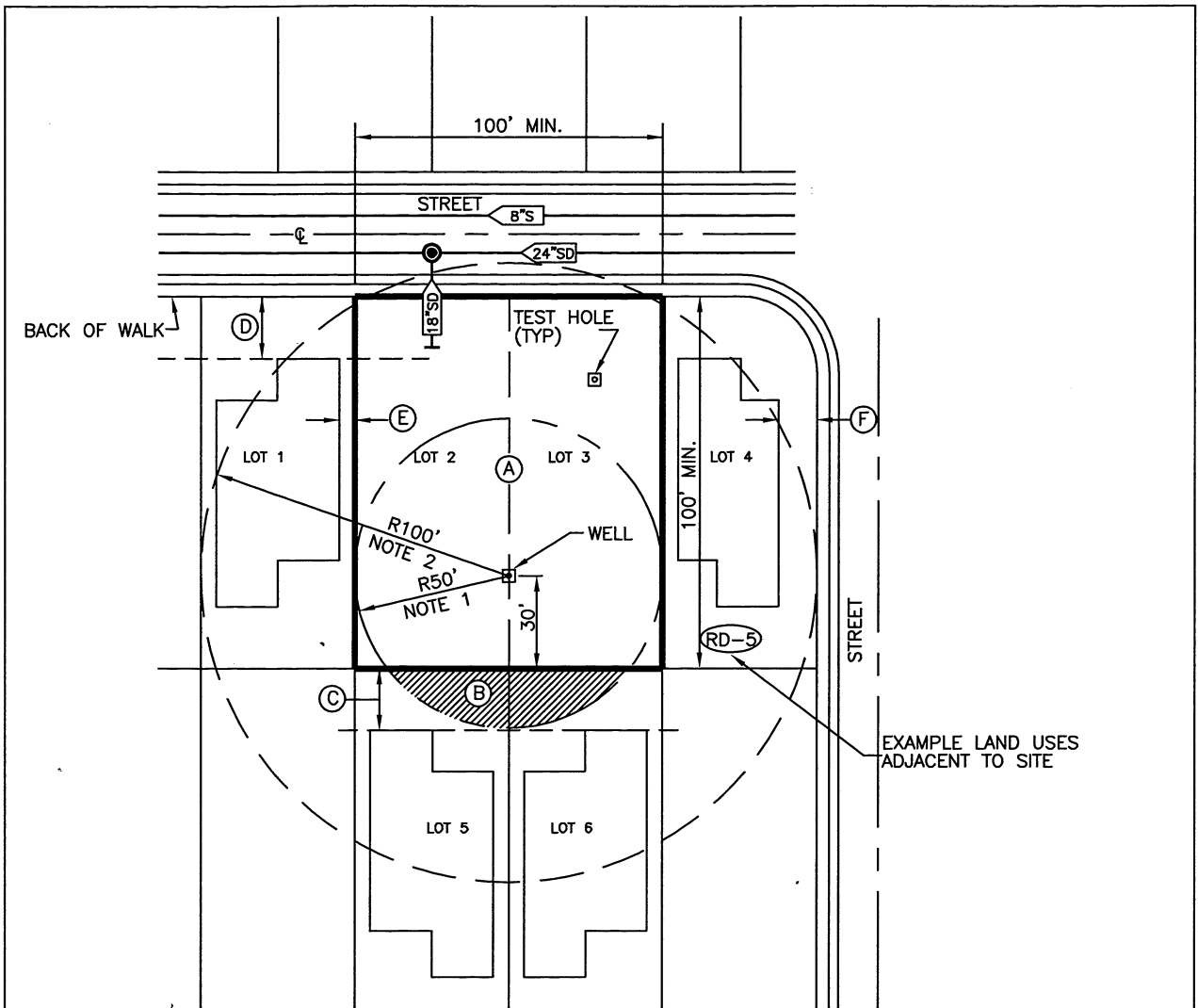
SACRAMENTO COUNTY
MUNICIPAL SERVICES AGENCY

TRANSITION SLEEVE

SCALE: NONE
DATE: 11/15

DIRECTOR, DEPARTMENT OF WATER RESOURCES

8-18



NOTES :

1. 50' RADIUS PRIMARY DRINKING WATER SOURCE PROTECTION ZONE: NO SEWER, STORMWATER, OR INDUSTRIAL LINES; NO LATERAL LINES; NO HOUSE FOUNDATIONS.
2. 100' RADIUS SECONDARY DRINKING WATER SOURCE PROTECTION ZONE: NO SEWER OR STORMWATER MAINS; NO DRAINAGE CHANNELS.
3. 200' SETBACK REQUIRED FROM FORCE MAINS (SEWER, STORMWATER, INDUSTRIAL), UNDERGROUND FUEL TANKS, SEPTIC TANKS, LEACH LINES, AND STABLES.
4. 500' SETBACK REQUIRED FROM PETROLEUM PIPELINES.
5. MINIMUM WELL LOT SIZE IS 100' X 100'. EXAMPLE RD-5 LOT SIZE TAKEN AS 50' X 120'.
6. ANY STRUCTURE(S) PROPOSED WITHIN THE SPECIAL PROVISION AREA ARE SUBJECT TO REVIEW AND APPROVAL BY THE WATER UTILITY FOR COMPLIANCE WITH THE DRINKING WATER SOURCE PROTECTION SETBACKS.
7. CONTACT THE WATER UTILITY FOR SPECIFIC INFORMATION ON A CASE-BY-CASE BASIS.
8. WELL SITES SHALL BE PROVIDED WITH A WATER SERVICE, A STORM DRAIN STUB SIZED FOR WELL CAPACITY (TYP. 1500 GPM), A 480V 3-PHASE 250-300 AMP ELECTRIC SERVICE, AND A 20-FOOT COMMERCIAL DRIVEWAY.

LEGEND :

- (A) WELL SITE IS TWO LOTS (TYPICAL)
- (B) SPECIAL PROVISION AREA
- (C) 20' MINIMUM SETBACK, REAR YARD.
- (D) 20' MINIMUM SETBACK, FRONT YARD.
- (E) 5' MINIMUM SETBACK, SIDE YARD.
- (F) 12.5' MINIMUM SETBACK, SIDE STREET YARD.

M. J. [Signature]
 DIRECTOR, DEPARTMENT OF WATER RESOURCES

**SACRAMENTO COUNTY
 MUNICIPAL SERVICES AGENCY**

TYPICAL WELL SITE

SCALE: NONE
 DATE: 11/15

8-19