

**BEDDING AND MATERIALS:**

- TYPE "A" MATERIAL:** 5/16 MINUS IMPORTED SCREENED SAND WITH MINIMUM SAND EQUIVALENT OF 50 PER CTM 217. ALL GRADATIONS TO BE APPROVED BY DISTRICT PRIOR TO CONSTRUCTION.
- TYPE "B" MATERIAL:** CLASS 2 AGGREGATE BASE (AB) PER CAL TRANS STANDARD SPECIFICATIONS.
- TYPE "D" MATERIAL:** CRUSHED ROCK OR SOIL-ROCK MIXTURE (NATIVE) NOT TO EXCEED 3". UP TO A 6" MINUS MATERIAL MAY BE USED WITH SPECIAL CONSIDERATIONS AND CONDITIONS APPROVED BY CITY AND GEOTECHNICAL ENGINEER. THE MATERIAL WILL BE COMPLETELY FREE OF WOOD, ROOTS OR OTHER DELETERIOUS MATERIAL. MATERIAL NOT BE USED WITHIN 24" OF TOP OF PIPE WITHOUT CITY ENGINEERS APPROVAL. COMPACTION WILL BE BY VIBRATORY EQUIPMENT OR OTHER APPROVED DEVICES. THE CITY MAY REQUIRE THAT THE MATERIAL BE SCREENED. A LAYER OF GEOTEXTILE FABRIC WILL BE PLACED BETWEEN THE PIPES AND INTERMEDIATE BACKFILL ZONE. MATERIAL WILL ONLY BE USED WITH GEOTECHNICAL ENGINEER'S RECOMMENDATION AND WITH APPROVAL OF THE ENGINEER.

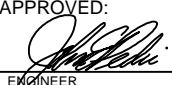
**NOTES:**

1. CREEK CROSSING OR SHALLOW TRENCH SHALL REQUIRE SPECIAL POPE PER APPROVAL OF ENGINEER.
2. BEDDING FOR OTHER APPROVED PIPE TO BE APPROVED BY ENGINEER AND PER ASTM C12.
3. DISTRICT WILL REQUIRE CUT-OFF WALLS AND TRENCHES TO CONTROL PERMEABILITY AND/OR REQUIRE GEOTEXTILE BARRIER WRAP FOR MATERIAL NOT MEETING A TYPE "A" OR "B" MATERIAL SPEC WHERE REQUIRED.
4. SHOVEL SLICING TO BE USED ALONG WITH MECHANICAL (VIBRATORY) AT 12" MAX LOOSE LIFTS.
5. IN AREAS WHERE GROUNDWATER IS ENCOUNTERED, AN APPROVED 1" CRUSHED ROCK TO BE USED FOR PIPE BEDDING (OVER-EXCAVATE 12")
6. TYPE "D" MATERIAL MAY ONLY BE USED WITH ENGINEER APPROVAL AND GEOTECHNICAL ENGINEER RECOMMENDATION IN NON-TRAFFIC AREAS
7. LAKE DPW ENCROACHMENT PERMIT MAY INCLUDE OTHER REQUIREMENTS INCLUDING COMPACTION TESTING AND OTHER REQUIREMENTS NOT SHOWING IN DETAIL
8. ALL PVC PIPE TO BE SDR 26 (GRAVITY SEWER)
9. WORK WITHIN CALTRANS RIGHT OF WAY MAY CONTAIN SPECIAL CONDITIONS INCLUDING ENCASEMENTS

**CLEARLAKE OAKS COUNTY WATER DISTRICT  
WATER DEPARTMENT**

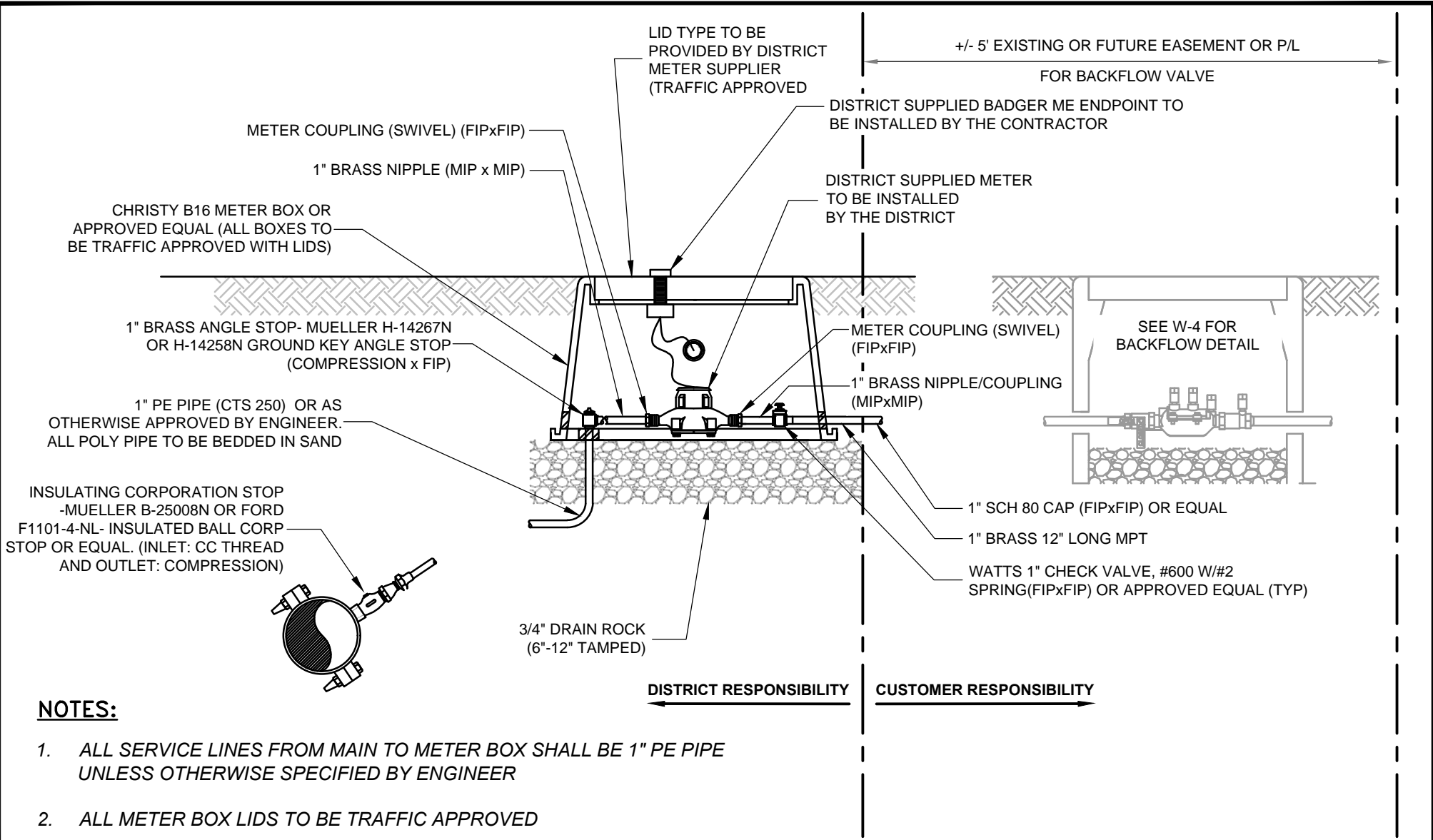
**TYPICAL WATER  
TRENCH DETAIL**

APPROVED:  
\_\_\_\_\_  
DISTRICT MANAGER DATE

APPROVED:  
  
ENGINEER DATE 5/10/24

REVISIONS:	DATES:

SCALE: NONE  
DATE: MAY 2024  
DRAWN BY: JD/JP



**NOTES:**

1. ALL SERVICE LINES FROM MAIN TO METER BOX SHALL BE 1" PE PIPE UNLESS OTHERWISE SPECIFIED BY ENGINEER
2. ALL METER BOX LIDS TO BE TRAFFIC APPROVED
3. ALL PIPE AND FITTING MATERIAL(S) WITHIN METER BOX TO BE BRASS (AWWA APPROVED). LIMIT WHERE POSSIBLE NUMBER OF FITTINGS AND JOINTS. LIMIT USE OF POLY PIPE, WITH METER BOX
4. ALL FITTINGS SHOULD BE A LEAD-FREE PRODUCT
5. CUSTOMER RESPONSIBLE FOR STUB CONNECTION FROM METER BOX

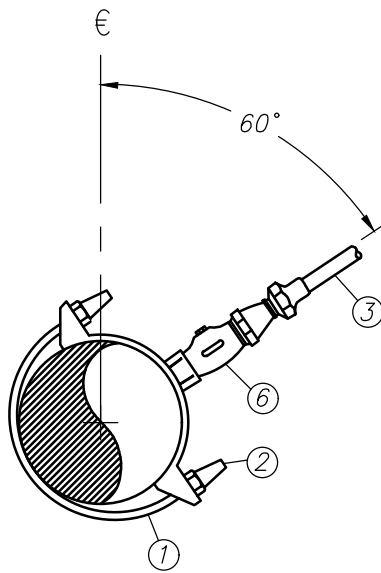
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ENGINEER	DATE
	5/10/24

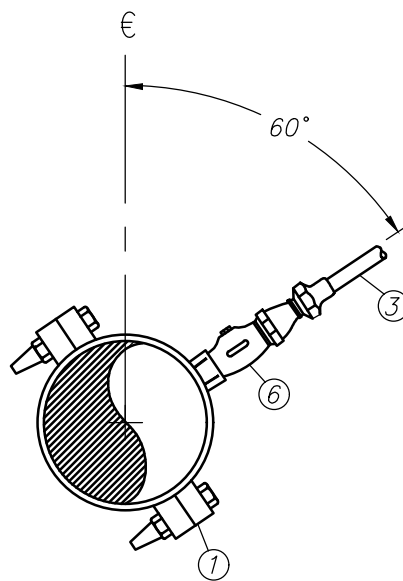
CLEARLAKE OAKS COUNTY WATER DISTRICT  
WATER DEPARTMENT

**RESIDENTIAL METER BOX**

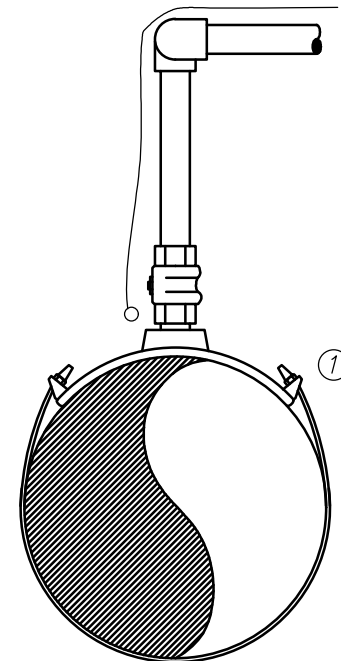
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DATE: MAY 2024	
DRAWN BY: JD/JP	



DOUBLE STRAP  
DUCTILE IRON PIPE SADDLE



PVC PIPE SADDLE



ARV AND BLOWOFF SADDLE

MATERIALS/NOTES:

1. BRASS SADDLE FOR PVC MAIN - ROMAC 202S AND FOR DUCTILE IRON MAIN - USE ROMAC OR FORD BRASS 101BS W/SST FOR PVC MAINS OR EQUAL
2. ZINC CAPS ON ALL BOLTS (ONLY WITH NON-INSULATED CORPORATION STOP
3. POLYETHYLENE PIPE SHALL BE 250 PSI CTS OR BRASS FOR ARVs (ONLY)
4. SADDLES SHALL BE WRAPPED IN 8 MIL POLYETHYLENE AND BACKFILLED WITH 5/16 INCH MINIS.
5. TRACING WIRE SHALL BE REQUIRED ON ARV, HYDRANT RUNS, BLOW OFFS, SERVICES WITHOUT CONTINUOUS COPPER PIPE, AND OTHER MAJOR APPURTENANCES.
6. INSULATING CORPORATION STOP TO BE MUELLER B-25008N OR FORD F1101-4-NL INSULATED BALL CORP STOP OR EQUAL. (INLET: CC THREAD AND OUTLET: COMPRESSION)

CLEARLAKE OAKS COUNTY WATER DISTRICT  
WATER DEPARTMENT

**SERVICE SADDLE  
CONNECTION DETAIL**

REVISIONS:	DATES:

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APPROVED:	5/10/24
ENGINEER	DATE

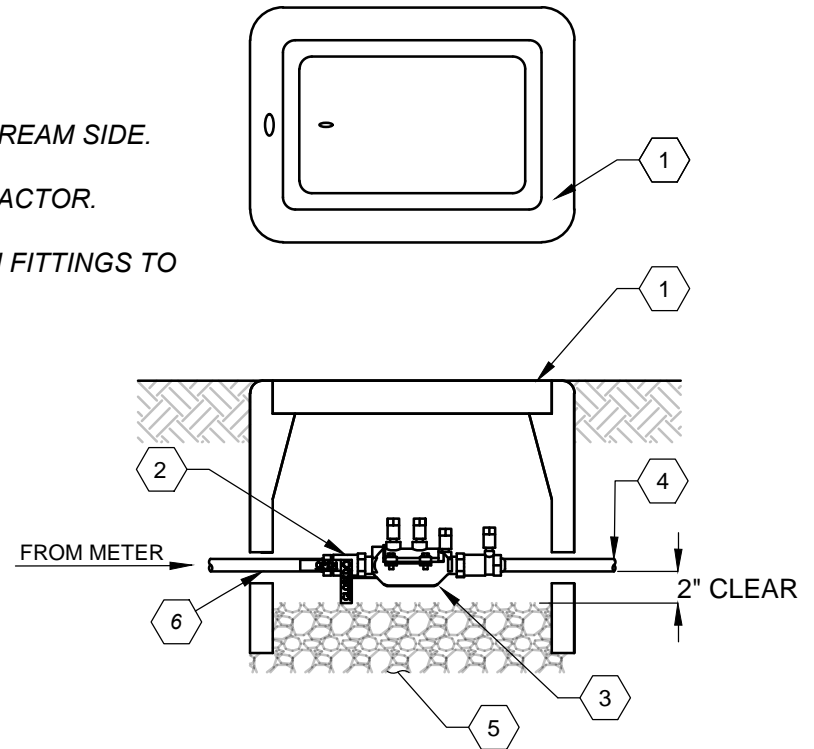
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W-3

- 1 CHRISTY B9 BOX WITH TRAFFIC APPROVED LID (C15), OR APPROVED EQUAL.
- 2 1" BALL VALVE, BALL VALVE TO BE FIR OR COMPRESSION FOR FITTINGS ON UPSTREAM SIDE.
- 3 DOUBLE CHECK BACKFLOW PREVENTION ASSEMBLY TO BE SUPPLIED BY CONTRACTOR.
- 4 BRASS NIPPLE, CUT TO LENGTH, WRAPPED WITH PVC TAPE. WITH COMPRESSION FITTINGS TO EXISTING SERVICE LINES, OR SCH 80 PVC WITH COMPRESSION FITTINGS.
- 5 3/4" CRUSHED ROCK (6" MIN) BELOW AND AROUND BOX.
- 6 1" BRASS NIPPLE TO METER (MIP x MIP) - 12" MINIMUM LENGTH. 1" FEMALE THREADED ADAPTER OK.

**NOTES:**

- 1. INSTALL ASSEMBLY A MINIMUM OF 12" FROM STRUCTURES OR HARDSCAPING. WHERE POSSIBLE.
- 2. INSTALL ASSEMBLY IN PLANTING BEDS WHEREVER POSSIBLE.
- 3. PLACE VALVE BOX AT RIGHT ANGLES TO STRUCTURES OR HARDSCAPING.
- 4. INSTALL VALVE BOX SO THAT TOP OF VALVE BOX IS FLUSH WITH ADJACENT HARDSCAPING.
- 5. PLACE 3/4" DIA. DRAIN ROCK (TAMPED) PRIOR TO INSTALLATION OF VALVE BOX (6" - 10" BELOW VALVE).
- 6. BACKFLOW ASSEMBLY TO BE CENTERED IN BOX.
- 7. INSTALL BPA WITHIN 36 INCHES OF WATER METER.
- 8. ALL BOXES AND LIDS TO BE SUPPLIED BY CONTRACTOR.
- 9. USE BRASS NIPPLES ONLY OR SCH80 PVC WITH APPROVAL OF DISTRICT.
- 10. ALL CUSTOMERS ARE RESPONSIBLE FOR THE ANNUAL TESTING INCLUDING INSTALLATION AND MAINTENANCE FOR NEWLY INSTALLED BACKFLOW DEVICES.



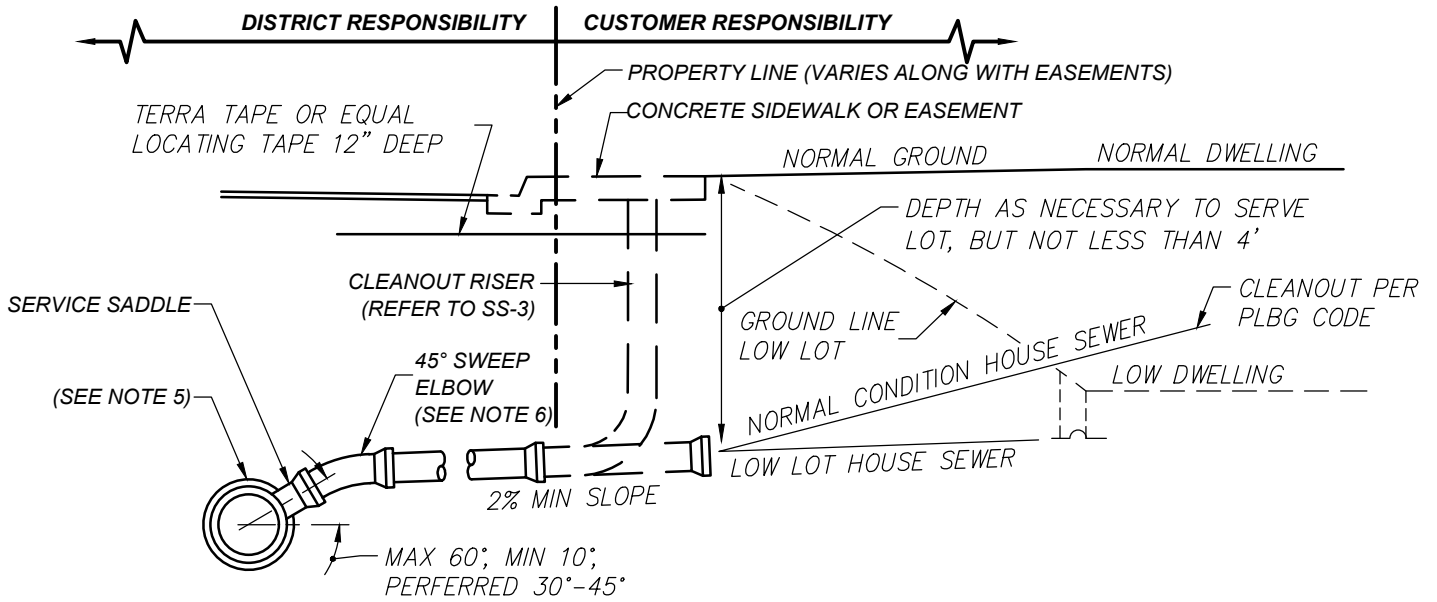
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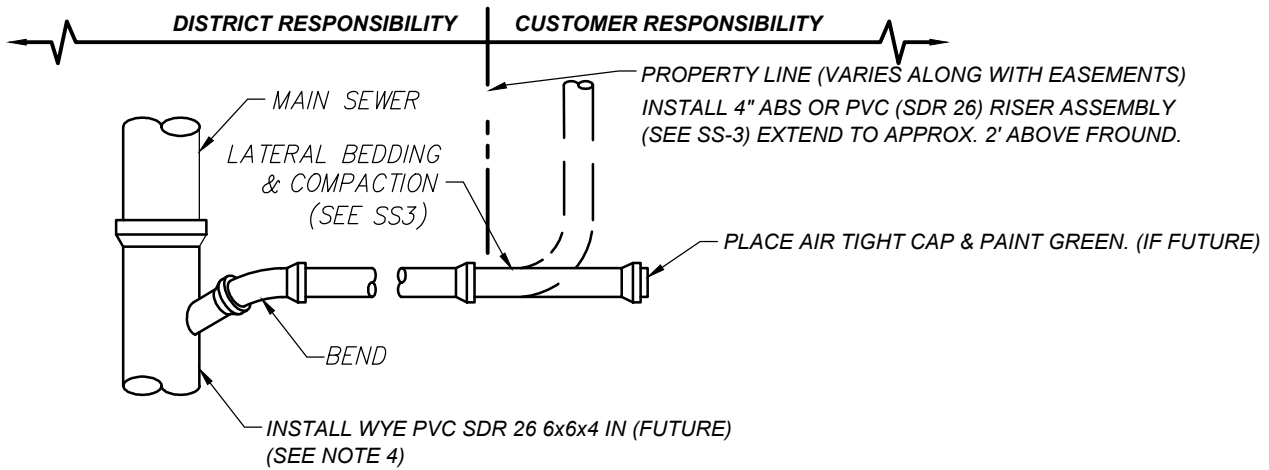
CLEARLAKE OAKS COUNTY WATER DISTRICT  
WATER DEPARTMENT

**RESIDENTIAL BACKFLOW  
DEVICE**

SCALE: NONE	W-4
DATE: MAY 2024	
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**EXISTING MAIN SERVICE SADDLE CONNECTION (NEW SERVICE)**



**FUTURE (NEW CONSTRUCTION) WYE CONNECTION**

**NOTES:**

1. LARGER THAN 6" SHALL BE CONNECTED TO MAIN WITH A MANHOLE.
2. FIELD CUT PIPE JOINTS SHALL USE FERNCO OR EQUAL MOLDED COUPLING. (FERNCO MODEL "STRONGBACK" RC 1000 COUPLINGS OR EQUAL)
3. BEDDING AND PIPE BACKFILL TO BE TYPE A OR B MATERIAL PER W-1
4. SERVICE CONNECTIONS FOR NEW MAIN PIPELINES USE PVC SDR 26 6x6x4 IN. GASKET x DWV WYE FITTING OR EQUAL.
5. EXISTING MAIN CUT-IN (TAP) USE ROMAC STYLE CB 6"x4" WITH STAINLESS STEEL STRAP OR EQUAL
6. SEWER BACKFLOW DEVICES ARE RECOMMENDED WHERE THE MAIN SEWER LINES, IF PLUGGED CAN DIVERT WASTE FLOWS INTO THE HOUSE SERVICE AND INTO THE IMPROVED BUILDING.
7. CUSTOMER IS RESPONSIBLE FOR THE OPERATION AND MAINTENANCE OF THE HOUSE SERVICE FROM THE PROPERTY LINE TO THE HOUSE

**CLEARLAKE OAKS COUNTY WATER DISTRICT  
WASTEWATER DEPARTMENT**

**SEWER LATERAL  
DETAIL**

REVISIONS:	DATES:

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SCALE: NONE  
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**SS-1**

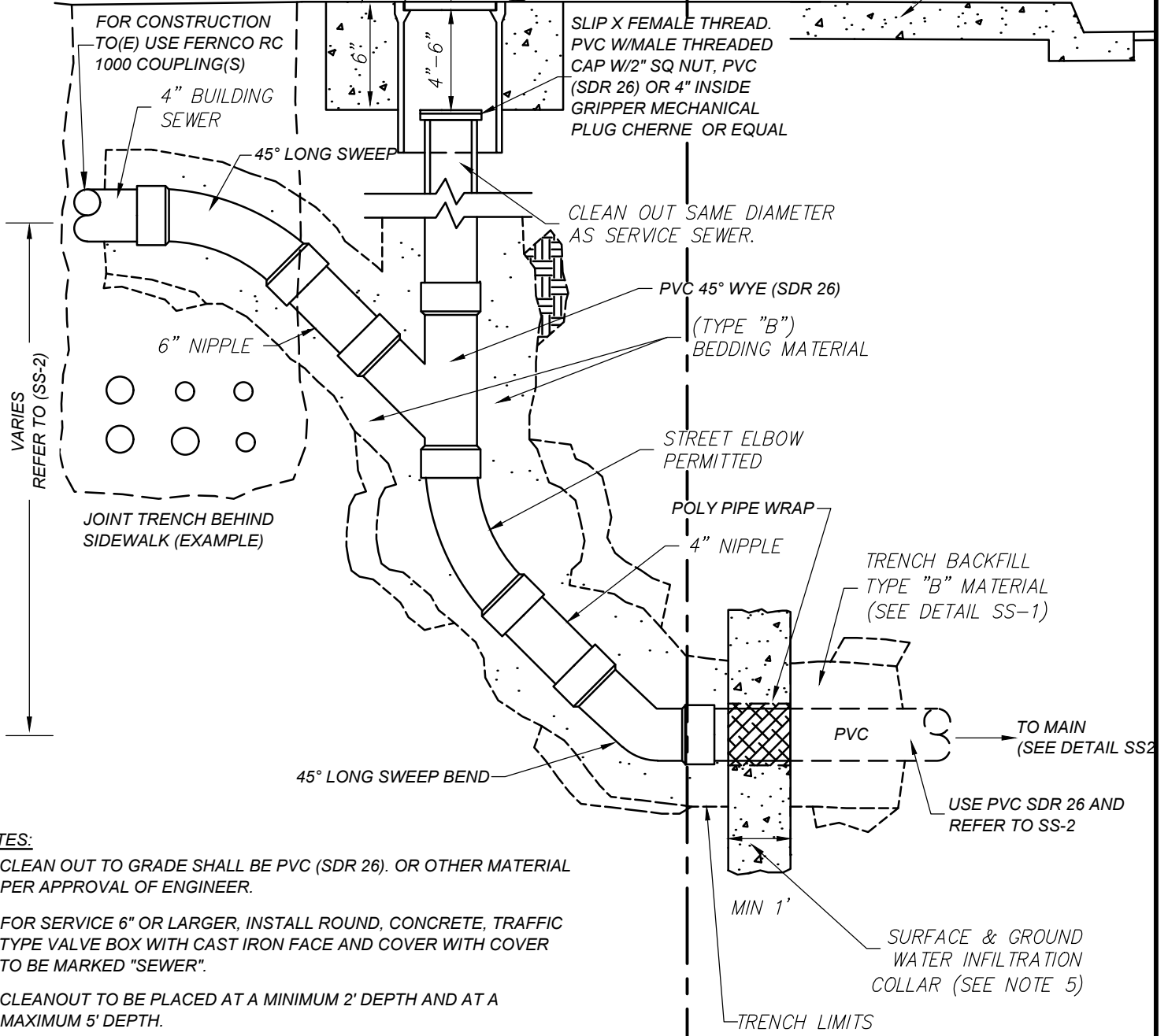
CONCRETE COLLAR IS TO BE INSTALLED AROUND ALL NEW AND EXISTING CLEANOUTS IN PAVED OR CONCRETE SURFACES. 12" DIAMETER CONCRETE COLLAR CLASS 520-C-2500

VARIES DEPENDING ON EXISTING CONDITION & DRY UTILITY JOINT TRENCH AND/OR LOCATION OF PROPERTY LINE

CLEANOUTS TO BE CHRISTY G5 (TRAFFIC APPROVED) IN PAVEMENT OR LANDSCAPE CARSON 910 (NON TRAFFIC) OR EQUAL

CUSTOMER RESPONSIBILITY DISTRICT RESPONSIBILITY

VARIES SIDEWALK



**NOTES:**

- CLEAN OUT TO GRADE SHALL BE PVC (SDR 26). OR OTHER MATERIAL PER APPROVAL OF ENGINEER.
- FOR SERVICE 6" OR LARGER, INSTALL ROUND, CONCRETE, TRAFFIC TYPE VALVE BOX WITH CAST IRON FACE AND COVER WITH COVER TO BE MARKED "SEWER".
- CLEANOUT TO BE PLACED AT A MINIMUM 2' DEPTH AND AT A MAXIMUM 5' DEPTH.
- 4'x4' REDWOOD POST PAINTED GREEN MAY BE USED TO MARK BURIED SERVICES FOR NEW CONNECTIONS AND NEW MAINLINE CONSTRUCTION ONLY
- USE EITHER CONTROLLED DENSITY FILL, BENTONITE, OR APPROVED EQUAL FOR CUTOFF WALL (OPTIONAL BASED ON ENGINEERS RECOMMENDATION)
- PROPERTY LINE IS FIXED BUT UTILITY EASEMENTS MAY VARY. THE MAINTENANCE AND OWNERSHIP RESPONSIBILITY OF CLEANOUT TO BE THE DISTRICT EITHER IN EASEMENT OR PUBLIC R/W
- ALL SEWER SERVICE PIPE MATERIAL TO BE PVC (SDR 26) OR ABS (SOLIDCORE) AS APPROVED BY DISTRICT

REVISIONS:	DATES:

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ENGINEER	DATE

CLEARLAKE OAKS COUNTY WATER DISTRICT  
WASTEWATER DEPARTMENT

**PVC CLEANOUT TO GRADE  
(SINGLE HOUSE SERVICE)**

SCALE: NONE  
DATE: MAY 2024  
DRAWN BY: JD/JP

SS-2