

TUOLUMNE UTILITIES DISTRICT

18885 NUGGET BLVD.
SONORA, CALIFORNIA 95370
(209) 532-5536

STANDARD DRAWINGS

**THESE DRAWINGS ARE TO BE REFERENCED ONLY
ON CONSTRUCTION PLANS SUBMITTED FOR
DISTRICT REVIEW. THE LATEST VERSIONS WILL BE
PROVIDED BY T.U.D. AT TIME OF CONSTRUCTION.**

AUTOCAD DRAWING FILES ARE AVAILABLE

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NUMERICAL INDEX

GENERAL

- 100 INDEX
- 101 GENERAL NOTES
- 102 STANDARD TRENCH FOR WATER AND SEWER
- 103 CREEK CROSSING FOR WATER AND SEWER MAINS AND BORE & JACK CASING
- 104 ROAD CROSSING OVER RAW-WATER DITCH

WATER

- 201 GATE VALVE INSTALLATION
- 202 WATER MAIN VALVE LOCATIONS AND THRUST BLOCKS
- 203 COMBINATION AIR VALVE ("AIR/VAC")
- 204 FIRE HYDRANT INSTALLATION
- 205 FIRE HYDRANT NEAR FILL SLOPE AND HYDRANT BOLLARDS
- 206 BLOWOFF AT END 4" WATER MAIN
- 207 WATER SERVICE LATERAL CONNECTIONS
- 208 WATER SERVICE BOX AND PRESSURE-REDUCING VALVE
- 209 WATER MAIN CONNECTION TO EXISTING WATER MAIN
- 210 DOUBLE CHECK DETECTOR ASSEMBLY
- 211 DOUBLE CHECK DETECTOR ASSEMBLY FOR PROJECT UNDER CONSTRUCTION
- 212 RAW-WATER MAIN LOW-POINT BLOWOFF
- 213 WATER MAIN CONSTRUCTED NEAR EXISTING SEWER MAIN
- 214 PRESSURE REDUCING STATION
- 215 RAW-WATER SERVICE ON PRESSURE PIPELINE
- 216 SAMPLE STATION
- 217 REDUCED-PRESSURE BACKFLOW PREVENTION ASSEMBLY
- 218 MASTER WATER METER

SEWER

- 301 STANDARD 48" MANHOLE WITH CAST-IN-PLACE BASE
- 302 MANHOLE DROP CONNECTION
- 303 SEWER CONNECTION TO EXISTING MANHOLE
- 304 SEWER MAIN PRESSURE TEST
- 305 SEWER MAIN CONSTRUCTED NEAR EXISTING WATER MAIN
- 306 SEWER FORCE-MAIN AIR-VACCUM VALVE
- 307 SEWER FORCE-MAIN LOW-POINT VAULT
- 308 SEWER FORCE-MAIN BLOWOFF/CLEANOUT
- 309 PRIVATE PUMP SYSTEM TO GRAVITY SEWER MAIN
- 310 PRIVATE PUMP SYSTEM TO FORCE-MAIN OR PRESSURIZED INTERCEPTOR
- 311 SEWER SERVICE, CLEANOUT AND FLUSHING BRANCH
- 312 RECLAMATION SYSTEM SERVICE CONNECTION (4" & 6" CONNECTIONS)

CUSTOMER SERVICE

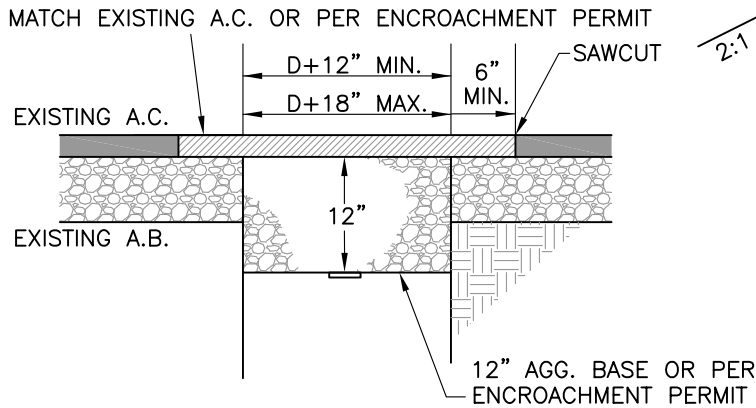
- 401 SEWER BACKFLOW PROTECTION
- 402 GRAVITY SEWER SERVICE INSTALLATION
- 403 APPLE VALLEY ESTATES & ROGUE RIVER CT. SEWER CONNECTION

ALPHABETIZED DRAWING INDEX

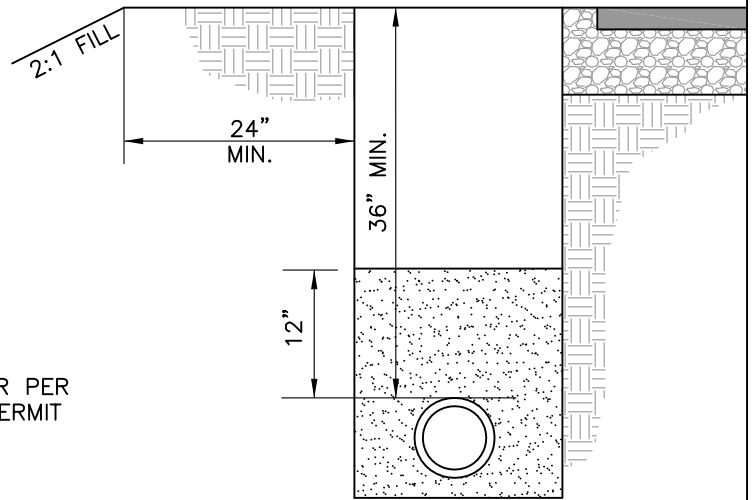
DRAWING NAME	NUMBER
APPLE VALLEY ESTATES SEWER CONNECTION	403
BLOWOFF AT END 4" WATER MAIN	206
BOLLARDS	205
BORE & JACK CASING	103
COMBINATION AIR VALVE ("AIR/VAC")	203
CREEK CROSSING FOR WATER AND SEWER MAINS	103
DOUBLE CHECK DETECTOR ASSEMBLY	210
DOUBLE CHECK DETECTOR ASSEMBLY FOR PROJECT UNDER CONST.	211
FIRE HYDRANT INSTALLATION	204
FIRE HYDRANT NEAR FILL SLOPE	205
GATE VALVE INSTALLATION	201
GENERAL NOTES	101
GRAVITY SEWER SERVICE INSTALLATION	402
LOCATOR WIRE	102
MANHOLE DROP CONNECTION	302
MASTER WATER METER	218
PRESSURE REDUCING STATION	214
PRIVATE PUMP SYSTEM TO GRAVITY SEWER MAIN	309
PRIVATE PUMP SYS. TO FORCE-MAIN OR PRESSURIZED INTERCEPTOR	310
RAW-WATER MAIN LOW-POINT BLOWOFF	212
RAW-WATER SERVICE ON PRESSURE PIPELINE	215
RECLAMATION SYSTEM SERVICE CONNECTION (4" & 6")	312
REDUCED-PRESSURE BACKFLOW PREVENTION ASSEMBLY	217
ROAD CROSSING OVER RAW-WATER DITCH	104
ROGUE RIVER COURT SEWER CONNECTION	403
SAMPLE STATION (WATER)	216
SEWER BACKFLOW PROTECTION	401
SEWER CONNECTION TO EXISTING MANHOLE	303
SEWER FORCE-MAIN AIR-VACCUM VALVE	306
SEWER FORCE-MAIN BLOWOFF/CLEANOUT	308
SEWER FORCE-MAIN LOW-POINT VAULT	307
SEWER MAIN PRESSURE TEST	304
SEWER MAIN CONSTRUCTED NEAR EXISTING WATER MAIN	305
SEWER SERVICE, CLEANOUT AND FLUSHING BRANCH	311
STANDARD 48" MANHOLE WITH CAST-IN-PLACE BASE	301
STANDARD TRENCH FOR WATER AND SEWER	102
THRUST BLOCKS	202
WATER MAIN CONNECTION TO EXISTING WATER MAIN	209
WATER MAIN CONSTRUCTED NEAR EXISTING SEWER MAIN	213
WATER MAIN VALVE LOCATIONS	202
WATER SERVICE LATERAL CONNECTIONS	207
WATER SERVICE BOX AND PRESSURE-REDUCING VALVE	208

1. All new work requires prior approval from T.U.D. and inspection by T.U.D during construction. All work shall comply with current T.U.D. standards, drawings, and specifications.
2. A reasonable effort has been made to locate and delineate all known underground utilities. The Project Engineer and T.U.D. can assume no responsibility for the completeness or accuracy of the delineation of these utilities nor for the existence of other buried objects or utilities which may be encountered but which are not shown on these plans. Contractor shall be responsible for determining the exact locations of utilities shown and any that may exist and are not shown prior to beginning any work. Contractor shall expose all underground utilities that are to be connected to or that are in the path of the proposed improvements prior to beginning work.
3. Contractor shall contact Underground Services Alert (U.S.A.) at 1-800-642-2444, 48 hours prior to any excavation and shall notify the following parties by the time specified prior to beginning work within their jurisdictions:

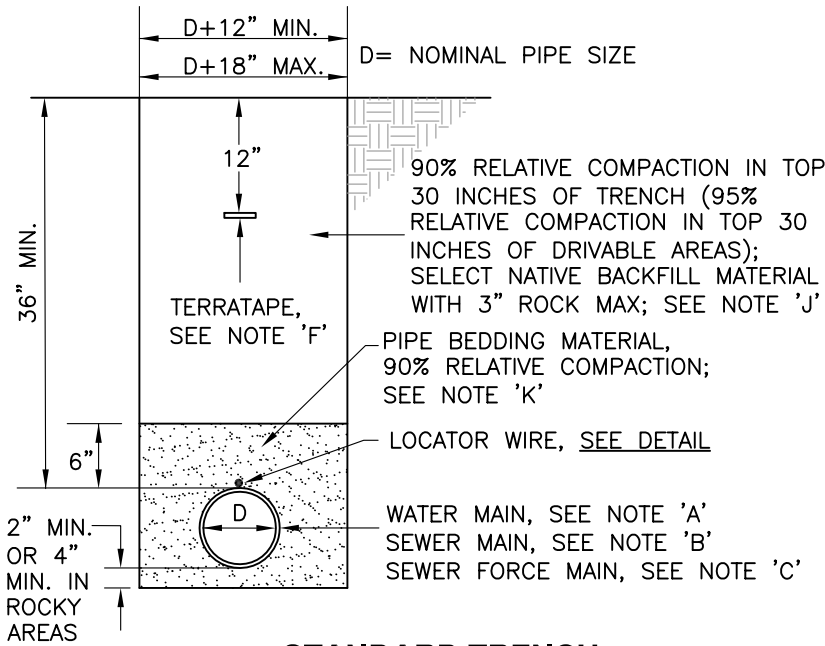
Project Engineer	5 Days
Tuolumne County Department of Public Works	48 Hours
Tuolumne Utilities District Engineering Dept.	48 Hours
Home Owners affected by construction	24 Hours
4. Contractor shall assume sole and complete responsibility for job site conditions during project construction including safety of all persons and property. This requirement shall apply continuously and not be limited to normal working hours. Contractor shall defend, indemnify and hold T.U.D. and the Project Engineer harmless from any and all liability, real or alleged, in connection with the performance of work on this project, except for liability arising from the sole negligence of T.U.D. or Project Engineer.
5. Contractor shall excavate in such a manner as to avoid any damage to existing structures and trees if possible. Any damaged structures shall be restored or replaced in a manner acceptable to T.U.D.'s District Engineer. Reduced cover over existing pipelines due to Contractor's activities will require reconstruction or protection satisfactory to District Engineer at sole cost of Contractor.
6. All stationing and dimensioning is referenced to the centerline of the pipeline unless otherwise noted.
7. Trenching and paving within any County right-of-way shall conform to the requirements of the Tuolumne County Dept. of Public Works.
8. Contractor shall perform work with a minimal disruption of services and shall notify T.U.D. 48 hours in advance of beginning work in order to give water customers 24 hours notice of any shut-offs.
9. Contractor shall provide Project Engineer with "as-built" notes including measurements to all facilities from at least two permanent objects and all deviations from original plans. Project Engineer shall provide "as-built" plans to T.U.D. prior to project acceptance.
10. All pipeline sections shall be pressure tested to T.U.D. specifications and water mains shall be disinfected to T.U.D. specifications prior to project acceptance.
11. Sewer and water mains shall not be installed in the same trench with electrical (primary or secondary), catv, telephone, gas or other utilities. All other utilities shall cross underneath sewer and water mains. All projects with underground gas pipelines shall have locator wire attached to the pipes and pulled into valve boxes, and shall have locating tape labeled "[type of] GAS BURIED BELOW."
12. Contractor shall conform with all Federal, State, and Local safety regulations. Specifically, attention is directed to trenching, drilling and blasting, confined space, and traffic control. Contractor shall conform with all requirements of Encroachment Permits issued to T.U.D. by Cal-Trans and the Tuolumne County Department of Public Works.
13. Compaction tests shall be required and shall be performed by a qualified, licensed, testing laboratory. Compaction characteristics for materials shall be based on California Test Method (CTM) 216. Field tests for compaction density shall be in accordance with ASTM D1556 or ASTM D2922. Contractor shall cooperate with Engineer during field testing by leveling small test areas as directed. Contractor shall be responsible for all costs for compaction tests ordered by Engineer.
14. Contractor shall notify property owners when working within easements or trenching across driveways and shall provide evidence of such notification to T.U.D.



TRENCH IN TRAFFIC AREA

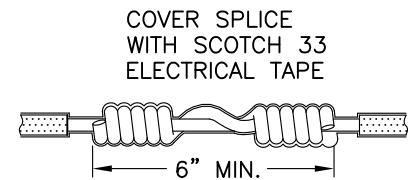


TRENCH NEAR FILL SLOPE



STANDARD TRENCH

NOTE: ALL IMPORTED MATERIAL SHALL BE ASBESTOS FREE

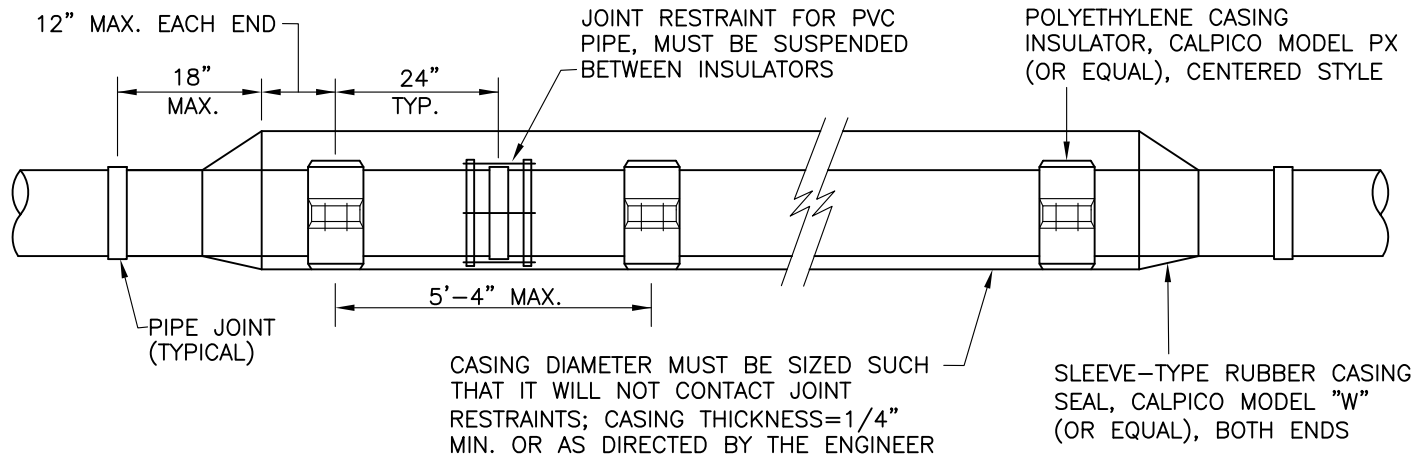


SPLICE DETAIL

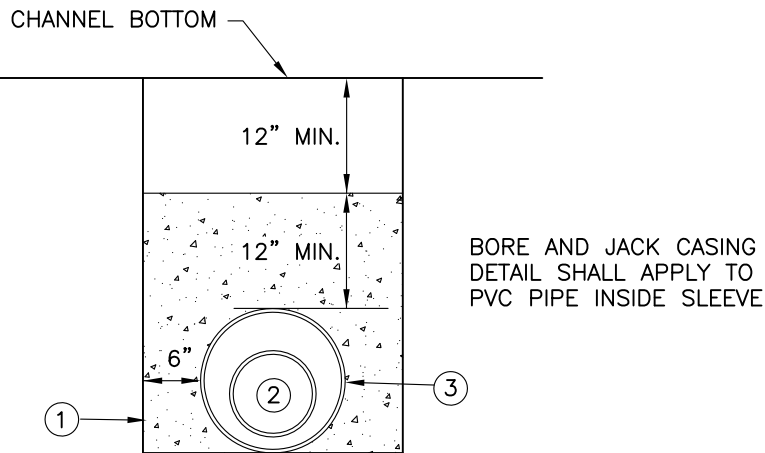
- A. WIRE TO BE #12 AWG INSULATED SINGLE STAND COPPER, UF LISTED.
- B. WIRE TO BE CONTINUOUS BETWEEN VALVE BOXES.
- C. STRIP INSULATION FROM WIRE INSIDE VALVE BOX AND AT ALL SPLICES.
- D. BARE WIRE IS NOT TO TOUCH VALVES.
- E. WIRE TO BE TAPED TO TOP OF PIPE AT 5 FT. INTERVALS.

LOCATOR WIRE

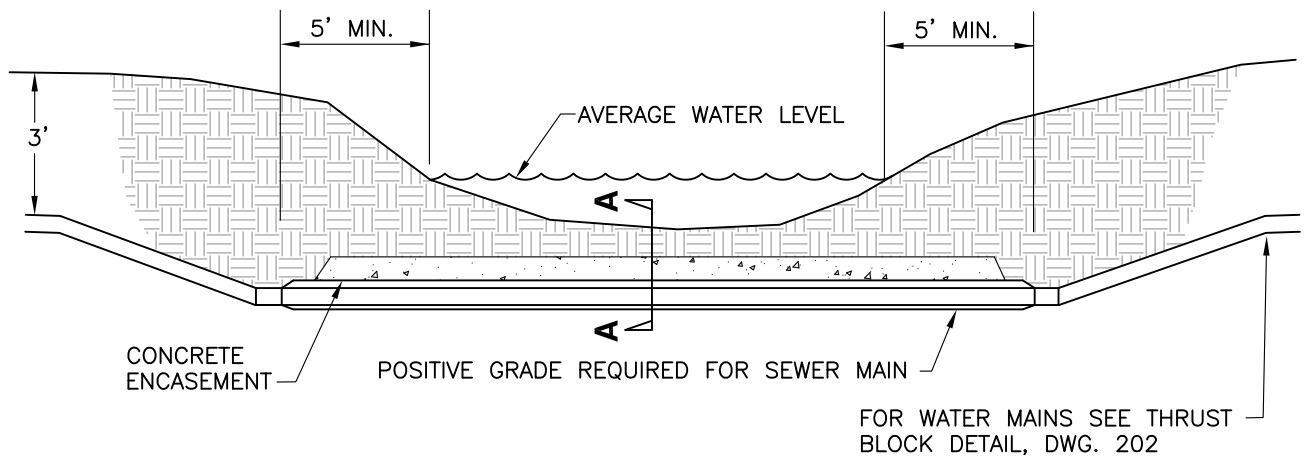
- A. FOR WATER MAINS 4" DIA. TO 12" DIA., PIPE SHALL BE AWWA C900 AND C909 PVC PIPE; CLASS RATING SHALL BE APPROVED BY T.U.D. PRIOR TO INSTALLATION.
- B. FOR GRAVITY SEWER MAINS 4" DIA. TO 15" DIA., PIPE SHALL BE PVC SDR35 AND SHALL MEET ASTM D3034 STANDARDS. RUBBER SEALANT RINGS SHALL MEET ASTM D3212 REQUIREMENTS.
- C. FOR SEWER FORCE MAINS 4" DIA. OR GREATER, PIPE SHALL BE AWWA C900 CL150 PVC PIPE; HIGHER CLASS RATING MAY BE REQUIRED BY T.U.D. ALL MAINS LESS THAN 4" DIA. MUST BE APPROVED BY DISTRICT ENGINEER.
- D. PRIOR TO INSTALLING GRAVITY SEWER PIPE, BOTTOM OF TRENCH SHALL BE COMPACTED AND INSPECTED.
- E. WATER MAINS SHALL BE PRESSURE TESTED FOR CLASS OF PIPE AT LOWEST POINT IN WATERLINE WITH A 25 PSI MAX. DROP AT HIGH POINT.
- F. TERRATAPE (2" WIDE LOCATING TAPE) TO BE LABELED "BURIED WATERLINE [SEWERLINE] BELOW - TUOLUMNE UTILITIES DISTRICT" (AVAILABLE AT T.U.D. OFFICE AT T.U.D.'S COST).
- G. ALL TRENCHES OVER 5 FT. DEEP SHALL BE SLOPED, SHORED, BRACED, OR OTHERWISE SUPPORTED IN ACCORDANCE WITH CAL-OSHA REQUIREMENTS. T.U.D. ASSUMES NO RESPONSIBILITY FOR THE DESIGN OF SUCH SUPPORT SYSTEMS. IN PAVED AREAS TRENCHES CANNOT BE SIDE-SLOPED.
- H. RELATIVE COMPACTION TO BE 90% OR GREATER IN THE HAUNCH AREA OF THE PIPE FROM THE SPRINGLINE TO THE BOTTOM OF THE PIPE.
- I. GRAVITY SEWER ELBOWS SHALL BE SDR35 PVC "SLOW-BANANA" BEND. OTHER ELBOWS MAY BE USED WITH PRIOR DISTRICT APPROVAL AND SHALL NOT EXCEED 22-1/2" IN ANY CASE. ALL OTHER SEWER FITTINGS SHALL BE CAST IRON.
- J. ALL NATIVE MATERIAL REQUIRES DISTRICT APPROVAL PRIOR TO USE. CONTRACTOR SHALL USE OTHER APPROVED MATERIAL IF NEEDED TO MEET COMPACTION REQUIREMENTS.
- K. USE TYPE "A" MATERIAL (SEE T.U.D. SPECIFICATIONS) UNLESS OTHERWISE APPROVED BY DISTRICT.



BORE AND JACK CASING



SECTION A-A

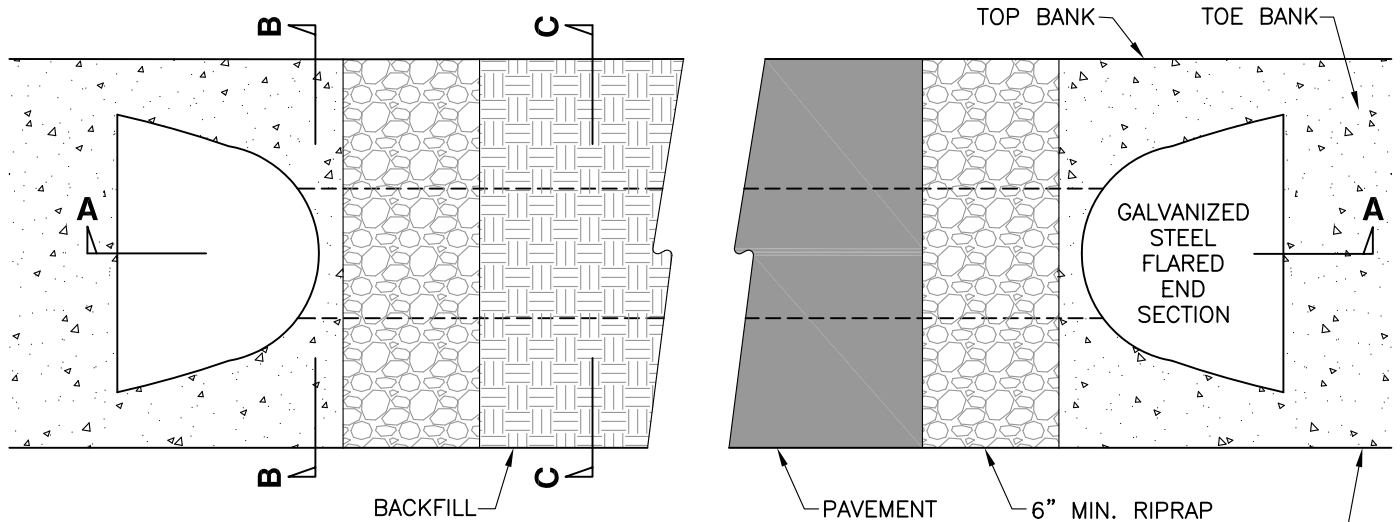


CREEK CROSSING FOR WATER AND SEWER MAINS

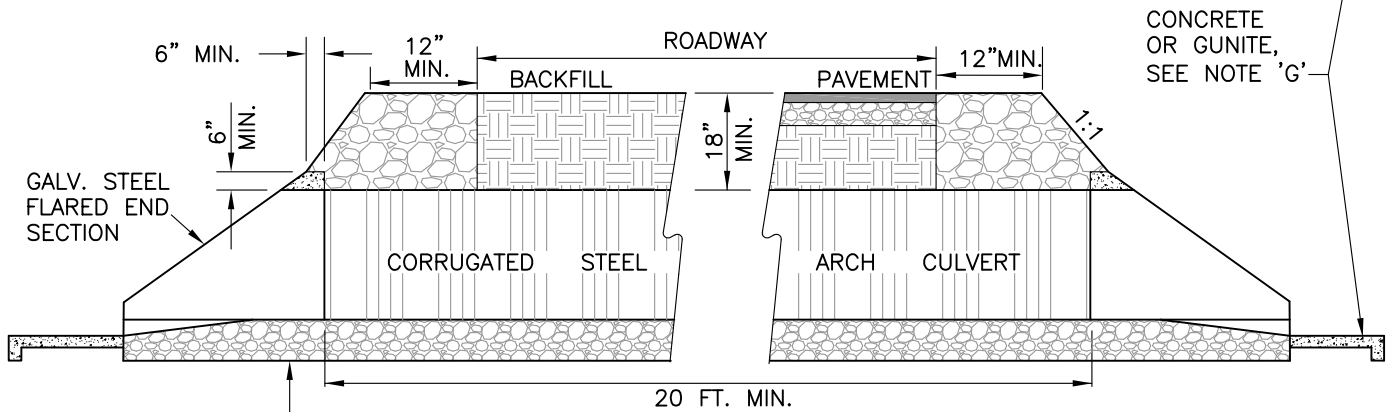
ITEM	QTY	DESCRIPTION	REMARKS
①		3-SACK MIX CONCRETE	NO LOADS TO BE PLACED ON CONCRETE FOR 7 DAYS
②		DUCTILE IRON PIPE	CEMENT OR PVC LINED; USE CAST IRON FITTINGS AS NEEDED
③		PVC C900 CL150	USE CAST IRON FITTINGS AS NEEDED

TUOLUMNE UTILITIES DISTRICT
CREEK CROSSING FOR WATER AND SEWER MAINS
AND BORE AND JACK CASING

REV. 02-09-06
 STD. DWG. NO.
103

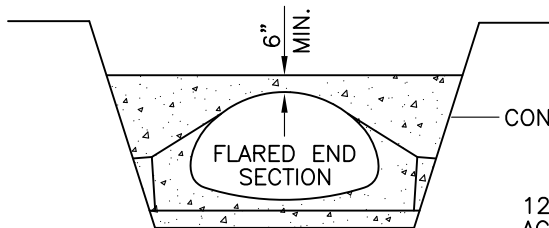


PLANVIEW

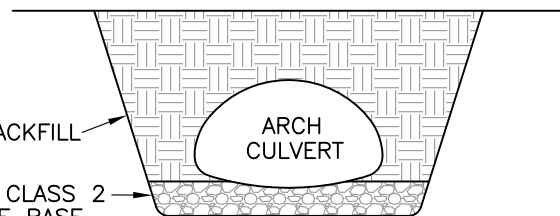


SECTION A - A

COMPACTED CLASS 2,
3/4" AGG. BASE,
12" DEEP (MIN.)



SECTION B - B



SECTION C - C

NOTES:

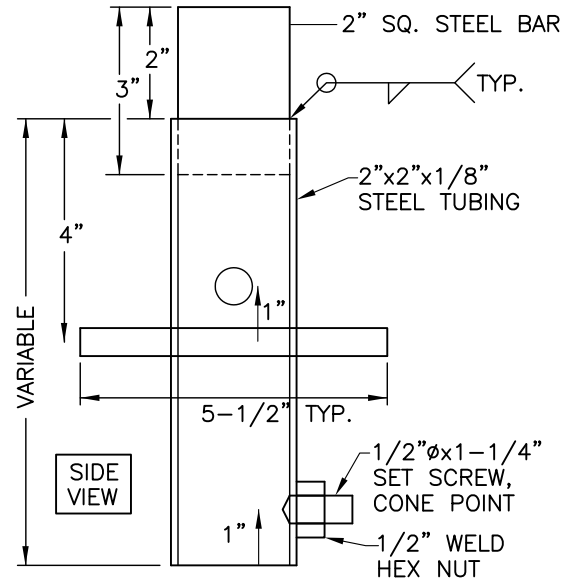
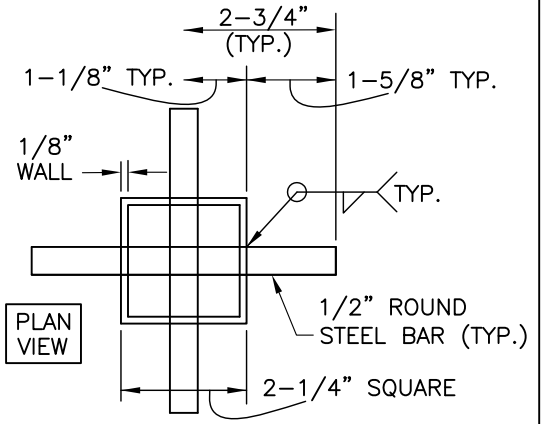
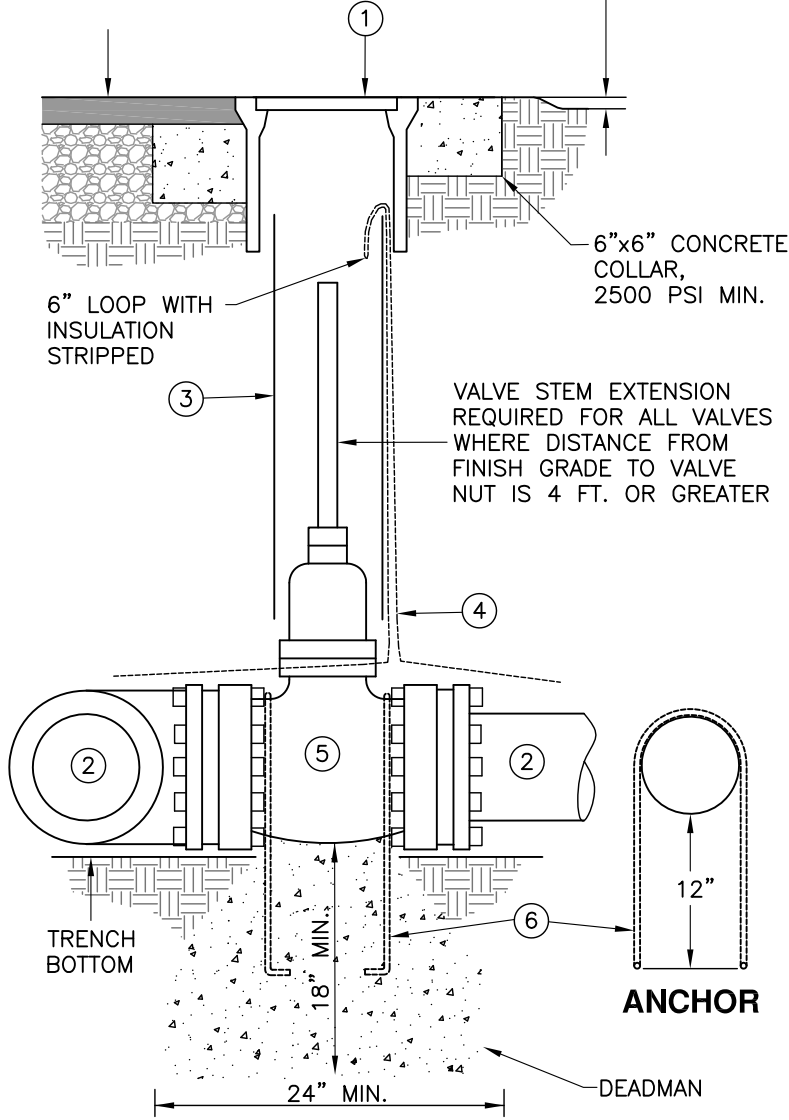
- A. ALL BANDS, JOINTS AND CONNECTIONS IN ARCH CULVERT SHALL BE SEALED WATERTIGHT WITH MANUFACTURERS GASKET, "RAMNECK" SEALANT, OR APPROVED EQUAL. BAND CORRUGATIONS MUST MATCH CULVERT CORRUGATIONS FOR TIGHT SEAL.
- B. BACKFILL AROUND END SECTIONS WITH BAGS OF CONCRETE READYMIX. AS AN ALTERNATIVE, END SECTIONS MAY BE BACKFILLED WITH POURED CONCRETE.
- C. PROPER BACKFILL OF PIPE IS ESSENTIAL. PLACE FILL BY DISTRIBUTING MATERIAL AROUND PIPE IN A UNIFORM 6" LAYER AND COMPACT THOROUGHLY. USE SELECT NATIVE BACKFILL WITH NO VEGETATIVE MATTER, ROOTS OR ROCKS LARGER THAN 2 INCHES.
- D. EXCAVATE DITCH SO THAT INVERT OF PIPE AND FLARED END SECTIONS LAY FLUSH WITH BOTTOM OF CANAL, YET MAINTAIN POSITIVE SLOPE IN DIRECTION OF FLOW.
- E. ARCH PIPE TO BE DESIGNED FOR AN H-20 LOADING, 20 FT. MIN. LENGTH PLUS END SECTIONS, SIZE PER TUOLUMNE UTILITIES DISTRICT REQUIREMENTS.
- F. COORDINATE DRIVEWAY CROSSING CONSTRUCTION WITH T.U.D. PERSONNEL. TWO WEEK MIN. NOTICE IS REQUIRED FOR TEMPORARY DITCH SHUTDOWN.
- G. CONCRETE OR GUNITE SHALL BE EXTENDED 10 FEET FROM EACH FLARED END SECTION ALONG DITCH BOTTOM AND TO TOP OF EACH BANK TO MINIMIZE INFILTRATION, 2 INCH MIN. THICKNESS WITH 6x6x10 GA. WELDED WIRE AND 8"x12" KEYWAY AT EACH END.

TRAFFIC BEARING:

DEPTH OF A.C. AND A.B.
PER ENCROACHMENT PERMIT

NON-TRAFFIC BEARING:

2" ABOVE SURROUNDING GRADE



VALVE STEM EXTENSION

NOTES

- A. COAT BURIED NUTS & BOLTS WITH KOPPERS BITUMASTIC NO. 50 OR TAPE WITH 10 MILS PVC TAPE, 3 WRAPS MIN.
- B. FITTINGS, JOINTS, BOLTS AND NUTS ARE TO BE COVERED WITH PLASTIC SHEETING (4 MIL THICK MIN.) PRIOR TO PLACEMENT OF CONCRETE. NO CONCRETE TO BE ALLOWED ON BOLTS.
- C. VALVES SHALL BE INSTALLED ON FITTINGS UNLESS OTHERWISE APPROVED BY T.U.D.

ITEM	QTY	DESCRIPTION	REMARKS
①	1	TRAFFIC VALVE BOX WITH LID MARKED "WATER"	CHRISTY G5 W/ G5C LID OR APPROVED EQUAL
②		C900 AND C909 PVC PIPE	SUITABLE CLASS FOR SERVICE PRESSURE
③	1	6" OR 8" PVC PIPE	SDR35, PR160, C900 AND C909 ARE ACCEPTABLE
④	1	#12 AWG INSULATED LOCATOR WIRE	SINGLE STRAND COPPER, <u>UF LISTED</u> , SEE DWG. #102
⑤	1	RESILIENT WEDGE GATE VALVE, EPOXY-COATED, NON-RISING STEM, 2" SQUARE NUT FOR ALL VALVES 2" AND LARGER	FLxMJ UNLESS OTHERWISE APPROVED, CLOW, MUELLER, AMERICAN DARLING OR APPROVED EQUAL, SUITABLE CLASS FOR SERVICE PRESSURE
⑥	2	#4 REINFORCING BAR ANCHOR	GRADE 60

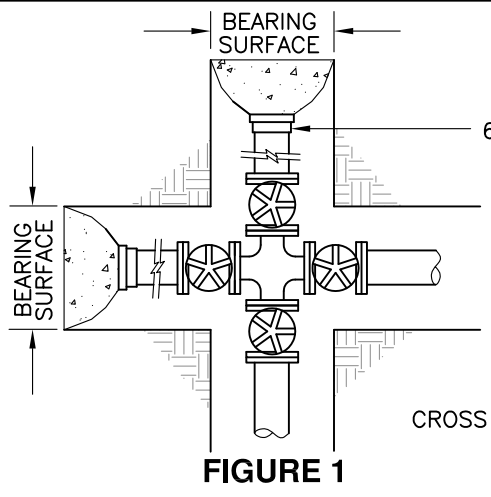


FIGURE 1

CONST. DEADMAN UNDER ALL VALVES, SEE DETAIL #201

6' STUB WITH CAP (TYPICAL)

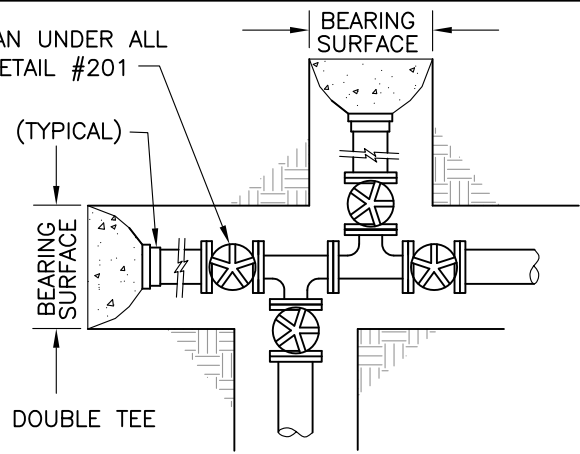


FIGURE 2

VALVE INSTALLATION NOTES

- A. COAT BURIED NUTS & BOLTS WITH KOPPERS BITUMASTIC NO. 50 OR TAPE WITH 10 MILS PVC TAPE, 3 WRAPS MIN.
- B. FITTINGS, JOINTS, BOLTS AND NUTS ARE TO BE COVERED WITH PLASTIC SHEETING (4 MIL. THICK MIN.) PRIOR TO PLACEMENT OF CONCRETE. NO CONCRETE TO BE ALLOWED ON BOLTS.
- C. ALL VALVES AND FITTINGS SHALL BE CAST IRON OR DUCTILE IRON AND SHALL HAVE A PRESSURE RATING EQUAL TO OR GREATER THAN THE WORKING PRESSURE RATING OF THE PIPE.
- D. ALL TEES & CROSSES SHALL BE FLANGED WITH FLxMJ VALVES UNLESS OTHERWISE APPROVED BY T.U.D. ENGINEER.
- E. VALVES SHALL BE LOCATED IN-LINE, NOT TO EXCEED 1000 FT. APART, AND AT ALL TEES AND CROSSES.

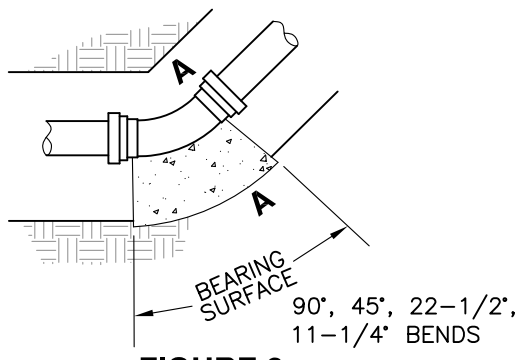
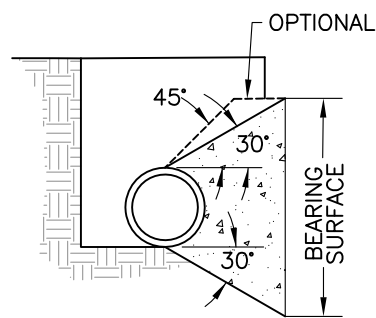


FIGURE 3



SECTION A-A

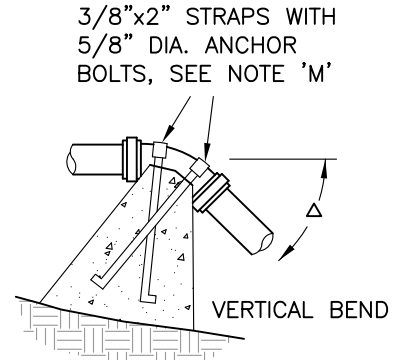


FIGURE 4

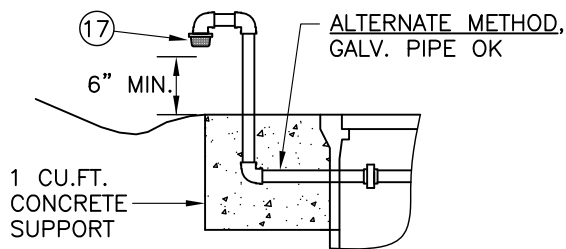
THRUST BLOCKS FOR HORIZONTAL AND VERTICAL BENDS AT UNRESTRAINED JOINTS, 4" TO 12" FITTINGS

SIZE OF PIPE	MIN. BEARING AREA IN SQUARE FEET						CUBIC FEET OF CONCRETE		
	FIG. 1		FIG. 2		FIGURE 3		FIGURE 4		
	CROSS	TEE	90°	45°	22-1/2'	11-1/4'	45°	22-1/2'	11-1/4'
4"	2	2	2	1	1	1	19	19	5
6"	3	3	4	3	2	2	20	20	10
8"	5	5	7	4	2	2	SPECIAL DESIGN REQUIRED		13
10"	8	8	12	6	3	3			30
12"	12	12	16	9	5	5			

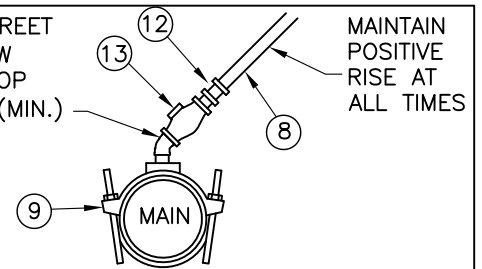
GENERALLY, THE BEARING AREA WIDTH TO HEIGHT RATIO SHOULD NOT EXCEED 2 TO 1

THRUST BLOCK NOTES

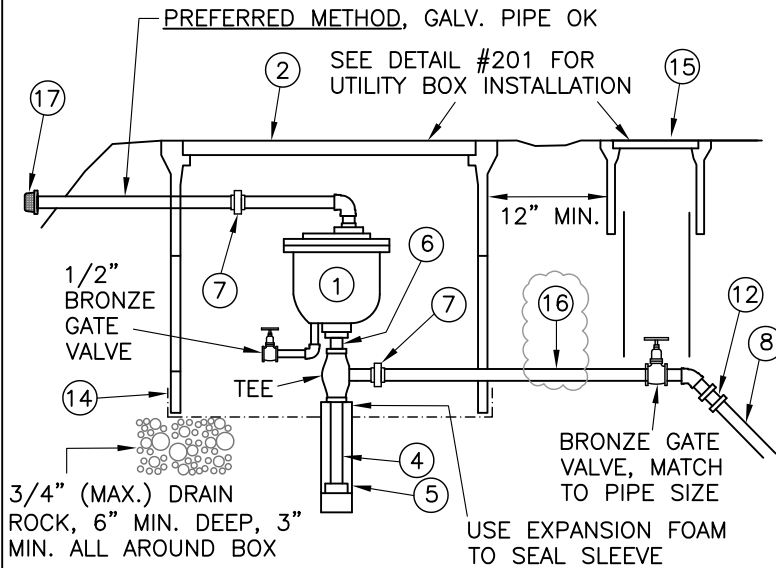
- H. THRUST BLOCKS ARE TO BE CONSTRUCTED OF 2500 PSI MIN. COMPRESSIVE STRENGTH CONCRETE.
- I. AREAS GIVEN ARE THE MINIMUM REQUIREMENT FOR CLASS 150 PIPE AT TEST PRESSURES OF 150 PSI IN SOIL WITH 2000 PSF BEARING CAPACITY. WITH DIFFERENT PIPE TYPES, WORKING PRESSURES AND/OR SOIL TYPES, ADJUST ACCORDINGLY. VARIANCES ARE SUBJECT TO T.U.D. APPROVAL.
- J. BLOCKS ARE TO BE POURED AGAINST UNDISTURBED SOIL.
- K. THRUST BLOCKS SHALL HAVE A 5 DAY MIN. CURE PRIOR TO PRESSURIZATION OF MAINS.
- L. RESTRAINED JOINTS ARE REQUIRED ON AT LEAST 3 JOINTS IN EACH DIRECTION WHEN SITE LIMITATIONS PREVENT STRICT ADHERANCE TO THESE STANDARDS (SUBJECT TO DISTRICT APPROVAL.)
- M. ANCHOR BOLTS TO EXTEND TO 90% OF DEPTH OF BLOCK; COAT ALL EXPOSED METAL WITH BITUMASTIC COATING AFTER INSTALLATION. SPECIAL DESIGN IN FIELD MAY BE REQUIRED FOR 8", 10" AND 12" PIPE.



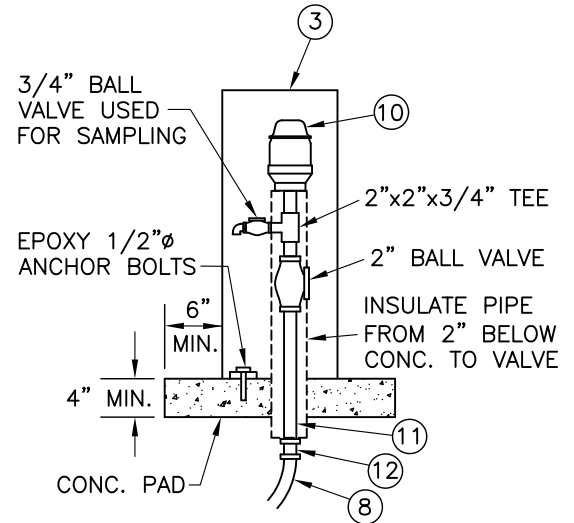
INSTALL BRASS STREET 90° (OR 45°) ELBOW BEFORE CORP. STOP TO MAINTAIN 18" (MIN.) TO MAIN COVER



CONNECTION AT MAIN



BELOW-GROUND INSTALLATION



ABOVE-GROUND INSTALLATION

REQUIRES PRIOR T.U.D. APPROVAL

NOTES

- A. GATE VALVES, GALVANIZED UNIONS AND TEES WILL BE A SPECIFIC SIZE ACCORDING TO THE C.A.V. USED.
- B. ALL CONCRETE SHALL HAVE A MIN. COMPRESSIVE STRENGTH OF 2500 PSI IN ALL AREAS SHOWN.
- C. ALL COMBINATION AIR VALVES TO BE LOCATED OUT OF TRAFFIC AREAS.
- D. ABOVE-GROUND COMB. AIR VALVES MUST BE PROTECTED FROM TRAFFIC WITH BOLLARDS OR LARGE BOULDERS.
- E. ALL FITTINGS SHALL BE BRASS UNLESS OTHERWISE NOTED.

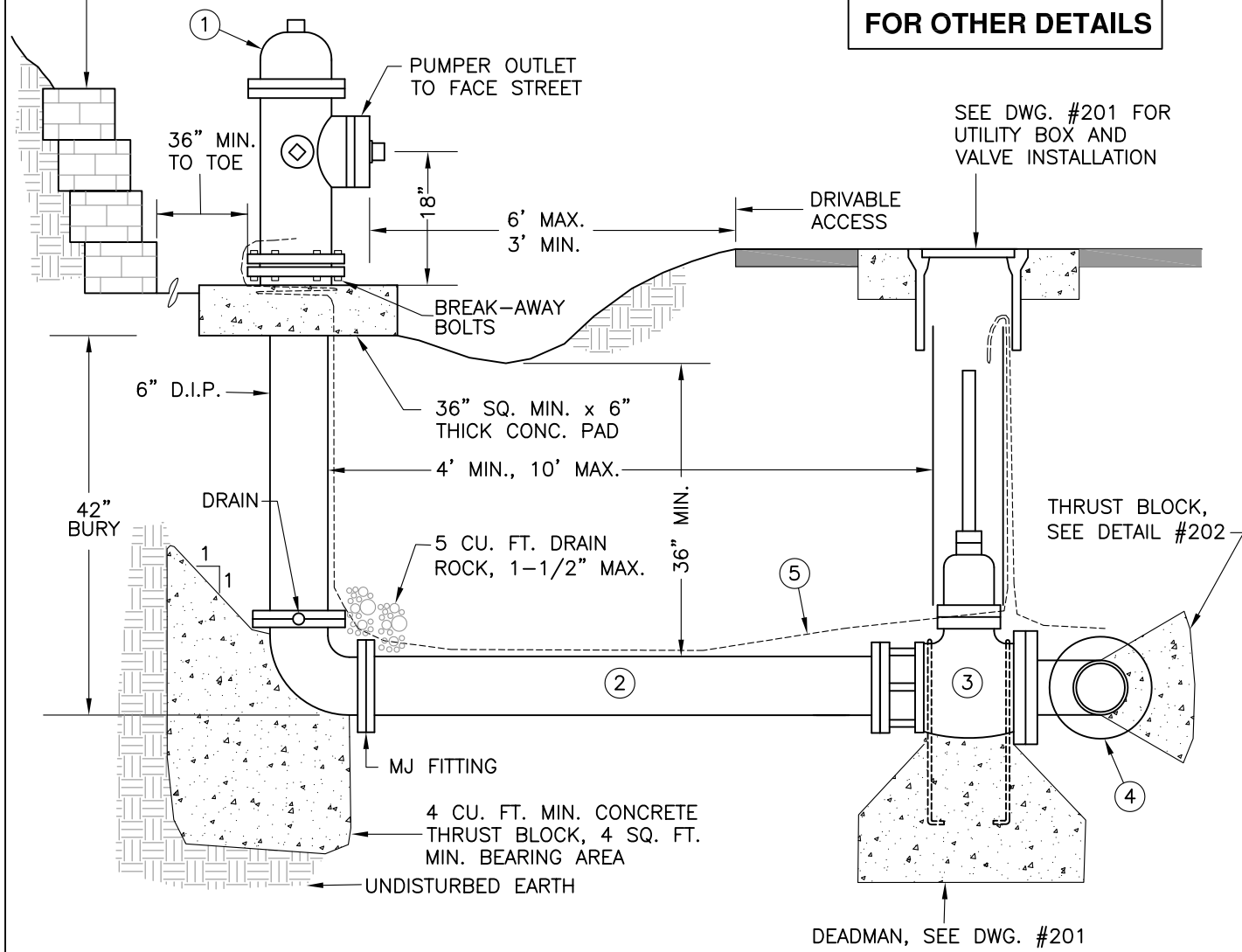
ITEM	QTY	DESCRIPTION	REMARKS
①	1	COMBINATION AIR VALVE	1" APCO 143C FOR 6" & 8" MAINS, 2" APCO 145C FOR 10" & 12" MAINS, OR APPROVED EQUAL
②	1	UTILITY BOX AND LID, USE EXTENSION(S)	CHRISTY B36 FOR 1" VALVE, CHRISTY B40 FOR 2" VALVE, 61D LID, OR APPROVED EQUAL
③	1	VALVE PEDESTAL, 12"x12"x30"	PLACER WATER WORKS #PW/SJARV-2 OR APPROVED EQUAL
④	1	1"x 8" BRASS NIPPLE WITH BRASS CAP	USE 1"x 2" REDUCER WITH NIPPLE FOR 2" C.A.V.
⑤	1	2"x12" PVC NIPPLE WITH 2" CAP	SCH. 40 PVC
⑥	1	3" LONG BRASS NIPPLE	SIZE PER PIPE
⑦		BRASS UNION	SIZE PER PIPE
⑧	1	1" POLYETHYLENE TUBING FOR 6" & 8" MAINS, 2" TUBING FOR 10" & 12" MAINS	WESTFLEX SP200 PSI (OR APPROVED EQUAL)
⑨	1	1" OR 2" SERVICE SADDLE	FORD FS202 FOR C900 OR C909 PVC, OR APPROVED EQUAL
⑩	1	1" OR 2" COMBINATION AIR VALVE	BERMAD MODEL #4415 OR APPROVED EQUAL
⑪	1	1" OR 2" BRASS NIPPLE, 12" MIN.	EXTEND 6" MIN. BELOW GRADE
⑫	1	FEMALExCTS PACKJOINT COUPLING	FORD C14-44, JONES J-2605 OR APPROVED EQUAL
⑬	1	CORPORATION STOP (MIPxMIP)	FORD F500 (1"), FB500 (2") OR APPROVED EQUAL
⑭		1/4" HARDWARE CLOTH (GALV.)	MUST COVER ALL ACCESS HOLES
⑮	1	TRAFFIC VALVE BOX WITH LID MARKED "WATER"	CHRISTY G5 BOX WITH G5C LID, OR APPROVED EQUAL
⑯	1	36" LONG BRASS NIPPLE	SIZE PER PIPE
⑰	1	AIR VENT CAP #10 MESH	T. CHRISTY #VCI FOR 1" AIR/VAC; #VC2 FOR 2" AIR/VAC

**TUOLUMNE UTILITIES DISTRICT
COMBINATION AIR VALVE ("AIR/VAC")**

REV. 1-16-09
STD. DWG. NO.
203

GRAVITY RETAINING WALL (ALLEN BLOCKS) FOR ALL CUTS GREATER THAN 1-1/2 TO 1, OR AS APPROVED BY T.U.D.

SEE DWG. NO. 205 FOR OTHER DETAILS



NOTES

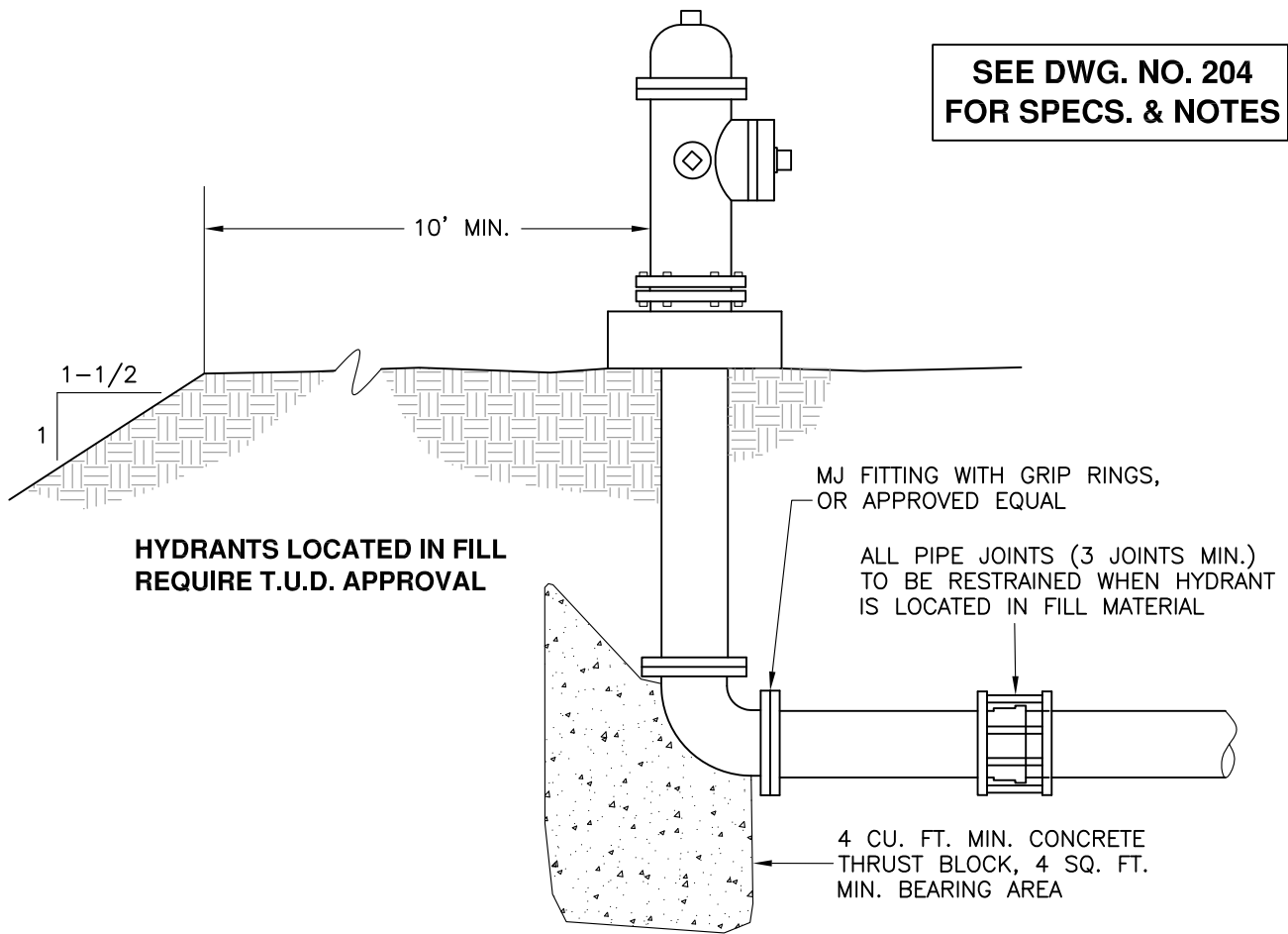
- A. MAXIMUM OPERATING PRESSURE SHALL NOT EXCEED 150 PSI WITHOUT PRIOR T.U.D. APPROVAL.
- B. FIRE HYDRANTS SHALL BE LOCATED NEAR CUT SLOPE WHENEVER POSSIBLE.
- C. CUT SLOPE TO BE STABILIZED IN VICINITY OF HYDRANT.
- D. DRIVABLE ACCESS SHALL NOT BE MORE THAN 6 FT. FROM HYDRANT.
- E. COAT BURIED NUTS & BOLTS WITH KOPPERS BITUMASTIC #50 OR TAPE WITH 10 MILS PVC TAPE, 3 WRAPS MIN.
- F. FITTINGS, JOINTS, BOLTS AND NUTS ARE TO BE COVERED WITH PLASTIC SHEETING (4 MIL THICK MIN.) PRIOR TO PLACEMENT OF CONCRETE. NO CONCRETE TO BE ALLOWED ON BOLTS.
- G. HYDRANTS MUST HAVE 3' CLEAR MIN. FROM DRIVABLE SPACE OR BOLLARDS ARE REQUIRED; SEE DWG. #206.

ITEM	QTY	DESCRIPTION	REMARKS
①	1	6" DRY BARREL, TRAFFIC MODEL HYDRANT WITH (2) 2-1/2" NST HOSE OUTLETS, ONE 4-1/2" NST PUMPER OUTLET, AND A 5-1/4" SEAT OPENING; BASE CONNECTION IS MECHANICAL JOINT, OPEN COUNTERCLOCKWISE	AMERICAN DARLING B-62-B OR KENNEDY-GUARDIAN K81A; PAINT BODY CHROME YELLOW
②		6" C900 OR C909 PVC PIPE	SUITABLE CLASS FOR SERVICE PRESSURE
③	1	6" RESILIENT WEDGE GATE VALVE (MJxFL), NON-RISING STEM, 2" SQUARE NUT	CLOW, MUELLER, AMERICAN DARLING OR APPROVED EQUAL, SUITABLE CLASS FOR SERVICE PRESSURE
④	1	CAST IRON OR DUCTILE IRON TEE	SIZE TO SUIT WATER MAIN (6" MIN.)
⑤	1	#12 AWG INSULATED LOCATOR WIRE	SINGLE STRAND COPPER, <u>UF LISTED</u> , SEE DWG. #102

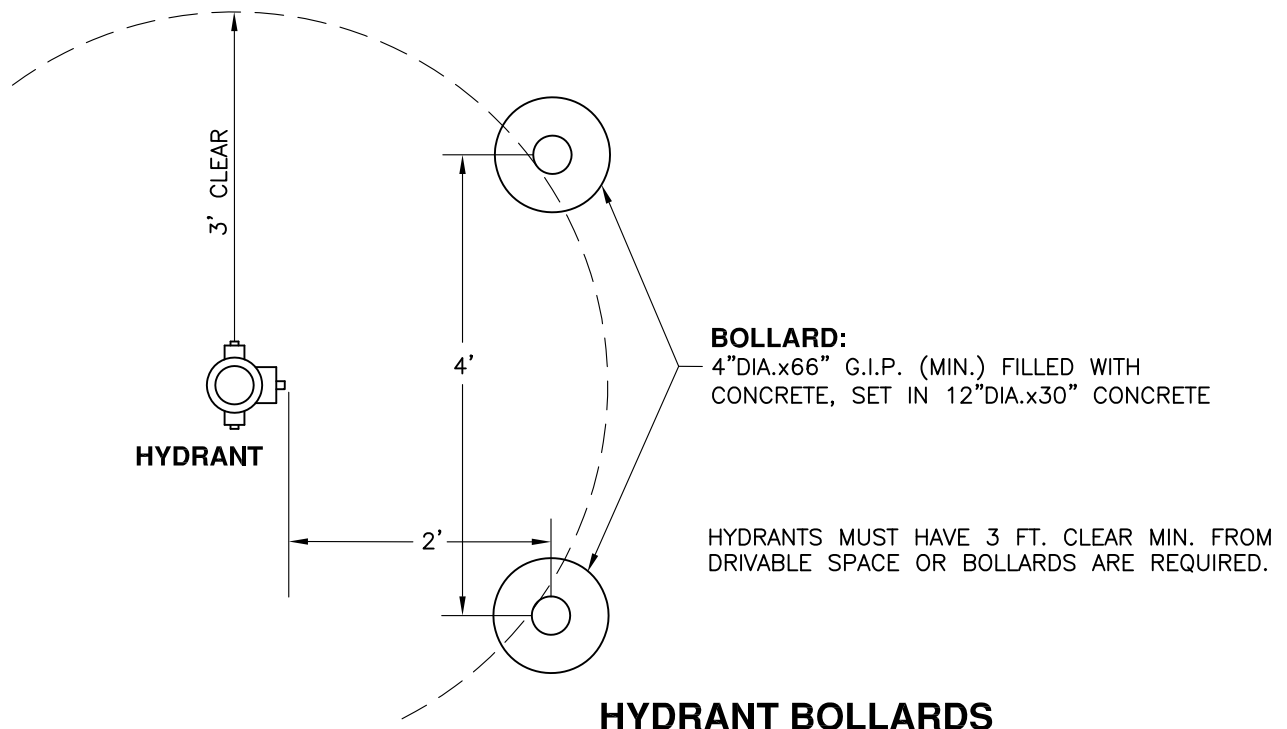
**TUOLUMNE UTILITIES DISTRICT
FIRE HYDRANT INSTALLATION**

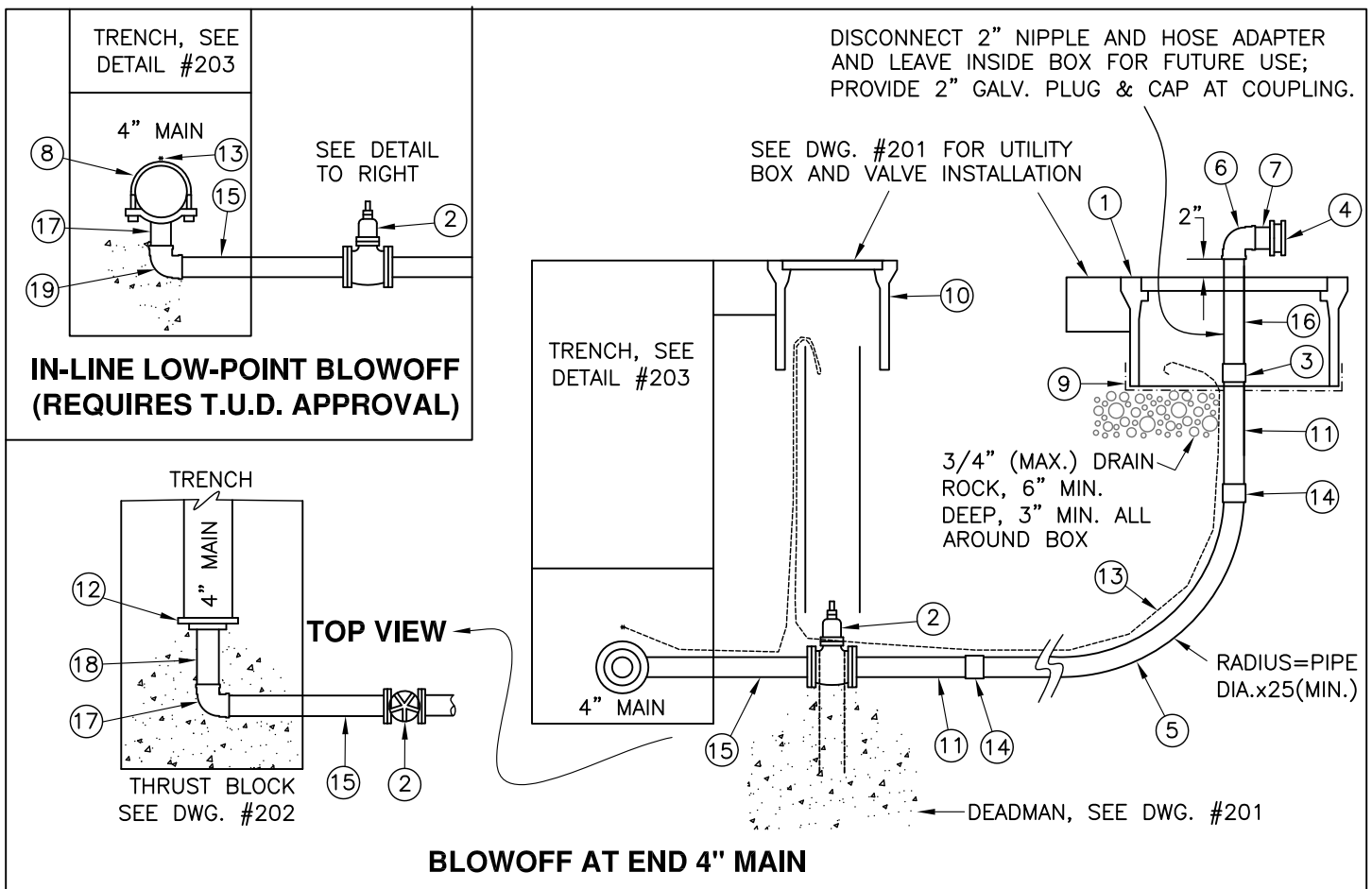
REV. 11-21-07
STD. DWG. NO. **204**

**SEE DWG. NO. 204
FOR SPECS. & NOTES**



HYDRANT NEAR FILL SLOPE

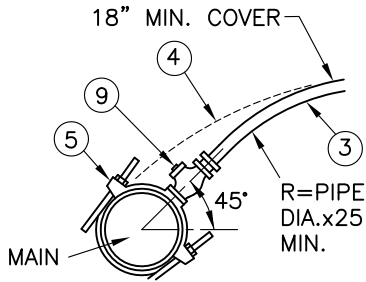




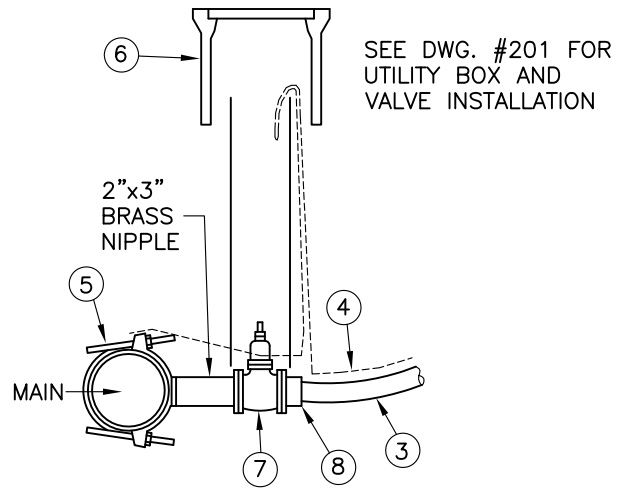
NOTES

- A. THIS BLOWOFF CONSTRUCTION ALLOWED AT END 6" MAIN WITH PRIOR T.U.D. APPROVAL.
- B. BLOWOFF TO BE INSTALLED AT THE END OF ALL DEAD-END WATER MAINS UNLESS HYDRANT IS WITHIN 20 FT. OF END OF MAIN.
- C. DO NOT LOCATE BLOWOFF IN TRAFFIC AREAS.
- D. COAT BURIED NUTS & BOLTS WITH KOPPERS BITUMASTIC NO. 50 (OR APPROVED EQUAL) OR TAPE WITH 10 MILS. PVC TAPE, 3 WRAPS MIN.
- E. FITTINGS, JOINTS, BOLTS AND NUTS ARE TO BE COVERED WITH PLASTIC SHEETING (4 MIL. THICK MIN.) PRIOR TO PLACEMENT OF CONCRETE. NO CONCRETE TO BE ALLOWED ON BOLTS.

ITEM	QTY	DESCRIPTION	REMARKS
(1)	1	UTILITY BOX	CHRISTY B16 W/61D LID OR APPROVED EQUAL
(2)	1	2" RESILIENT WEDGE GATE VALVE, 2" SQUARE NUT	CLASS 150, NONRISING STEM
(3)	1	2" COUPLING	CLASS 150 M.I., GALV.
(4)	1	2"x2-1/2" BRASS FIRE HOSE ADAPTER	NH THREAD, PROVIDE W/PROTECTIVE CAP
(5)	2	2" POLYETHYLENE TUBING, 200 PSI	WESTFLEX OR APPROVED EQUAL
(6)	3	2" 90° ELBOW	CLASS 150 M.I., GALV.
(7)	2	2" SHORT NIPPLE	SCH40, GALV.
(8)	1	2" SERVICE SADDLE WITH DOUBLE-WIDE STRAP	FORD FS202 (FOR C900 PVC)
(9)	1	1/4" HARDWARE CLOTH (GALV.)	MUST COVER ALL ACCESS HOLES
(10)	1	TRAFFIC VALVE BOX WITH LID MARKED "WATER"	CHRISTY G5 W/G5C LID OR APPROVED EQUAL
(11)	3	2"x12" NIPPLE	BRASS
(12)	1	CAST IRON CAP, 2" TAP	MECHANICAL JOINT W/GRIP RINGS
(13)	1	#12 AWG INSULATED LOCATOR WIRE	SINGLE STRAND COPPER, <u>UF LISTED</u> , SEE DWG. #102
(14)	2	2" FIP x CTS ADAPTER, BRASS	
(15)	1	2"x18" BRASS NIPPLE	(17) 90° BRASS ELBOW
(16)	1	2"x12" NIPPLE, SCH.40, GALV.	(18) 2"x6" BRASS NIPPLE

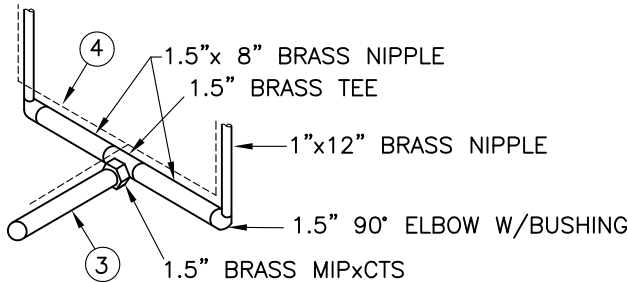


SINGLE OR DOUBLE SERVICE

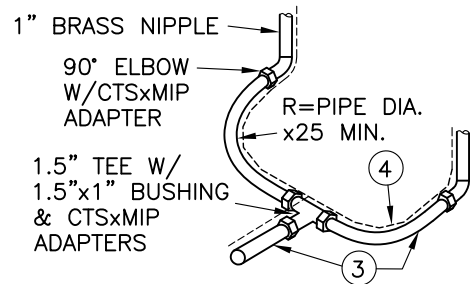


TRIPLE OR QUADRUPLE SERVICE

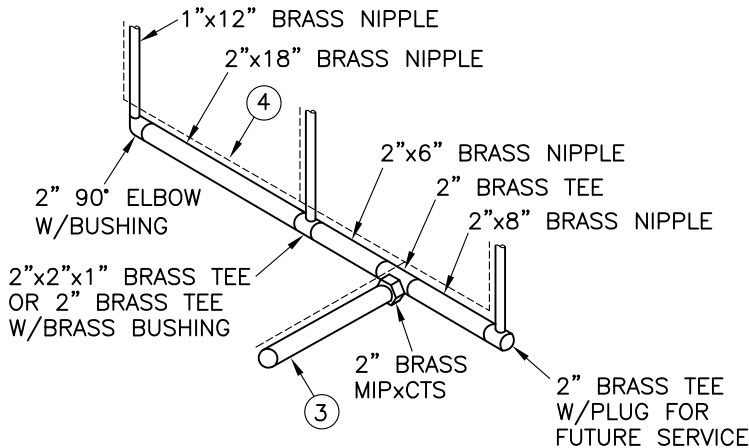
CONNECTION AT MAIN SHALL BE 3 FT. FROM ALL FITTINGS AND JOINTS
CONNECTION AT MAIN



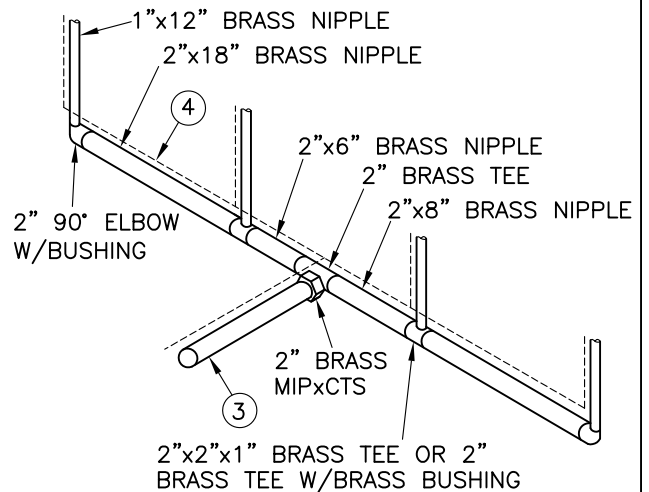
DOUBLE SERVICE



DOUBLE SERVICE
ALTERNATE INSTALLATION
WITH T.U.D. APPROVAL



TRIPLE SERVICE

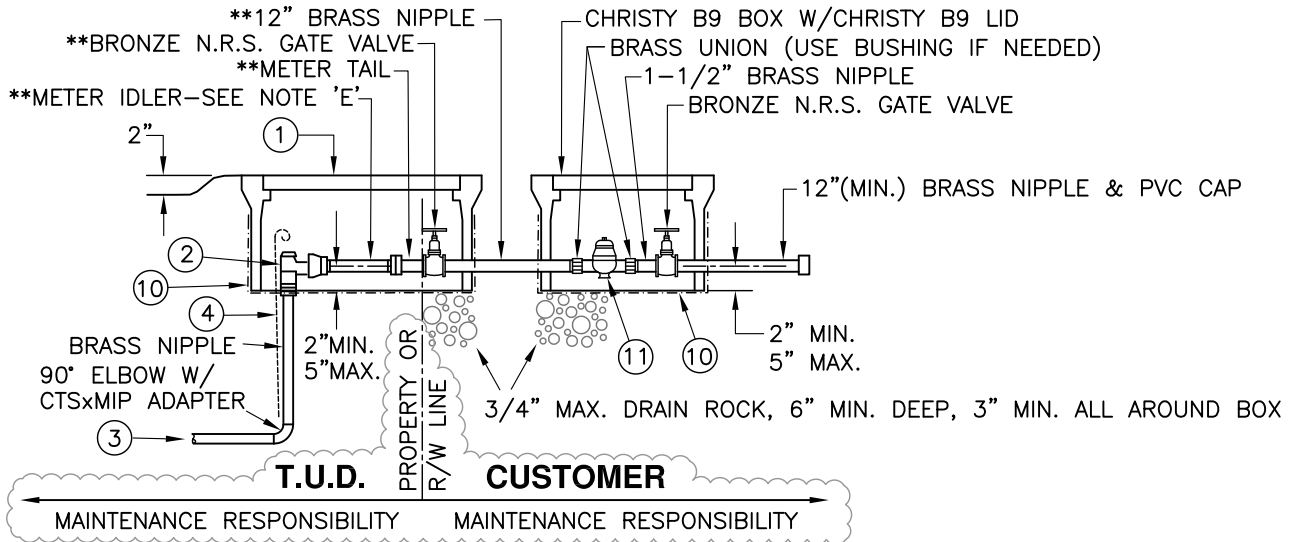


QUADRUPLE SERVICE

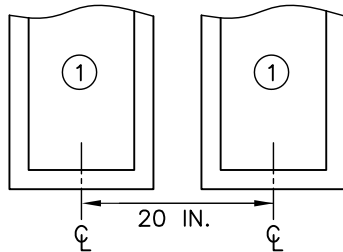
CONNECTION AT METER

SEE DWG. # 208 FOR NOTES, PARTS LIST & WATER SERVICE BOX DETAIL

**** PARTS SUPPLIED BY T.U.D.**

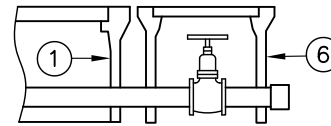


WATER SERVICE BOX AND PRESSURE-REDUCING VALVE (SEE NOTE 'H')



WATER SERVICE BOX SEPARATION

VALVE INSTALLED IN G5 BOX;
BOX SUPPLIED BY CONTRACTOR



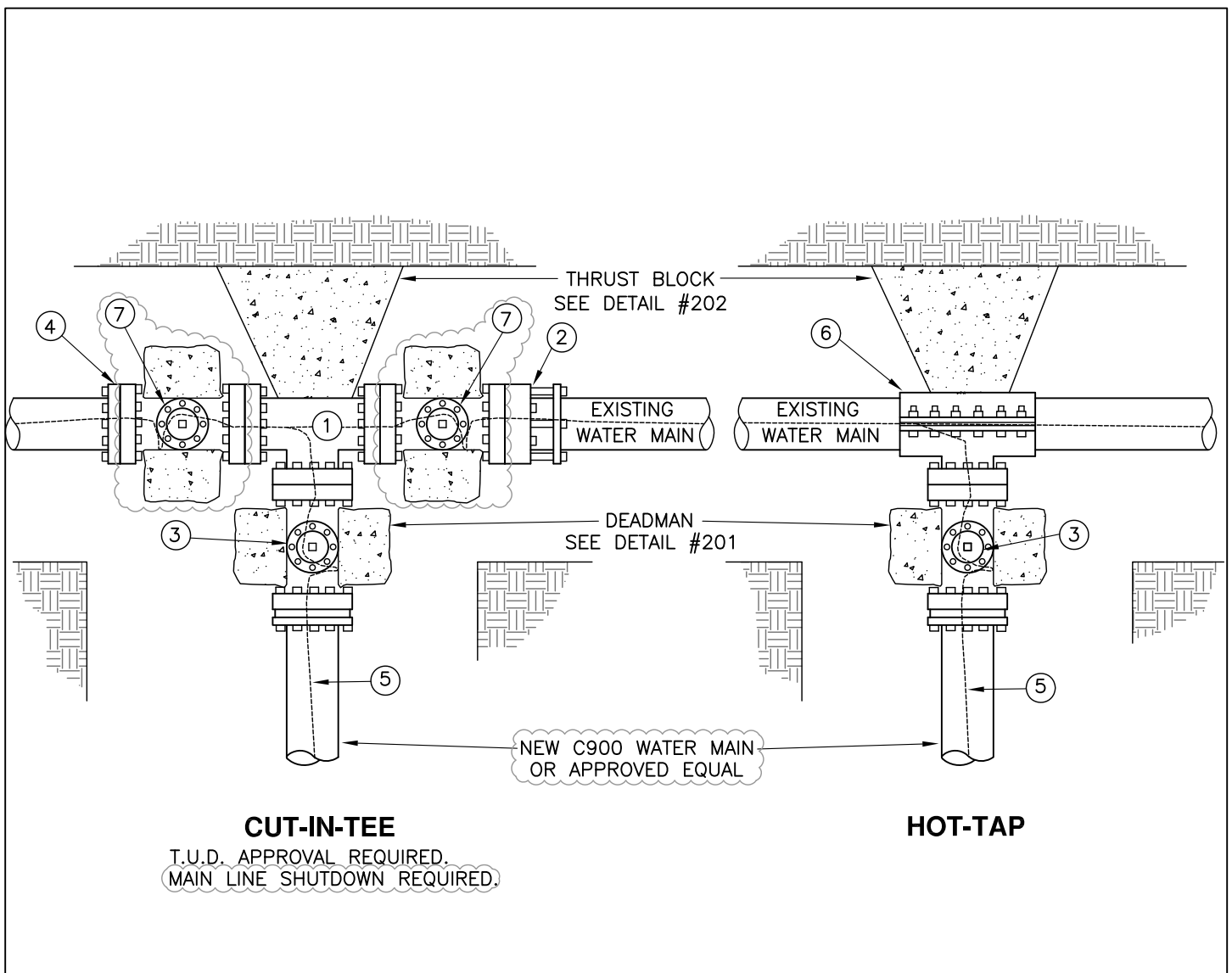
2" SERVICE

SEE DWG. #201
FOR UTILITY BOX &
VALVE INSTALLATION

NOTES

- A. SERVICES SHALL BE LOCATED OUT OF TRAVELED WAY (INCLUDING SHOULDERS) UNLESS APPROVED BY T.U.D.
- B. SERVICES LOCATED WITHIN THE TRAVELED WAY SHALL HAVE A 6" WIDE BY 6" DEEP CONCRETE COLLAR.
- C. ONE METER PER BOX ONLY.
- D. FOR DOUBLE, TRIPLE, OR QUADRUPLE SERVICE, USE BRASS PIPE FOR MANIFOLD BELOW ANGLE STOPS, SAME SIZE AS SERVICE PIPE.
- E. METERS WILL BE SET BY T.U.D. AFTER APPLICATION IS SIGNED AND FEES ARE PAID.
- F. USE POLYETHYLENE SERVICE TUBING CONTINUOUS FROM MAIN TO ANGLE STOP OR GATE VALVE, 1" DIA. FOR SINGLE SERVICE, 1-1/2" DIA. FOR DOUBLE SERVICE, AND 2" DIA. FOR TRIPLE & QUADRUPLE SERVICE.
- G. SERVICE SADDLES SHALL BE 3 FT. MIN. FROM PIPE FITTINGS, JOINTS AND TAPS.
- H. INSTALL SERVICE WITH PRV WHERE THE CALCULATED STATIC INLET PRESSURE IS 80 PSI OR GREATER.
- I. PER SECTION 64591 OF THE CALIFORNIA WATERWORKS STANDARDS, ALL ITEMS IN CONTACT WITH POTABLE WATER SHALL BE CERTIFIED AS MEETING THE SPECIFICATIONS OF NSF61-2005.
- J. CONTRACTOR SHALL BE RESPONSIBLE TO PRESSURE TEST ALL PIPE, VALVES & FITTINGS UP TO THE ANGLE STOP.

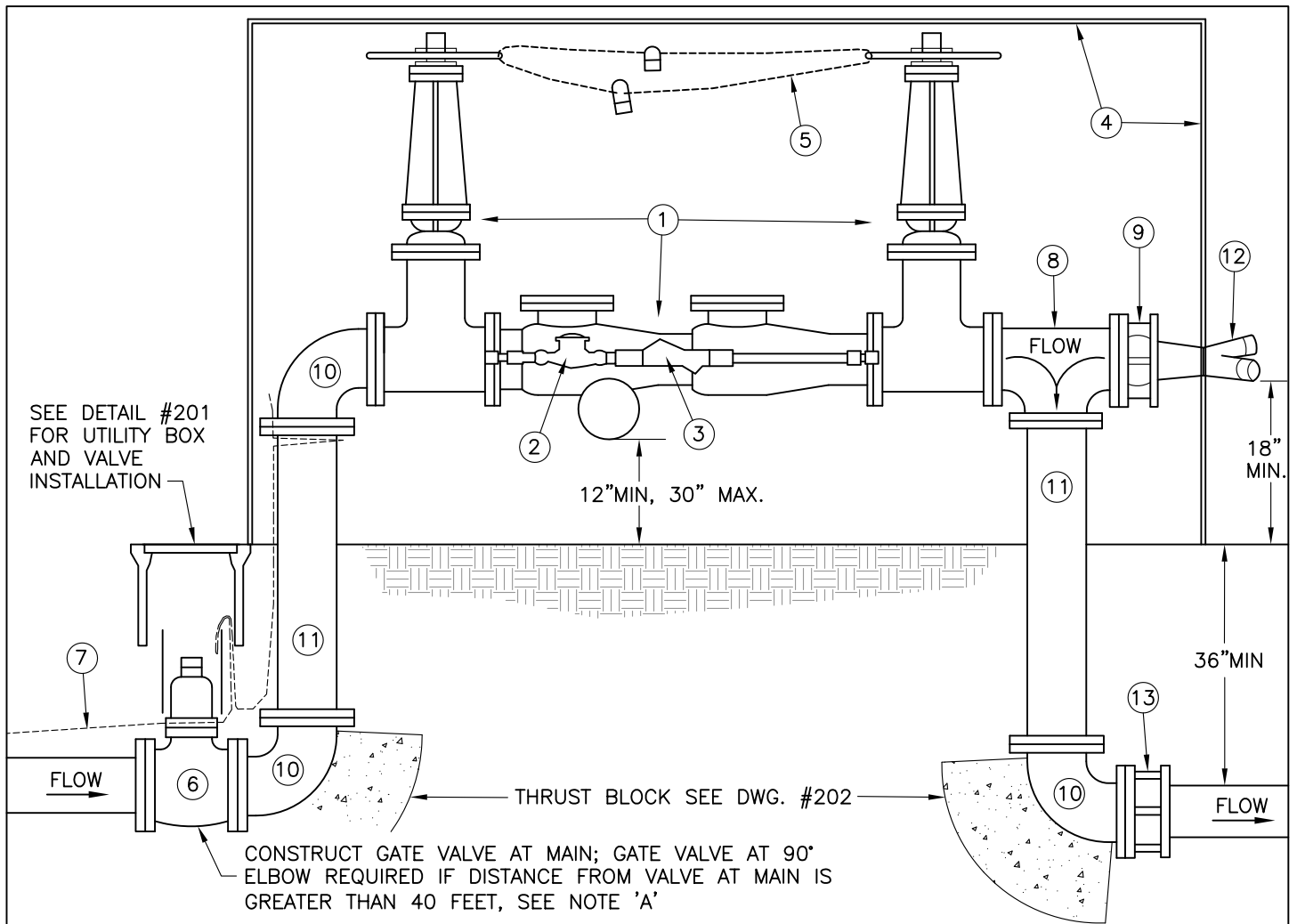
ITEM	DESCRIPTION	REMARKS
(1)	CHRISTY B16 BOX FOR 3/4" OR 1" METERS CHRISTY B36 BOX FOR 1-1/2" OR 2" METERS	ARMORCAST LID #A6000489-BG W/A9002736 ADAPTER ARMORCAST LID #A60001643-BG W/A9002736 ADAPTER
(2)	LOCKABLE ANGLE STOP: 3/4" OR 1" METERS LOCKABLE ANGLE STOP: 1-1/2" OR 2" METERS	FORD KV13-444W FOR CL150; FORD BA13-444W-K FOR CL200 FORD BFA13-666W-K OR BFA13-777W-K
(3)	POLYETHYLENE SERVICE TUBING, 200 PSI MIN.	WESTFLEX, OR APPROVED EQUAL, SEE NOTE 'E'
(4)	#12 AWG INSULATED LOCATOR WIRE	SINGLE STRAND COPPER, <u>UF LISTED</u> , SEE DWG. #102
(5)	SERVICE SADDLE	FORD FS202 STAINLESS STEEL BAND
(6)	TRAFFIC VALVE BOX MARKED "WATER"	CHRISTY G5 BOX W/G5C LID OR APPROVED EQUAL
(7)	2" RESILIENT WEDGE GATE VALVE, EPOXY COATED	AMERICAN AVK OR APPROVED EQUAL (2" SERVICE)
(8)	2" MIP x CTS ADAPTER (BRASS)	MULTIPLE SERVICES ONLY
(9)	CORPORATION STOP (MALE x MALE) 1.5" SERVICE: FORD FB500-6-K/C14-66-K	1" SERVICE: FORD F500-4/C14-44 FOR CL150 1" SERVICE: FORD FB500-4/C14-44 FOR CL200
(10)	1/4" HARDWARE CLOTH (GALV.)	MUST COVER ALL ACCESS HOLES.
(11)	PRV, SIZE TO MATCH METER, 1" MIN. SEE NOTE 'G'	1" PRV: WATTS #N55B-MIDU OR CLA-VAL #990 (DOUBLE UNION) 1.5 OR 2" PRV: WATTS #N55B OR CLA-VAL #990



NOTES

- A. UNLESS OTHERWISE APPROVED, ALL CONNECTIONS TO EXISTING T.U.D. MAINS SHALL BE BY "HOT-TAP" WITH APPROVED TAPPING SLEEVE.
- B. WATER AND FIRE PROTECTION SERVICE SHALL NOT BE DISRUPTED WITHOUT PRIOR APPROVAL BY T.U.D. NOTIFICATION TO CUSTOMERS OF WATER OUTAGE SHALL FIRST BE MADE BY T.U.D.; 48 HOURS NOTICE IS REQUIRED PRIOR TO WORK BEING PERFORMED BY THE CONTRACTOR.
- C. IT IS THE CONTRACTOR'S RESPONSIBILITY TO DRAIN AND DISPOSE OF WATER FROM THE EXISTING MAIN UNDER THE SUPERVISION OF T.U.D.
- D. T.U.D. IS RESPONSIBLE FOR FLUSHING AND PURGING THE EXISTING MAIN AFTER THE CONNECTION HAS BEEN MADE.
- E. VALVES ARE TO REMAIN CLOSED FOR A MINIMUM OF 5 DAYS TO ALLOW THE CONCRETE THRUST BLOCK TO CURE.
- F. ALL FITTINGS INSTALLED ON EXISTING WATER MAIN SHALL BE 3 FT. MIN. FROM JOINTS, FITTINGS OR TAPS.
- G. COAT BURIED NUTS & BOLTS WITH KOPPERS BITUMASTIC #50 OR TAPE WITH 10 MILS. PVC TAPE, 3 WRAPS MIN.
- H. FITTINGS, JOINTS, BOLTS AND NUTS ARE TO BE COVERED WITH PLASTIC SHEETING (4 MIL. THICK MIN.) PRIOR TO PLACEMENT OF CONCRETE. ALL BOLTS SHALL BE ACCESSIBLE AFTER KICKERS ARE PLACED.

ITEM	QTY	DESCRIPTION	REMARKS
①	1	FLANGED TEE	
②	1	FLANGED COUPLING ADAPTER	FORD STYLE FFCA OR APPROVED EQUAL
③	3	RESILIENT WEDGE VALVE	FLANGE x MJ UNLESS OTHERWISE APPROVED, SEE DETAIL #201
④	1	FLxMJ ADAPTER	CAST IRON
⑤		#12 AWG INSULATED LOCATOR WIRE	SINGLE STRAND COPPER, <u>UF LISTED</u> , SEE DWG. #102
⑥	1	STAINLESS STEEL TAPPING SLEEVE	ROMAC "SST", ROCKWELL 622, FORD "FAST" OR APPROVED EQUAL
⑦	2	RESILIENT WEDGE VALVE	FLANGE x FLANGE



NOTES

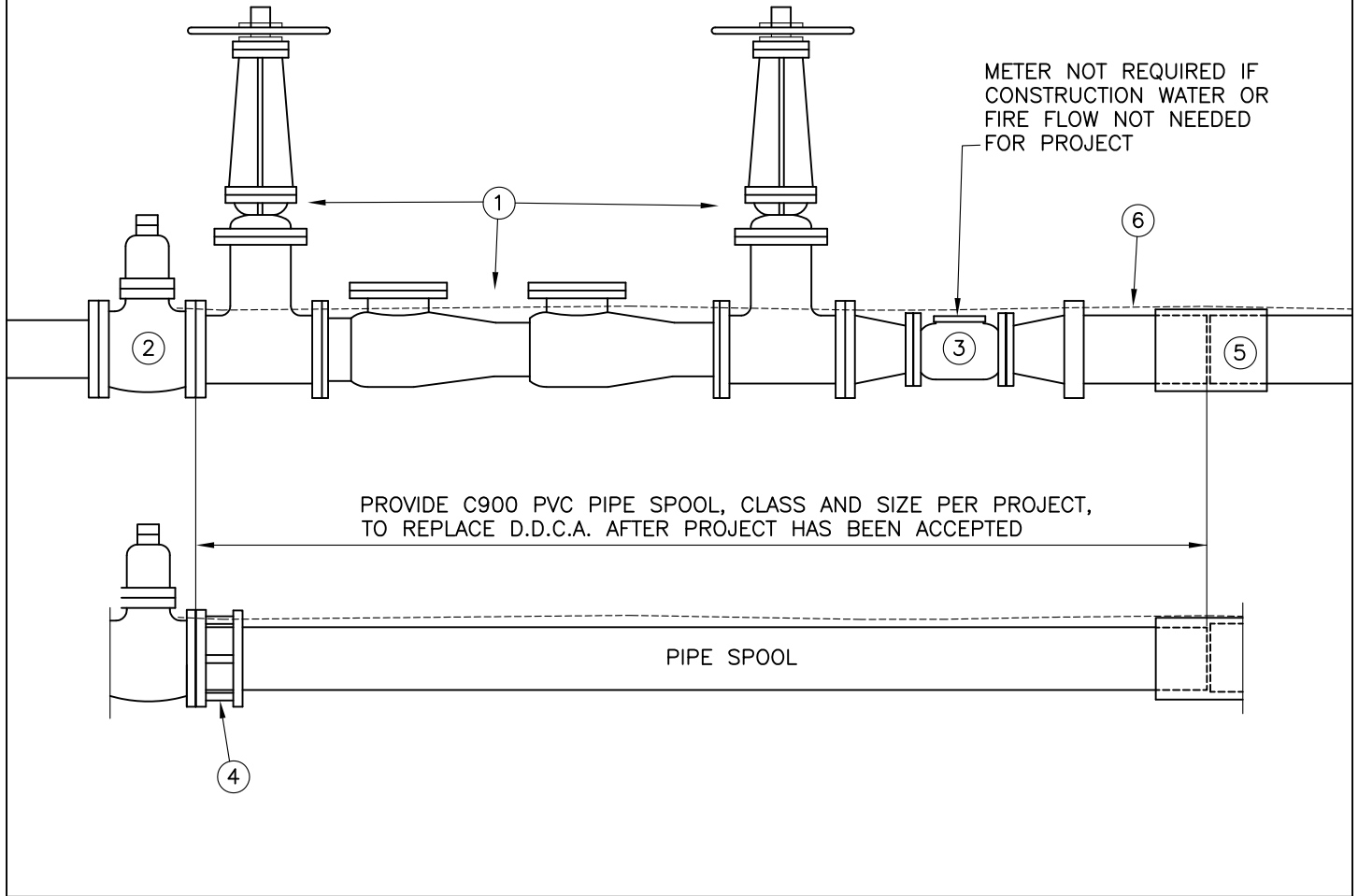
- A. ALL MAINTENANCE, LIABILITY AND TESTING OF THE DOUBLE CHECK DETECTOR ASSEMBLY (D.C.D.A.) SHALL BE SOLELY BY CUSTOMER, PER T.U.D. REGULATIONS, STARTING AT THE VALVE CLOSEST TO THE D.C.D.A.
- B. EXPOSED MAIN AND BYPASS PIPE ABOVE GROUND SHALL BE WRAPPED WITH INSULATION WHEREVER IT DOES NOT INTERFERE WITH OPERATION OF THE D.C.D.A.
- C. D.C.D.A. SHALL BE ON THE CURRENT STATE APPROVED LIST. SEE T.U.D. FOR LIST.
- D. CHECK WITH THE APPROPRIATE FIRE DEPARTMENT FOR SPECIFIC ADDITIONAL REQUIREMENTS.
- E. WHERE ANY SUBSTANCES WILL BE INJECTED INTO THE FIRE SPRINKLER SYSTEM, D.C.A. SHALL HAVE REDUCED-PRESSURE PRINCIPLE BACKFLOW PREVENTORS ON BOTH THE MAIN LINE AND THE BYPASS LINE.
- F. FIRE DEPARTMENT CONNECTION SHALL BE LOCATED SO THAT HOSE LINES CAN BE READILY ATTACHED WITHOUT INTERFERENCE FROM NEARBY OBJECTS INCLUDING BUILDINGS, FENCES OR OTHER FIRE DEPT. CONNECTIONS.
- G. COAT BURIED NUTS & BOLTS WITH KOPPERS BITUMASTIC #50 OR TAPE WITH 10 MILS. PVC TAPE, 3 WRAPS MIN.
- H. FITTINGS, JOINTS, BOLTS AND NUTS ARE TO BE COVERED WITH PLASTIC SHEETING (4 MIL THICK MIN.) PRIOR TO PLACEMENT OF CONCRETE. NO CONCRETE TO BE ALLOWED ON BOLTS.

ITEM	QTY	DESCRIPTION
①	1	APPROVED DOUBLE CHECK DETECTOR ASSEMBLY WITH METER BYPASS
②	1	5/8" BYPASS WATER METER, MUST BE READ IN CUBIC FT.
③	1	DOUBLE CHECK BACKFLOW PREVENTER
④	1	WEATHERGUARD BLANKET (OR EQUAL) OR APPROVED ENCLOSURE
⑤	1	1/4" GALV. STEEL CHAIN W/2 KEYED PADLOCKS: ONE FOR T.U.D AND ONE FOR FIRE DEPT./CDF
⑥	1	RESILIENT WEDGE GATE VALVE, SEE DWG. NO. 201
⑦	1	#12 AWG INSULATED LOCATOR WIRE, SINGLE STRAND COPPER, <u>UF LISTED</u> , SEE DWG. #102
⑧	1	DUCTILE IRON FLANGED TEE
⑨	1	WAFER CHECK VALVE
⑩	3	DUCTILE IRON 90° FLANGED ELBOW
⑪	2	DUCTILE IRON FLANGED RISER
⑫	1	FIRE DEPARTMENT CONNECTION
⑬	2	FLANGExMJ FITTING

**TUOLUMNE UTILITIES DISTRICT
DOUBLE CHECK DETECTOR ASSEMBLY**

REV. 02-09-06
STD. DWG. NO.
210

INSTALLATION OF TEMPORARY DOUBLE CHECK DETECTOR ASSEMBLY REQUIRED PRIOR TO CONSTRUCTION OF NEW WATER FACILITIES



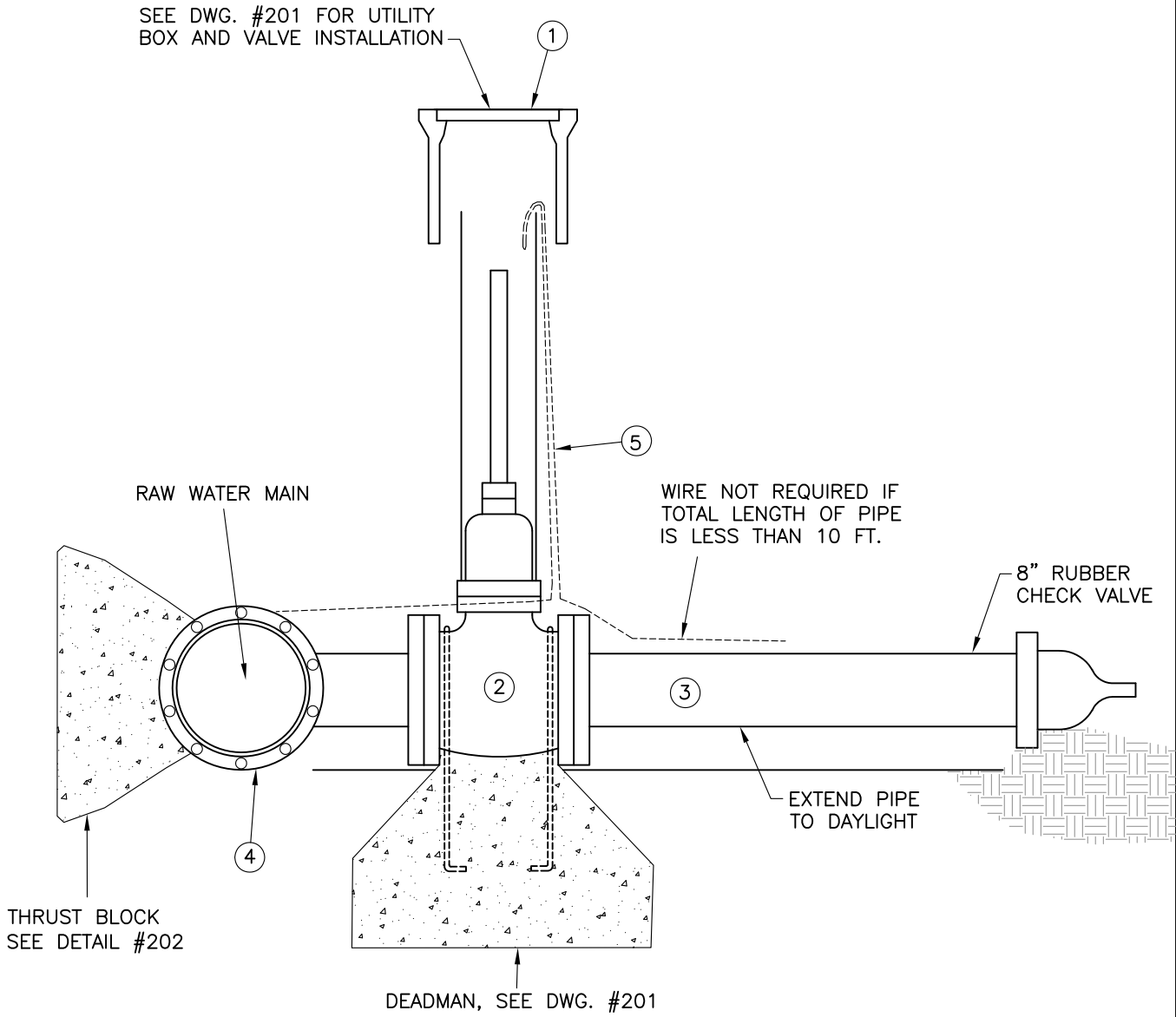
NOTES

- A. DETECTOR CHECK DETECTOR ASSEMBLY (D.C.D.A.) SHALL BE ON THE CURRENT STATE-APPROVED LIST. SEE T.U.D. FOR LIST.
- B. COAT BURIED NUTS & BOLTS WITH KOPPERS BITUMASTIC #50 OR TAPE WITH 10 MILS. PVC TAPE, 3 WRAPS MIN.
- C. FITTINGS, JOINTS, BOLTS AND NUTS ARE TO BE COVERED WITH PLASTIC SHEETING (4 MIL THICK MIN.) PRIOR TO PLACEMENT OF BACKFILL.
- D. CONTRACTOR IS RESPONSIBLE FOR SUPPORTING AND PROTECTING D.C.D.A. AND METER UNTIL PROJECT HAS BEEN COMPLETED AND ACCEPTED BY T.U.D.

ITEM	QTY	DESCRIPTION
①	1	APPROVED DOUBLE CHECK DETECTOR ASSEMBLY
②	1	RESILIENT WEDGE GATE VALVE, SEE DWG. #201
③	1	4" TURBINE METER WITH 6"x4" FLxFL REDUCER & 4"x8" FLxMJ REDUCER
④	1	FLANGExCOUPLING ADAPTER
⑤	1	C900 COUPLING
⑥		#12 AWG INSULATED LOCATOR WIRE, SINGLE STRAND COPPER, <u>UF LISTED</u> , SEE DWG. #102

**TUOLUMNE UTILITIES DISTRICT
DOUBLE CHECK DETECTOR ASSEMBLY
FOR PROJECT UNDER CONSTRUCTION**

REV. 02-09-06
STD. DWG. NO.
211



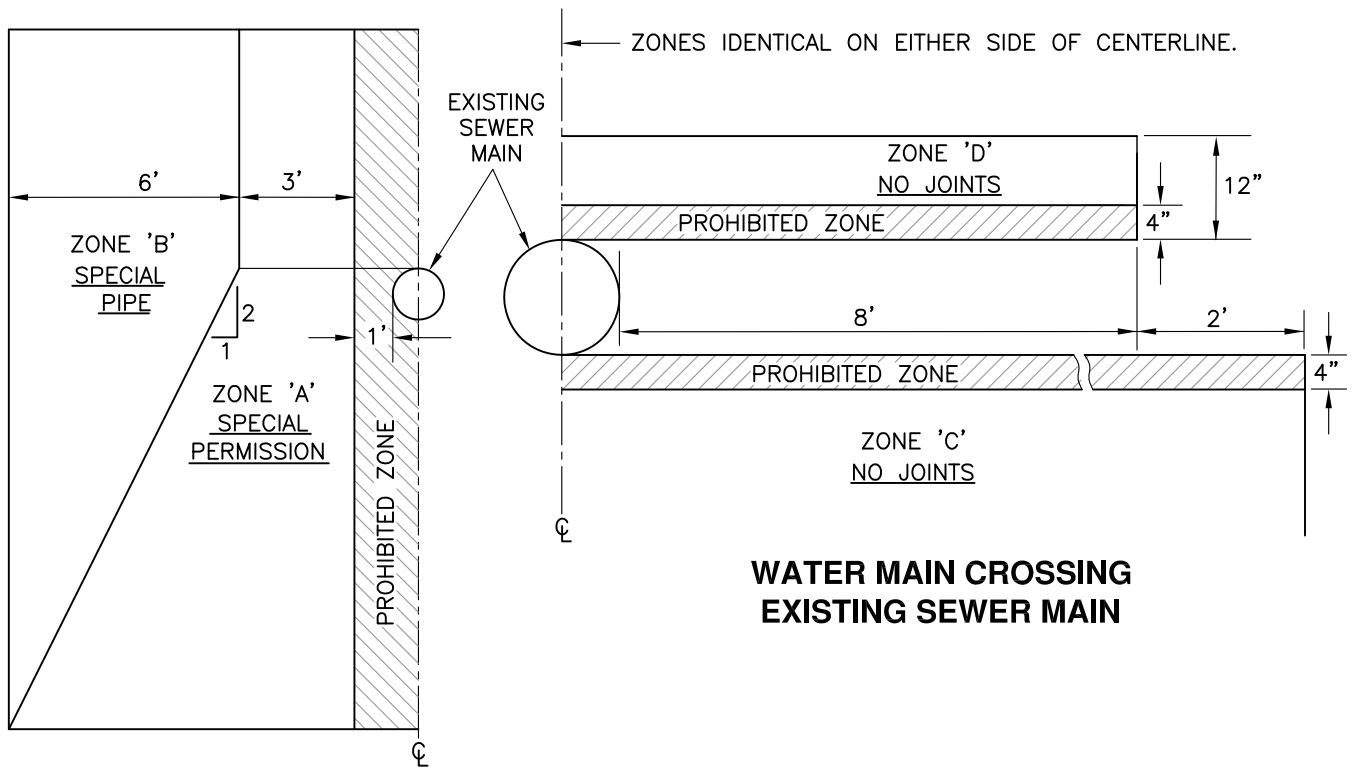
NOTES

- A. EXTEND OUTLET PIPE INTO DRAINAGE AREA TO AVOID EROSION PROBLEMS AT OUTLET. SUPPORT SHALL BE HANDLED ON A CASE BY CASE BASIS. INSTALL 6" MIN. STONE RIPRAP TO DISSIPATE ENERGY.
- B. ROTATE BLOWOFF DOWNHILL MAKING SURE VALVE IS EASILY ACCESSIBLE.
- C. COAT BURIED NUTS & BOLTS WITH KOPPERS BITUMASTIC NO. 50 OR TAPE W/10 MILS. PVC TAPE, 3 WRAPS MIN.
- D. FITTINGS, JOINTS, BOLTS AND NUTS ARE TO BE COVERED WITH PLASTIC SHEETING (4 MIL THICK MIN.) PRIOR TO PLACEMENT OF CONCRETE. NO CONCRETE TO BE ALLOWED ON BOLTS.

ITEM	QTY	DESCRIPTION	REMARKS
①	1	TRAFFIC VALVE BOX W/LID MARKED "WATER"	CHRISTY G5 W/ G5C LID
②	1	RESILIENT WEDGE GATE VALVE, 2" SQUARE NUT	CLASS 150, NONRISING STEM, SIZE TO MATCH PIPE
③	1	C900 PVC, CLASS DEPENDS ON PRESSURE	PIPE SIZE SHALL BE 1/2 DIA. OF MAIN LINE
④	1	FLANGED TEE TO MATCH MAIN LINE AND OUTLET SIZE	CAST IRON, CLASS 150, OR AS APPROVED BY T.U.D.
⑤		#12 AWG INSULATED LOCATOR WIRE	SINGLE STRAND COPPER, <u>UF LISTED</u> , SEE DWG. #102

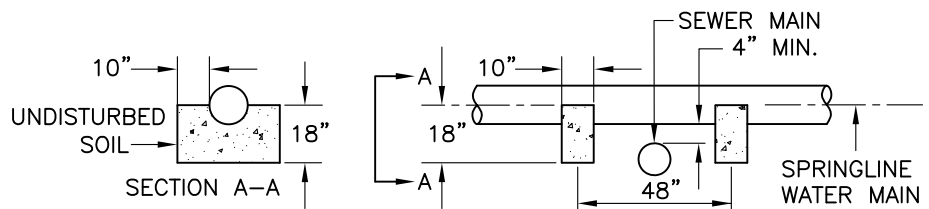
**TUOLUMNE UTILITIES DISTRICT
RAW-WATER MAIN LOW-POINT BLOWOFF**

REV. 11-21-07
STD. DWG. NO.
212



WATER MAIN PARALLEL TO EXISTING SEWER MAIN

WATER MAIN CROSSING EXISTING SEWER MAIN



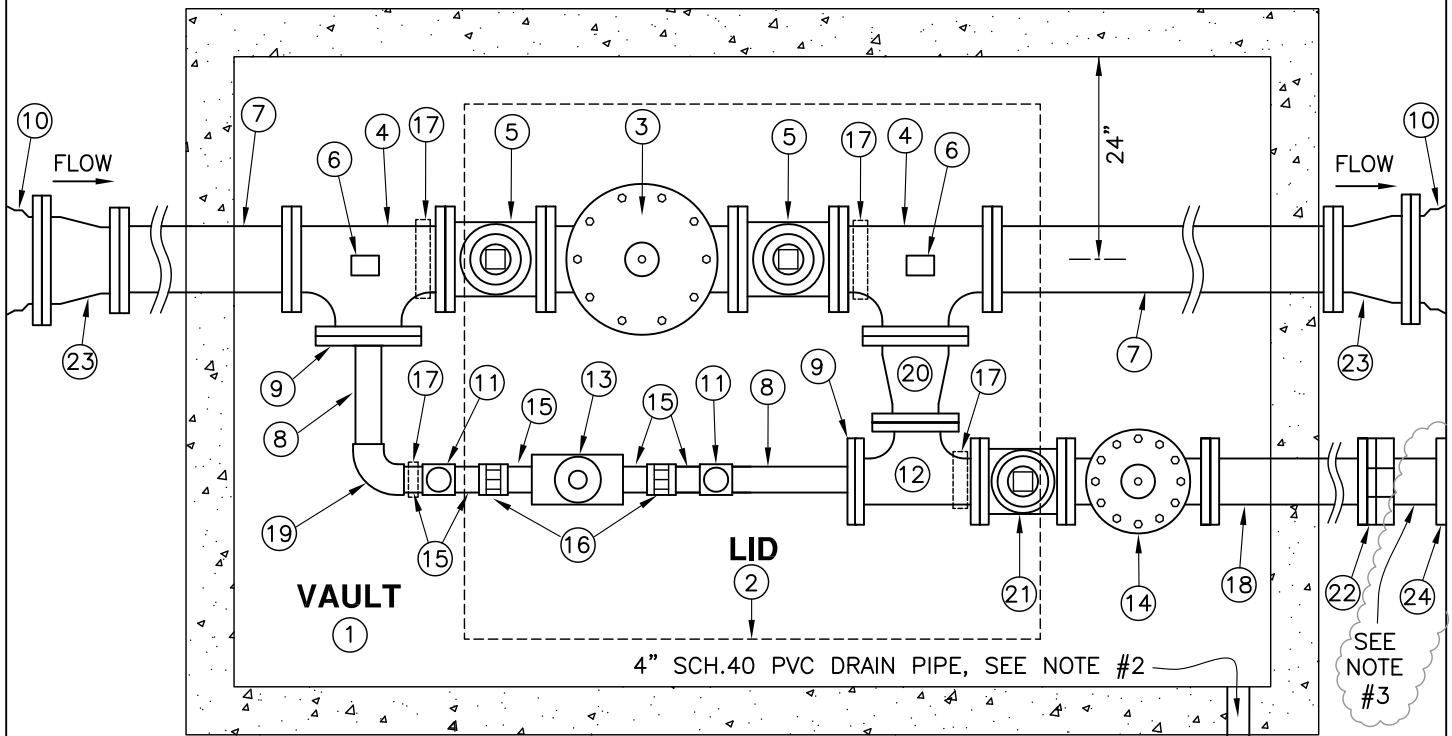
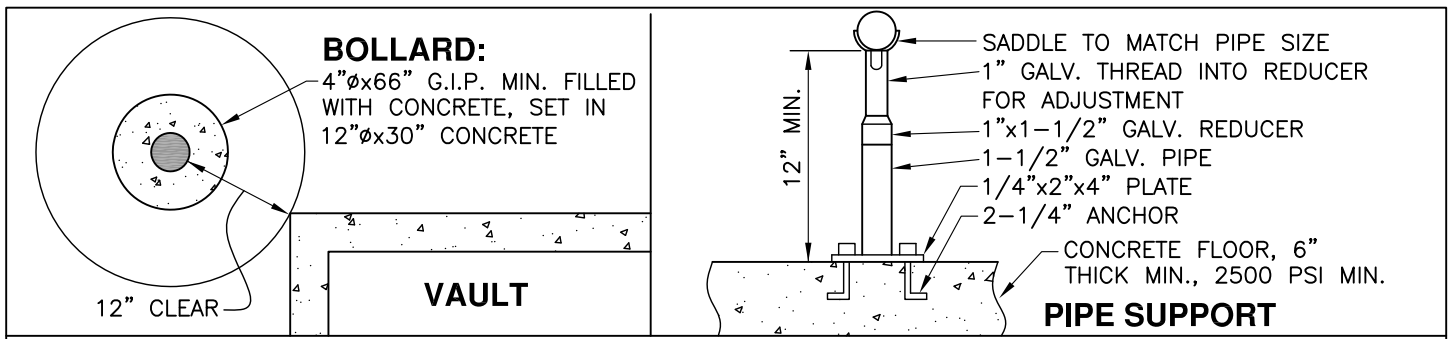
CONCRETE PIPE SUPPORT
REQUIRED IF 12" OR LESS SEPARATION

SPECIAL CONSTRUCTION REQUIRED FOR WATER MAIN

- ZONE A: WATER MAIN PARALLEL TO SEWER MAIN SHALL NOT BE PERMITTED IN THIS ZONE WITHOUT APPROVAL FROM THE CALIFORNIA STATE DEPARTMENT OF HEALTH SERVICES AND T.U.D.
- ZONE B: WATER MAIN PARALLEL TO SEWER MAIN SHALL BE CONSTRUCTED OF DUCTILE IRON PIPE WITH INTERIOR CEMENT COATING OR C900, CLASS 200 PVC PIPE (DR14).
- ZONE C: WATER MAIN CROSSING UNDER SEWER MAIN SHALL HAVE NO JOINTS AND SHALL BE CONSTRUCTED WITH ONE OF THE TWO MATERIALS LISTED UNDER ZONE B.
- ZONE D: WATER MAIN CROSSING OVER SEWER MAIN SHALL HAVE NO JOINTS WITHIN 8 FEET OF SEWER MAIN AND SHALL BE CONSTRUCTED OF ZONE 'B' MATERIALS.

NOTES

- A. WATER MAIN PARALLEL TO SEWER FORCE-MAIN SHALL HAVE A HORIZONTAL SEPARATION OF 10 FT. MIN.
- B. WATER MAIN CROSSING OVER SEWER FORCE-MAIN SHALL BE AS CLOSE TO PERPENDICULAR AS PRACTICAL AND AT LEAST ONE FOOT ABOVE FORCE-MAIN. WATER MAIN SHALL HAVE NO JOINTS WITHIN 8 FT. EITHER SIDE OF FORCE-MAIN AND BE CONSTRUCTED OF ZONE 'B' MATERIAL.
- C. WATER MAIN PARALLEL TO STORM DRAIN SHALL HAVE A HORIZONTAL SEPARATION OF 4 FT. AND A VERTICAL SEPARATION OF ONE FOOT. VERTICAL SEPARATION IS REQUIRED ONLY WHEN HORIZONTAL SEPARATION IS 10 FEET OR LESS.



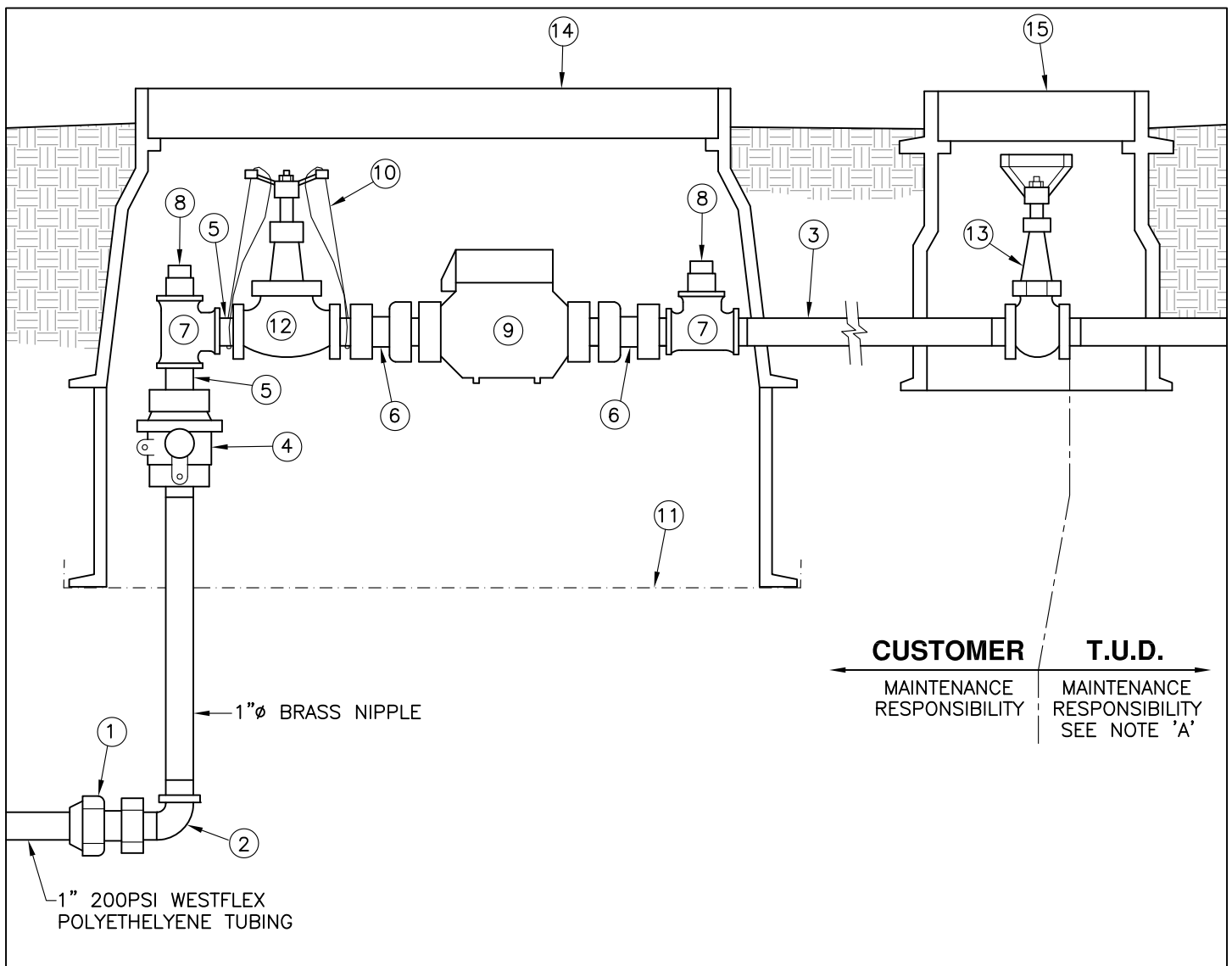
NOTES:

1. COAT BURIED NUTS & BOLTS WITH KOPPERS BITUMASTIC NO. 50 OR TAPE WITH 10 MILS PVC TAPE, 3 WRAPS MIN. AND COVER WITH PLASTIC SHEETING (4 MIL THICK MIN.)
2. DRAIN TO DAYLIGHT; FIELD LOCATE PENETRATION; LENGTH AND ORIENTATION OF DRAIN PIPE TO BE DETERMINED IN FIELD; ATTACH RODENT SCREEN TO END OF PIPE.
3. 4" C900 RELIEF PIPELINE, DRAIN TO DAYLIGHT, PLACE 3'x6' RIPRAP APRON AT DISCHARGE POINT.

① VAULT: "COOK CONCRETE PRODUCTS" OR EQUAL: 6'x9'x4'-8" DEEP x 6" THICK, 2500 PSI MIN. CONSTRUCT VAULT ON 6" OF 3/4" A.B. (COMPACTED). PLACE BOLLARDS ON ALL SIDES OF VAULT EXPOSED TO TRAFFIC (SEE DETAIL).

② LID (OUTSIDE TRAFFIC AREA): 5'x5' ALUM. RATED FOR OCCASIONAL H₂O LOADING.
 LID (INSIDE TRAFFIC AREA): 5'x5' TORSION-ASSISTED STEEL, RATED FOR CONTINUOUS H₂O LOADING.

③	1	6" P.R.V., CLA-VAL, 90-01AB W/STAINLESS STEEL TRIM, OR PER T.U.D.	⑭	1	4" PRESSURE RELIEF VALVE, CLA-VAL 50-01, W/STAINLESS STEEL TRIM
④	2	6"x6"x6" TEE, DUCTILE IRON	⑮	5	2" CLOSE NIPPLE-BRASS ⑯ (2) 2" UNION, BRASS
⑤	2	6" GATE VALVE, FLANGED	⑰	4	PIPE SUPPORT, SEE DETAIL ABOVE
⑥	2	PRESSURE GAUGE WITH BALL VALVE	⑱	1	4" DUCTILE IRON SPOOL, 36" LONG, CEMENT MORTAR LINED
⑦	2	8" DUCTILE IRON SPOOL, FLANGED, 48" LONG, CEMENT-MORTAR LINED	⑲	1	2" BRASS 90° ELBOW, FIPxFIP
⑧	1	2" BRASS NIPPLE, LENGTH AS NEEDED	⑳	1	6"x4" REDUCER, DUCTILE IRON
⑨	2	BLIND FLANGE TAPPED 2" (SIZE AS REQUIRED)	㉑	1	4" GATE VALVE, FLANGED
⑩	2	8" FLxMJ ADAPTER W/GRIP RINGS	㉒	1	4" FLANGE COUPLING ADAPTER OR FLxMJ ADAPTER
⑪	2	2" BRASS GATE VALVE, RED & WHITE	㉓	2	8"x6" REDUCER, DUCTILE IRON
⑫	1	4"x4"x4" TEE, DUCTILE IRON, FLANGED	㉔	1	4" FLANGED RUBBER CHECK VALVE, PROC0710
⑬	1	2" P.R.V., CLA-VAL 90-01AS, W/STAINLESS STEEL TRIM, OR PER T.U.D.			



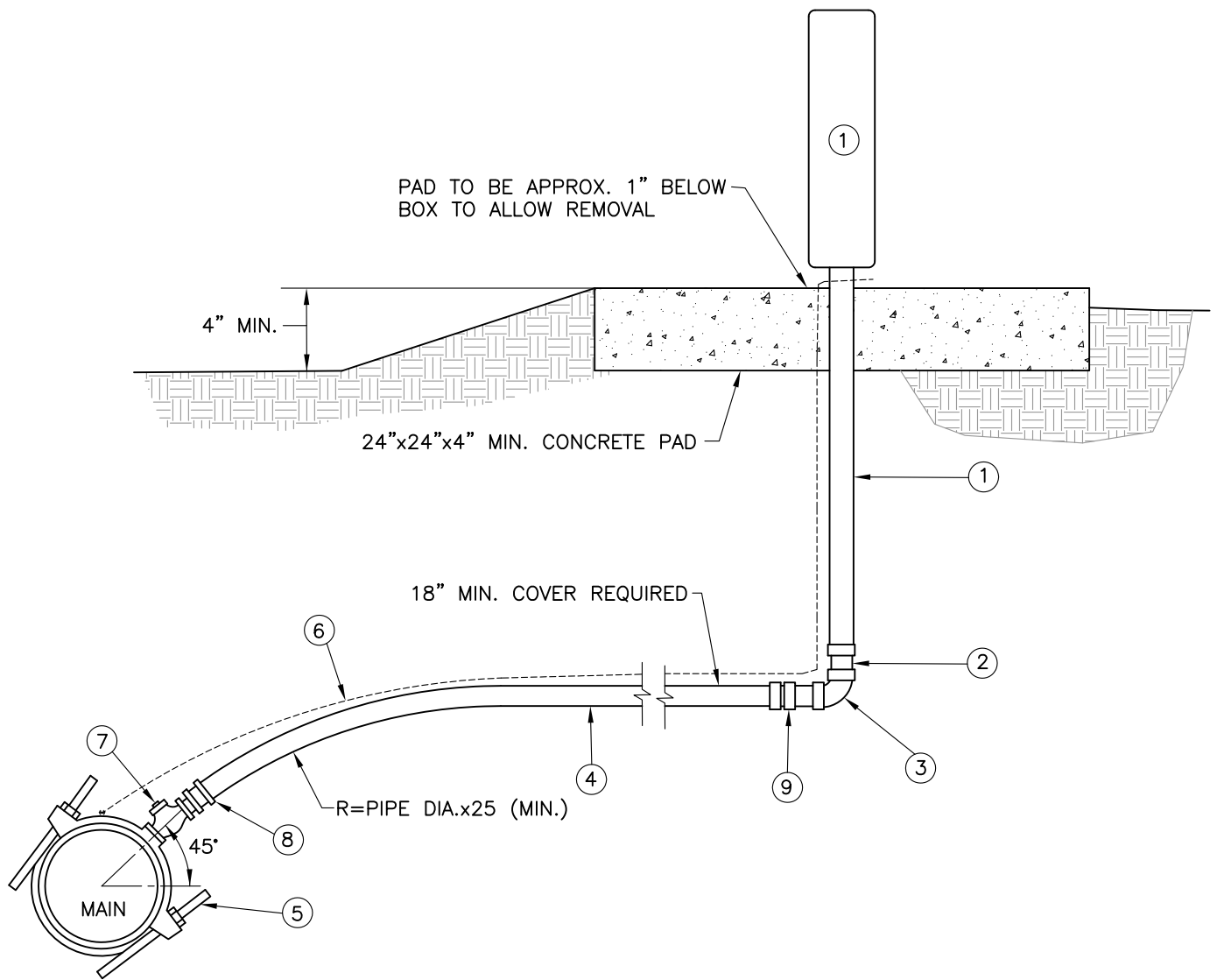
NOTES

- A. CUSTOMER TO PROVIDE PRVs AND Y-STRAINER IF NECESSARY.
 B. ASSUME 16 GPM MAX. AT 31 FT. HEAD AT CUSTOMER PIPING CONNECTION.

ITEM	QTY	DESCRIPTION	REMARKS
(1)	1	1"CTS TO 1"MALE IPS (PACK JOINT)	FORD #C84-44 OR APPROVED EQL
(2)	1	1" BRASS STREET 90° ELBOW	
(3)	2	1" STEEL NIPPLE, 18"LONG	GALV. SCH.40
(4)	1	1" CURB-STOP (BALL VALVE) W/PADLOCK WING	FORD #B11-444, OR APPROVED EQUAL
(5)	2	1" STEEL CLOSE NIPPLE	GALV. SCH.40
(6)	2	METER COUPLING 1" MALE IPS TO 5/8"x3/4" METER THD.	FORD #38-24-2.5
(7)	2	1" TEE	GALV. 150# MI
(8)	2	1" PIPE PLUG W/SQ. HEAD	GALV.
(9)	1	METERED ACCOUNTS: 5/8"x3/4" METER UNMETERED ACCOUNTS: 7-1/2" METER IDLER	FORD NO. 2
(10)	2	PG&E WIRE SECURITY TIES	TO PREVENT TAMPERING
(11)	1	1-1/4" HARDWARE CLOTH (GALV.)	MUST COVER ACCESS HOLES
(12)	1	1"GLOBE VALVE CL150 BRONZE, TEFLON SEAT SCREWED	STOCKHAM B-22T
(13)	1	GATE VALVE, CLASS 150 BRONZE, SCREWED	STOCKHAM B-120
(14)	1	"FIBRELYTE" BOX	CHRISTY FL30 BOX W/FL30D LID
(15)	1	"FIBRELYTE" BOX	CHRISTY FL8 BOX W/FL8D LID

TUOLUMNE UTILITIES DISTRICT
RAW-WATER SERVICE ON PRESSURE PIPELINE

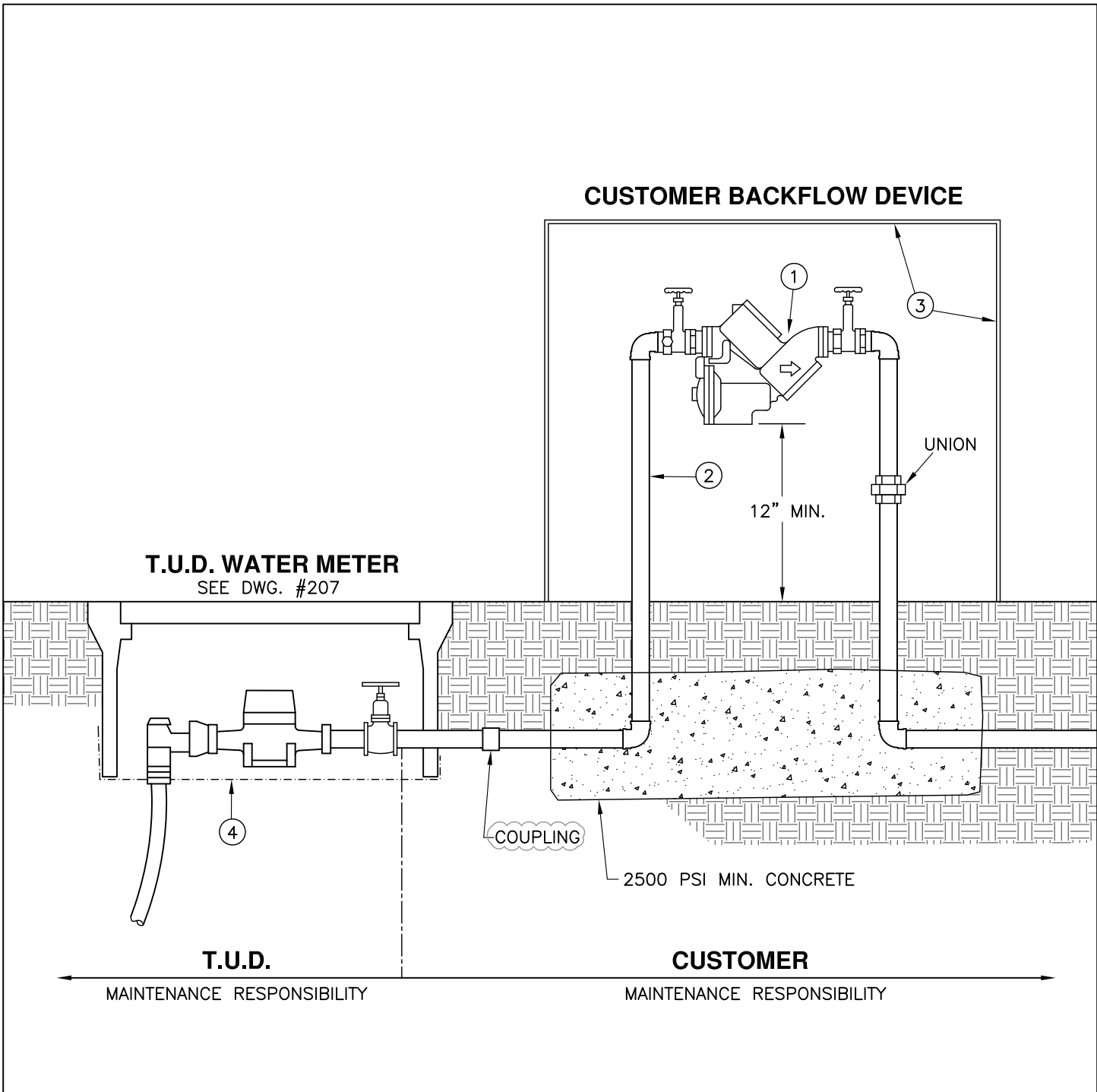
REV. 09-29-07
 STD. DWG. NO.
215



NOTES

- A. SAMPLE STATION SHALL BE LOCATED NEAR THE PROPERTY LINE OR EASEMENT IN AN EASILY ACCESSIBLE LOCATION THAT IS NOT SUBJECT TO TRAFFIC. BOLLARDS MAY BE REQUIRED.
- B. SERVICE SADDLES SHALL BE 3' MIN. FROM PIPE FITTINGS, JOINTS AND TAPS.

(1)	1	PREFABRICATED SAMPLE STATION	ECLIPSE #88 OR APPROVED EQUAL
(2)	1	3/4" BRASS NIPPLE	
(3)	1	3/4" BRASS 90° ELBOW	
(4)	1	3/4" POLYETHYLENE SERVICE TUBING	WESTFLEX, OR APPROVED EQUAL, 200 PSI MIN.
(5)	1	3/4" SERVICE SADDLE	FORD FS202 STAINLESS STEEL BAND
(6)	1	#12 AWG INSULATED LOCATOR WIRE	SINGLE STRAND COPPER, <u>UF LISTED</u> , SEE DWG. #102
(7)	1	CORPORATION STOP (MALExMALE)	FORD F500-4/C14-44-3/4"
(8)	1	3/4" FIP x CTS PACK JOINT	
(9)	1	3/4" MIP x CTS PACK JOINT	



NOTES

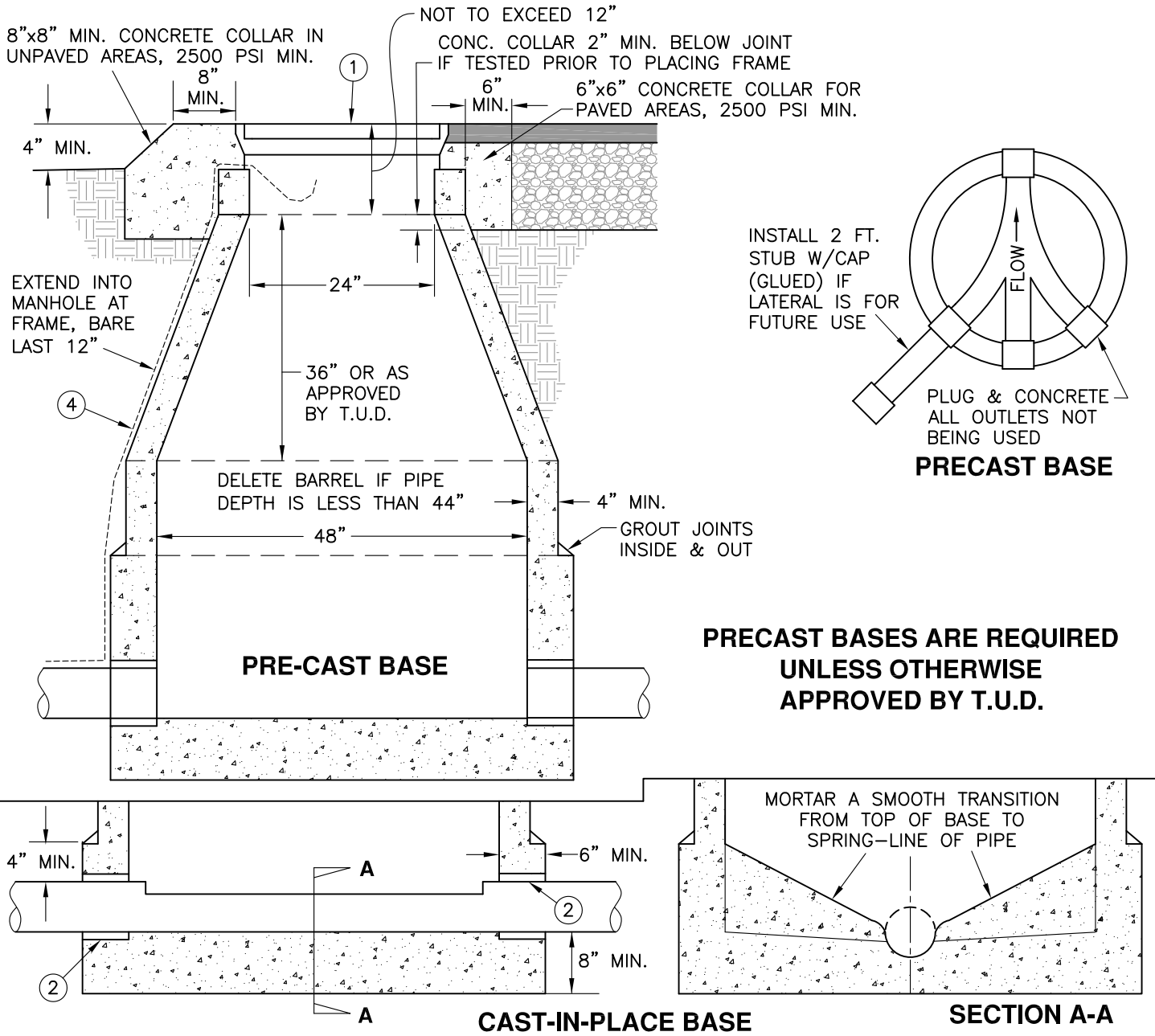
A. REDUCED-PRESSURE BACKFLOW ASSEMBLY SHALL BE LOCATED AS CLOSE AS POSSIBLE TO THE T.U.D. WATER METER WITH NO TEES OR CONNECTIONS BETWEEN THEM.

B. FITTINGS, JOINTS, BOLTS AND NUTS ARE TO BE COVERED WITH PLASTIC SHEETING (4 MIL THICK MIN.) OR 10 MIL. TAPE PRIOR TO PLACEMENT OF CONCRETE. NO CONCRETE TO BE ALLOWED ON BOLTS OR PIPE.

C. WRAP ALL UNDERGROUND GALVANIZED PIPE WITH 10 MIL. TAPE.

D. IF SOLID ENCLOSURE IS USED, MAINTAIN 12" MIN. CLEARANCE AROUND TEST-COCKS.

ITEM	QTY	DESCRIPTION	REMARKS
①	1	REDUCED-PRESSURE BACKFLOW PREVENTION ASSEMBLY	BRAND/MODEL PER STATE DEPARTMENT OF HEALTH SERVICES SPECIFICATIONS
②	1	BRASS OR GALVANIZED IRON PIPE	SIZE VARIES, SEE NOTE 'C'
③	1	INSULATED PROTECTIVE ENCLOSURE	WEATHERGUARD BLANKET OR EQUAL, SEE NOTE 'D'
④		1/4" HARDWARE CLOTH (GALV.)	MUST COVER ALL ACCESS HOLES



NOTES

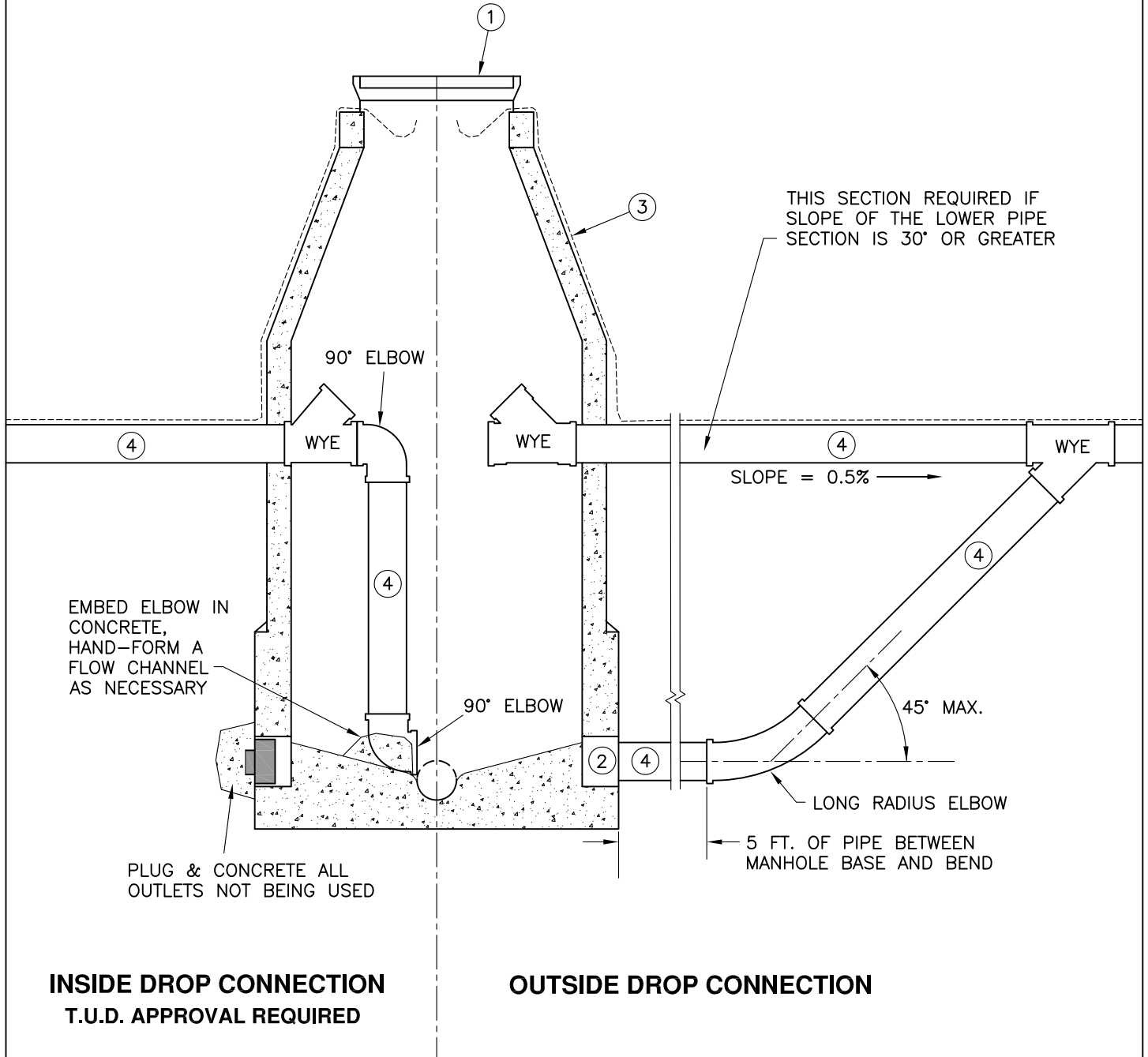
- A. USE 2500 PSI CONCRETE MIN. FOR CAST-IN PLACE BASE. PIPES ARE TO BE CONTINUOUS THROUGH MANHOLE WITH THE TOP HALF CUT AWAY AFTER BASE CURES.
- B. PRECAST BASE TO HAVE FITTINGS FOR PVC PIPE (TEICHERT OR EQUAL), 2,3 OR 4-WAY AS REQUIRED; ALL CHANNELS TO MATCH LARGEST PIPE.
- C. "T.U.D." AND "SEWER" TO BE WELDED ON COVER; USE 1/8" BEAD.
- D. PRECAST CONES AND BARREL SECTIONS SHALL CONFORM TO ASTM SPEC. C-478.
- E. POLYETHYLENE MANHOLES, "ADS" OR APPROVED EQUAL ARE ACCEPTABLE WITH T.U.D. APPROVAL.
- F. ALL MANHOLE JOINTS SHALL BE SEALED WITH RAM-NECK, KENT-SEAL #2 OR APPROVED EQUAL. INSIDE JOINTS SHALL BE TRIMMED AND MORTARED TO A SMOOTH FINISH. EXTERIOR OF MANHOLE IS TO BE COATED WITH AN APPROVED WATERTIGHT SEALER. IF HIGH GROUNDWATER IS EXPERIENCED, COAT EXTERIOR OF MANHOLE WITH BITUMASTIC SEALER.
- G. MANHOLE MUST PASS VACUUM TEST OF 10 HG; PRE-TESTING PRIOR TO BACKFILLING IS SUGGESTED. IF PRE-TESTED, CONCRETE COLLAR SHALL EXTEND 2" BELOW TOP OF CONE.
- H. BACKFILL MANHOLE WITH SELECT MATERIAL COMPACTED TO 95% RELATIVE DENSITY IN TRAFFIC AREAS, 90% IN ALL OTHER AREAS.

ITEM	QTY	DESCRIPTION	REMARKS
①	1	25-5/16" COVER & 4-1/2" FRAME	TEICHERT PTB213 OR APPROVED EQUAL
②	2	MANHOLE ADAPTOR, SILICONE COATED	GPK OR APPROVED EQUAL, GROUT IN PLACE
③		#12 AWG INSULATED LOCATOR WIRE	SINGLE STRAND COPPER, <u>UF LISTED</u> , SEE DWG. #102

**TUOLUMNE UTILITIES DISTRICT
STANDARD 48" MANHOLE WITH CAST-IN-PLACE BASE**

REV. 11-21-07
STD. DWG. NO.
301

SEE DWG. #301 FOR STANDARD MANHOLE CONSTRUCTION



INSIDE DROP CONNECTION
T.U.D. APPROVAL REQUIRED

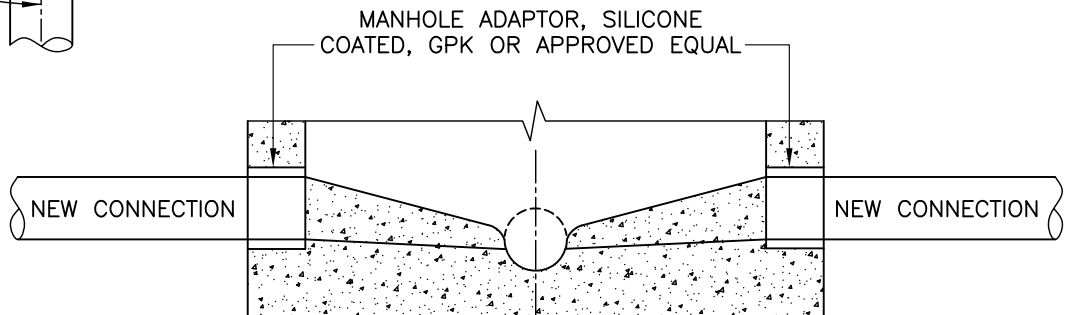
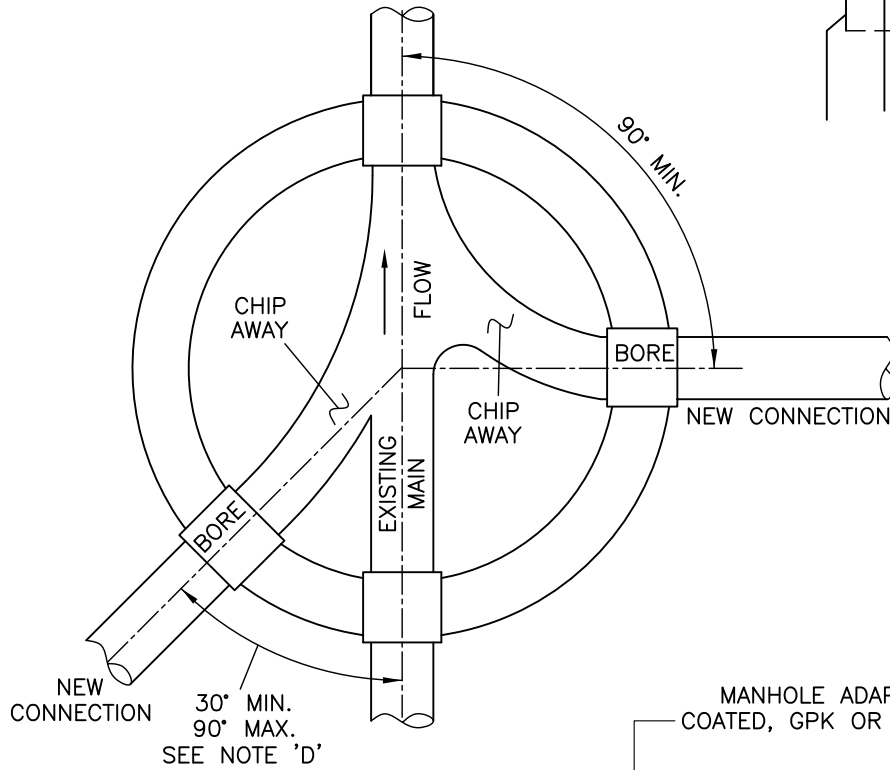
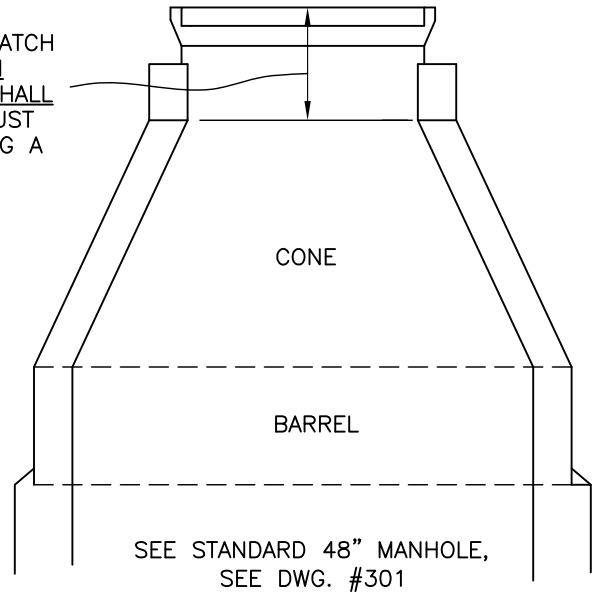
OUTSIDE DROP CONNECTION

ITEM	DESCRIPTION	REMARKS
①	25-5/16" MANHOLE COVER AND 4-1/2" FRAME	TEICHERT PTB213 OR APPROVED EQUAL
②	MANHOLE ADAPTOR, SILICONE COATED	GPK OR APPROVED EQUAL, FOR CAST-IN-PLACE BASES, GROUT IN PLACE
③	#12 AWG INSULATED LOCATOR WIRE	SINGLE STRAND COPPER, <u>UF LISTED</u> , SEE DWG. #102
④	SDR35 PVC PIPE	

TUOLUMNE UTILITIES DISTRICT
MANHOLE DROP CONNECTION

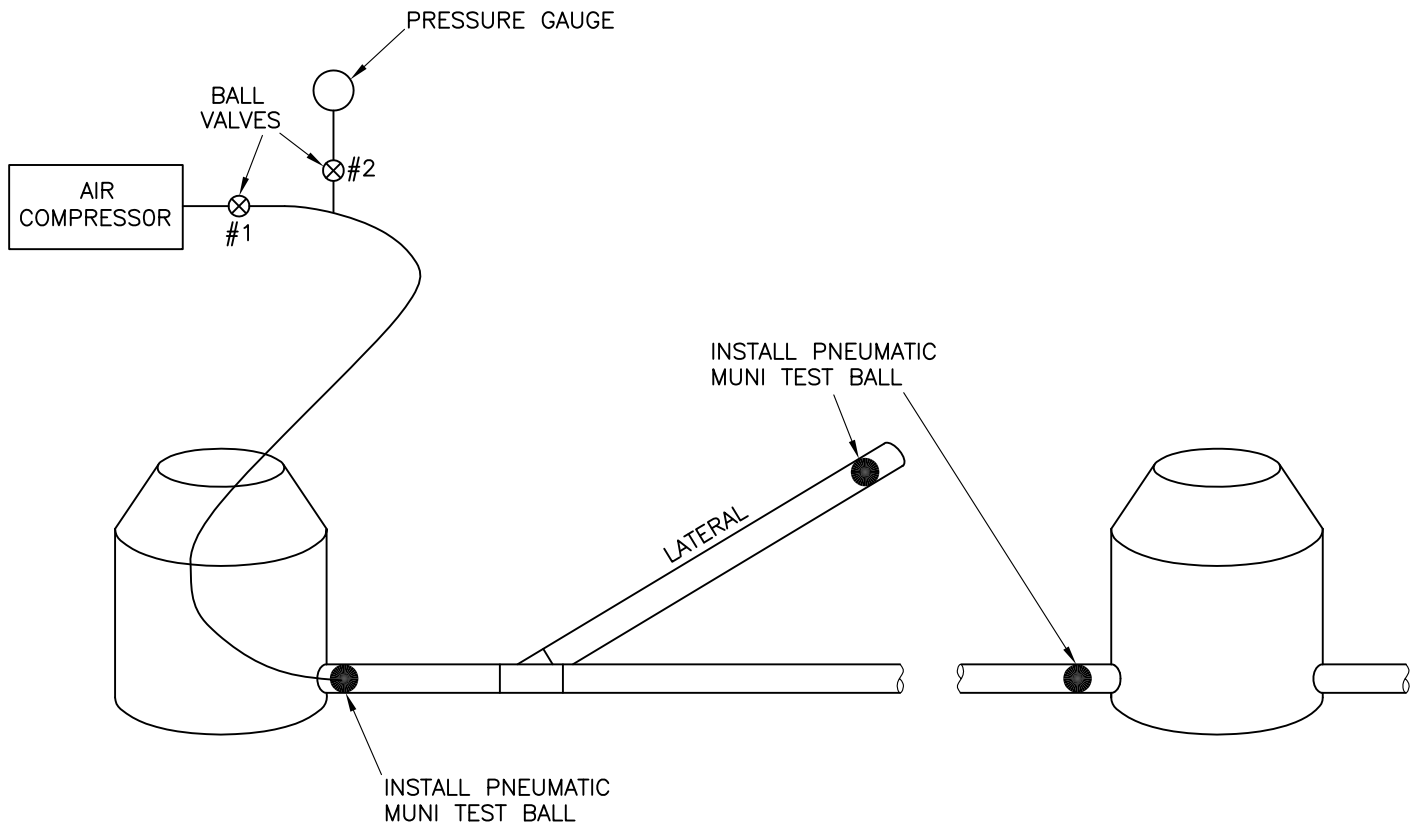
REV. 11-21-07
STD. DWG. NO.
302

WHEN RAISING EXISTING MANHOLE TO MATCH FINISHED GRADE, THE DISTANCE BETWEEN THE RIM AND TOP OF CONE SECTION SHALL NOT EXCEED 12". RAISING THE RIM MUST BE DONE BY ADDING BARRELS OR USING A TALLER CONE SECTION.



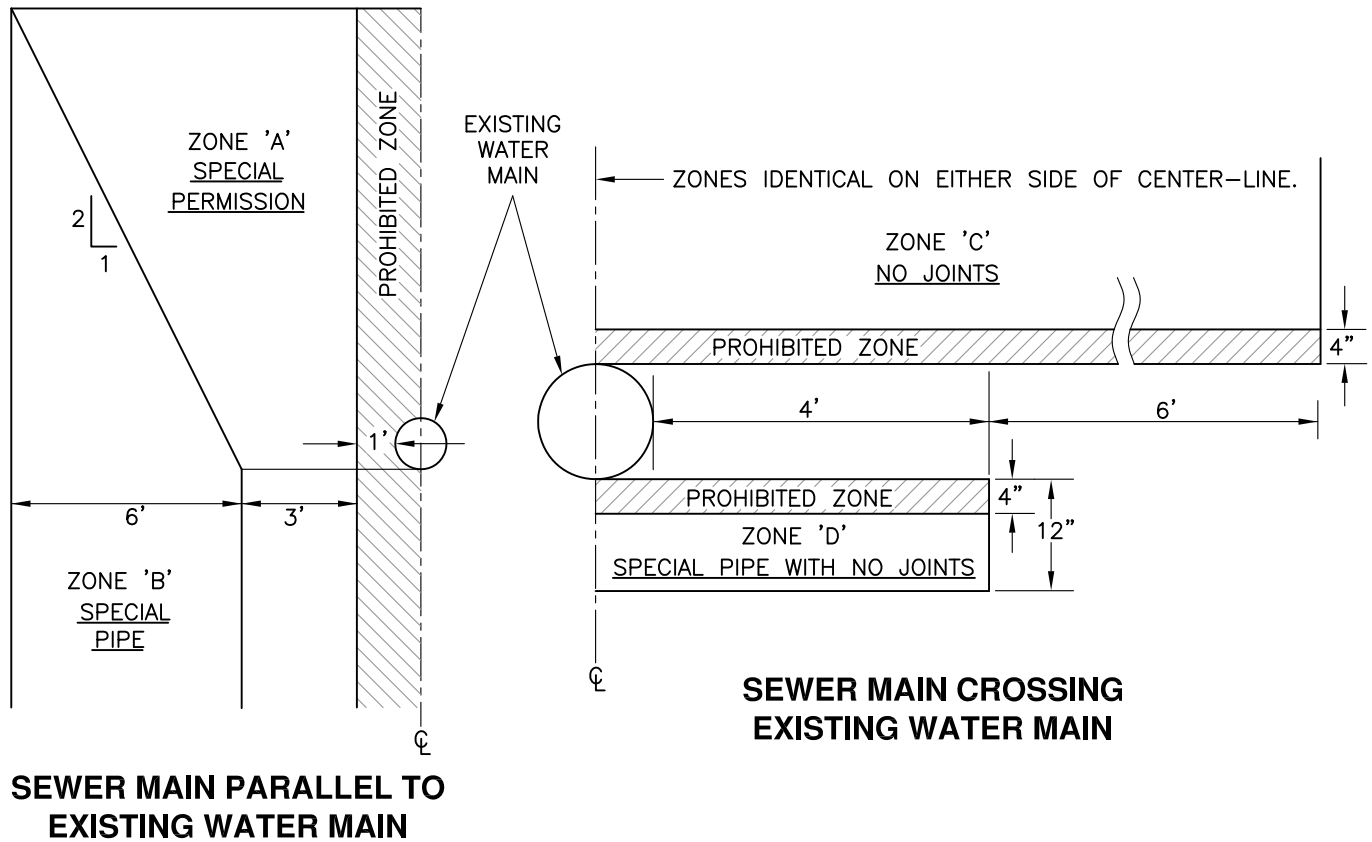
NOTES

- A. NEW CONNECTIONS TO BE BORED 2" LARGER THAN THE PIPE DIAMETER.
- B. NEW CONNECTIONS WILL HAVE A MINIMUM SLOPE OF 2%.
- C. FLOW CHANNEL FROM THE NEW CONNECTION TO THE EXISTING MAIN SHALL BE CHIPPED AWAY AND MORTARED TO A SMOOTH FINISH.
- D. IF TIGHTER ENTRANCE ANGLES ARE REQUIRED DUE TO SITE CONSTRAINTS, USE LONG RADIUS BEND OUTSIDE OF MANHOLE.
- E. CONTRACTOR IS RESPONSIBLE FOR DEBRIS REMOVAL AND PREVENTION OF FLOW BLOCKAGE WHILE UNDER CONSTRUCTION.
- F. CONTRACTOR SHALL COMPLY WITH ALL CONFINED-SPACE REQUIREMENTS PER CAL-OSHA.



NOTES

- A. ALL LINES TO BE BACKFILLED AND COMPACTED.
- B. BALL AND FLUSH TO BE COMPLETED.
- C. PLUG ALL LATERALS AND CLEANOUTS WITH COMPRESSION-TYPE PLUGS.
- D. INSTALL PNEUMATIC PLUGS IN EACH END OF THE MAIN LINE; ONE WILL NEED A MUNI TEST BALL TYPE PLUG SETUP FOR AIR HOSE CONNECTION TO THE TAPPED CENTER HOLE.
- E. PRESSURIZE SEWER LINE BY CLOSING BALL VALVE #2; THIS PROTECTS GAUGE. THEN OPEN VALVE #1; ALTERNATE THESE VALVES TO CHECK PRESSURE IN THE LINE AS IT PRESSURIZES.
- F. LINE MUST PASS PRESSURE TEST IN ACCORDANCE WITH STANDARD T.U.D. PROCEDURES AS OUTLINED IN SPECIFICATONS.



SPECIAL CONSTRUCTION REQUIRED FOR SEWER

ZONE A: SEWER MAIN PARALLEL TO WATER MAIN SHALL NOT BE PERMITTED IN THIS ZONE WITHOUT APPROVAL FROM THE CALIFORNIA STATE DEPARTMENT OF HEALTH SERVICES, SANITARY ENGINEERING BRANCH, AND TUOLUMNE UTILITIES DISTRICT.

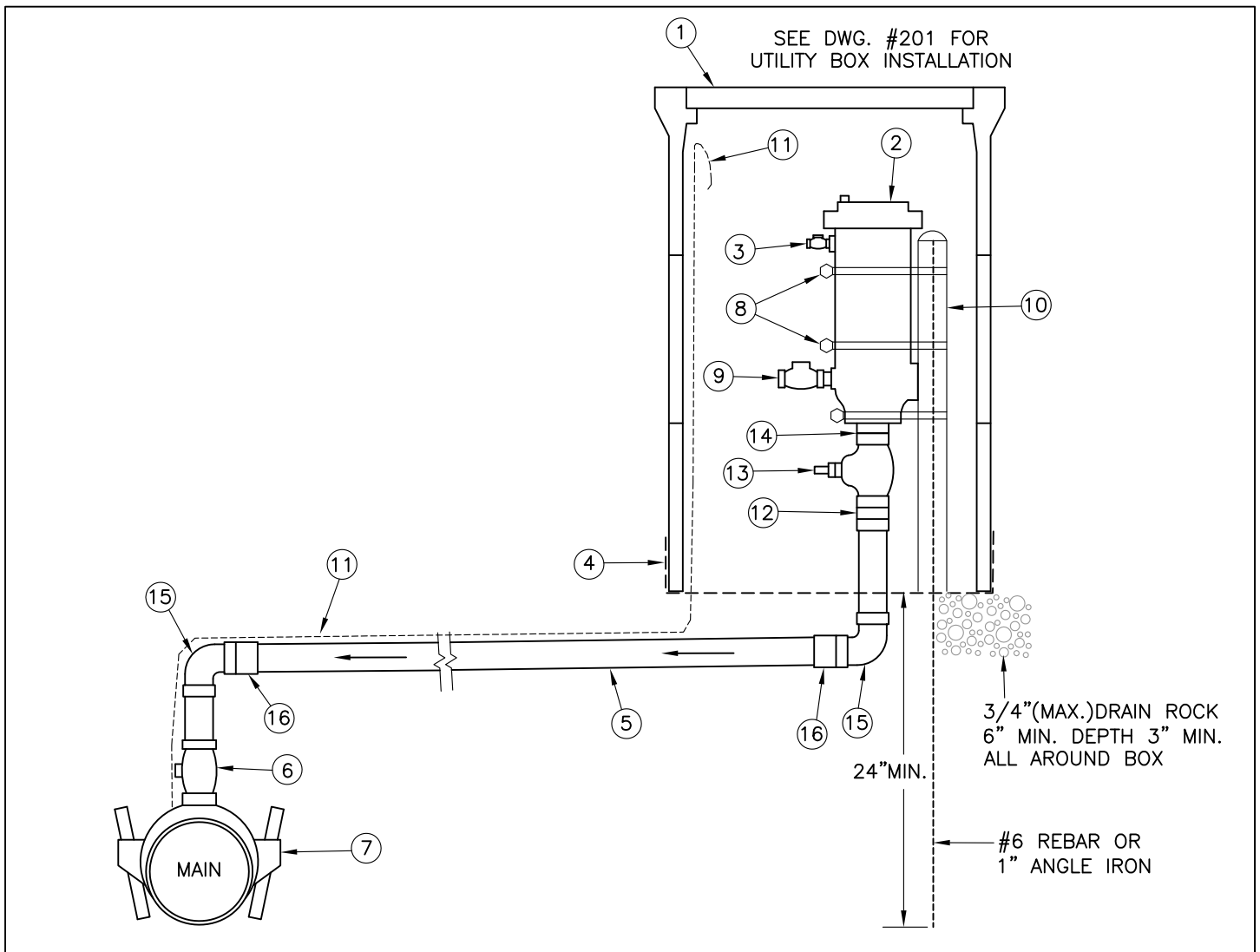
ZONE B: SEWER MAIN PARALLEL TO WATER MAIN SHALL BE CONSTRUCTED OF:
 (1) PVC SEWER PIPE WITH RUBBER RING JOINTS (ASTM D3034, SDR 35 OR EQUAL) OR
 (2) CAST IRON OR DUCTILE IRON PIPE WITH COMPRESSION JOINTS.
 PIPE TYPE SHALL BE CONTINUOUS FROM MANHOLE TO MANHOLE.

ZONE C: SEWER MAIN CROSSING OVER WATER MAIN SHALL BE CONSTRUCTED OF:
 (1) DUCTILE IRON PIPE WITH HOT DIP BITUMASTIC COATING AND MECHANICAL JOINTS, OR
 (2) A CONTINUOUS SECTION OF C900, CLASS 200 PVC PIPE (DR14) CENTERED OVER PIPE BEING CROSSED, OR
 (3) SDR35 PIPE IN A CONTINUOUS C900, CLASS 150 OR DUCTILE IRON SLEEVE EXTENDING 10 FT. EACH SIDE OF THE WATER PIPE
 PIPE TYPE SHALL BE CONTINUOUS FROM MANHOLE TO MANHOLE.

ZONE D: SEWER MAIN CROSSING UNDER WATER MAIN SHALL BE CONSTRUCTED OF ZONE 'C' MATERIALS.

SEWER FORCE-MAIN INSTALLATION NOTES

- A. PARALLEL INSTALLATION: SEWER FORCE MAIN SHALL NOT BE INSTALLED WITHIN 10 FT. HORIZONTALLY OF WATER MAIN.
- B. CROSSING UNDER WATER MAIN: SEWER FORCE MAIN MUST BE AS CLOSE TO PERPENDICULAR AS PRACTICAL AND AT LEAST ONE FOOT BELOW WATER MAIN.
- C. CROSSING UNDER WATER MAIN IN ZONE 'D': SEWER FORCE MAIN WITHIN 8 FT. HORIZONTALLY OF WATER MAIN SHALL BE ENCLOSED IN A CONTINUOUS C900, CLASS 150 OR DUCTILE IRON SLEEVE.



NOTES

- A. 2" POLYETHYLENE SERVICE TUBING MUST HAVE A POSITIVE, CONTINUOUS RISE FROM THE SEWER MAIN TO THE AIR/VAC VALVE.
- B. SEWER AIR/VAC VALVE TO BE LOCATED OUT OF TRAFFIC AREAS.

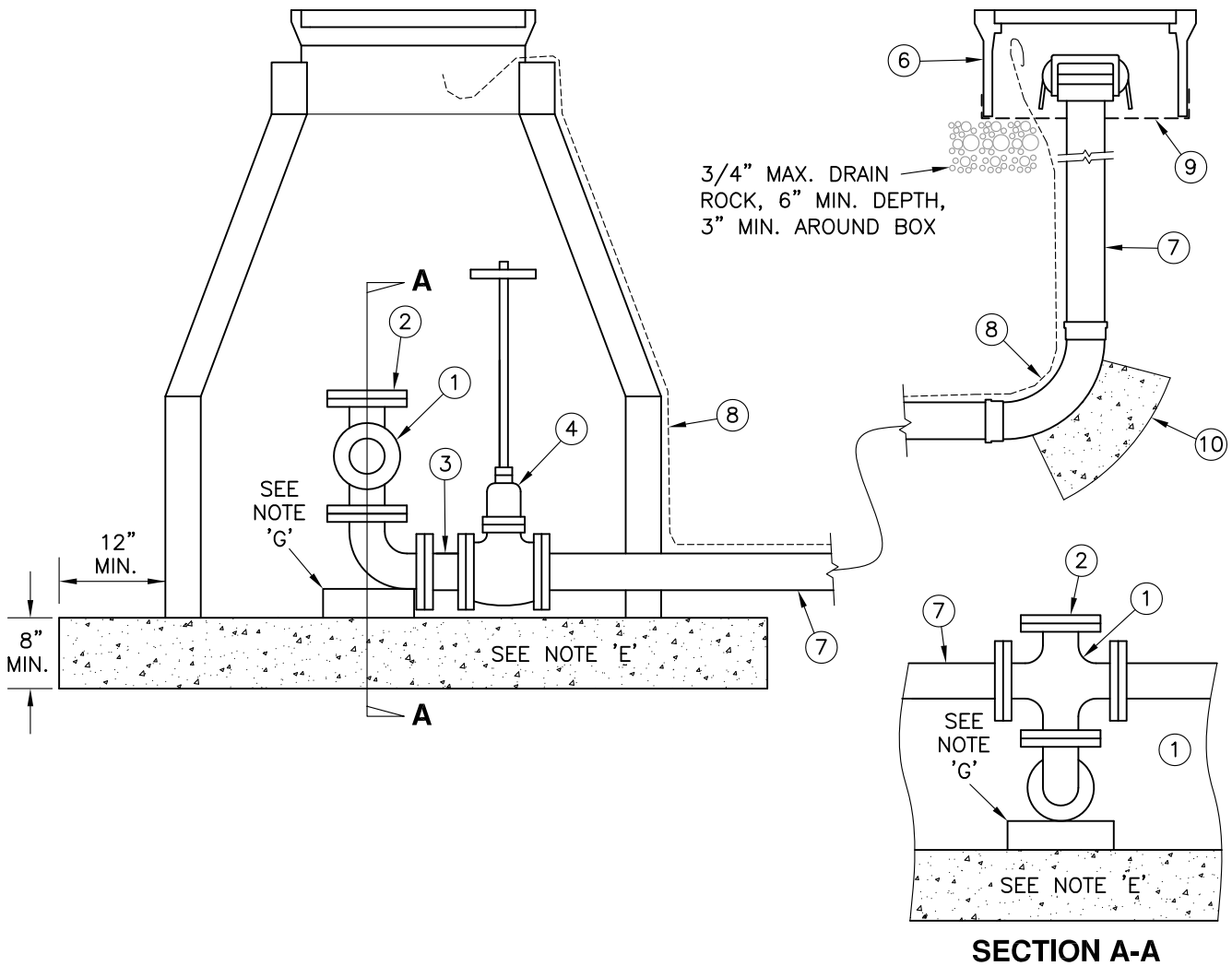
ITEM	QTY	DESCRIPTION	REMARKS
①	1	UTILITY BOX AND EXTENSIONS AS REQUIRED	CHRISTY B24 W/B24-61D LID, B24 EXTENSIONS
②	1	SEWER AIR/VAC VALVE	APCO #401 OR APPROVED EQUAL
③	2	1/2" BALL VALVE	BRONZE BODY
④	1	GALV. STEEL WIRE	WIRE DIA.=0.105", COVER ACCESS HOLES
⑤	2	2" 200 PSI POLYETHYLENE SERVICE TUBING	C.T.S. WESFLEX OR EQUAL, MAINTAIN POSITIVE SLOPE
⑥	1	2" X P.E. C.T.S. CORP. STOP	FORD FB1000
⑦	1	2" SADDLE	FORD FS202, STAINLESS STEEL STRAP
⑧	3	CLAMPS	STAINLESS STEEL
⑨	1	1" BALL VALVE	BRONZE BODY
⑩	1	2" WITH CAP	GALVANIZED
⑪	1	#12 AWG INSULATED LOCATOR WIRE	SINGLE STRAND COPPER, <u>UF LISTED</u> , SEE DWG. #102
⑫	1	2" UNION	BRONZE, SCREWED TO AIR/VAC VALVE & TUBING
⑬	1	2" BALL VALVE	BRONZE BODY
⑭	1	2" NIPPLE	BRASS
⑮	2	2" 90° STREET ELBOW	BRASS FIPxMIP
⑯	2	MIPxCTS ADAPTER	

TUOLUMNE UTILITIES DISTRICT
SEWER FORCE MAIN AIR-VACUUM VALVE

REV. 11-21-07
STD. DWG. NO.
306

SEE DWG. #301 FOR STANDARD MANHOLE CONSTRUCTION

SEE DWG. #201 FOR UTILITY BOX INSTALLATION



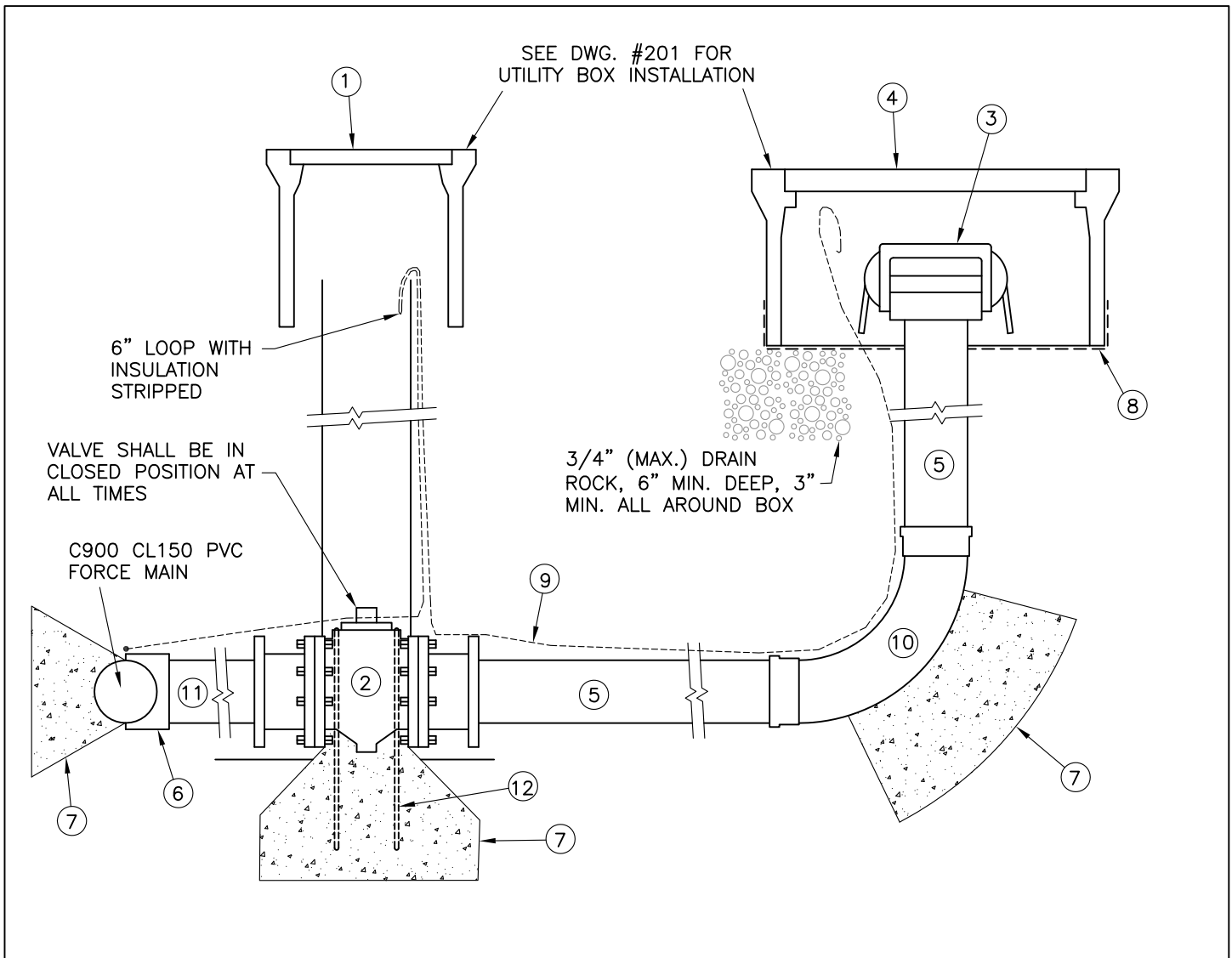
NOTES

- A. BLOWOFF VAULT WILL BE LOCATED OUTSIDE TRAFFIC AREAS WHENEVER POSSIBLE.
- B. FOR SPECIFIC MANHOLE REQUIREMENTS SEE STANDARD MANHOLE DETAIL #303.
- C. EXTERIOR OF MANHOLE SURFACE WILL BE COATED WITH BITUMASTIC SEALANT OR APPROVED EQUAL.
- D. MANHOLE SLAB BASE SHALL BE 2500 PSI (MIN.) CONCRETE
- E. ALL PIPES AND FITTINGS WITHIN MANHOLE WALLS SHALL BE PRIMED AND COATED WITH ENAMEL OR WRAPPED IN 10 MIL PVC TAPE.
- F. TEE SUPPORT SHALL BE A 12" DIAMETER PIPE FILLED WITH 2500 PSI (MIN.) CONCRETE OR STEEL SUPPORT APPROVED BY DISTRICT.
- G. FITTINGS, JOINTS, BOLTS AND NUTS ARE TO BE COVERED WITH PLASTIC SHEETING (4 MIL THICK MIN.) PRIOR TO PLACEMENT OF CONCRETE.

(1)	1	CROSS & 90° ELBOW, SIZE PER MAIN LINE	4" TAPPED AND THREADED
(2)	1	BLIND FLANGE	CLASS 125
(3)	1	DUCTILE IRON UNION	CORROSION PROTECTIVE COATING
(4)	1	4" RESILENT WEDGE VALVE, STEM 3 FT. FROM LID	AMERICAN, CLAY OR APPROVED EQUAL
(5)	1	FPD PLUG W/ DUST CAP	CAMLOCK OR APPROVED EQUAL
(6)	1	CONCRETE UTILITY BOX	CHRISTY B16 W/B1661D LID OR APPROVED EQUAL
(7)	1	4" DUCTILE IRON PIPE	CEMENT MORTAR LINING
(8)	1	#12 AWG INSULATED LOCATOR WIRE	SINGLE STRAND COPPER, <u>UF LISTED</u> , SEE DWG. #102
(9)	1	GALV. STEEL WIRE	WIRE DIA.=0.105", COVER ACCESS HOLES
(10)		THRUST BLOCK	2500 PSI CONC. MIN., SEE DETAIL #202

TUOLUMNE UTILITIES DISTRICT
SEWER FORCE MAIN LOW-POINT VAULT

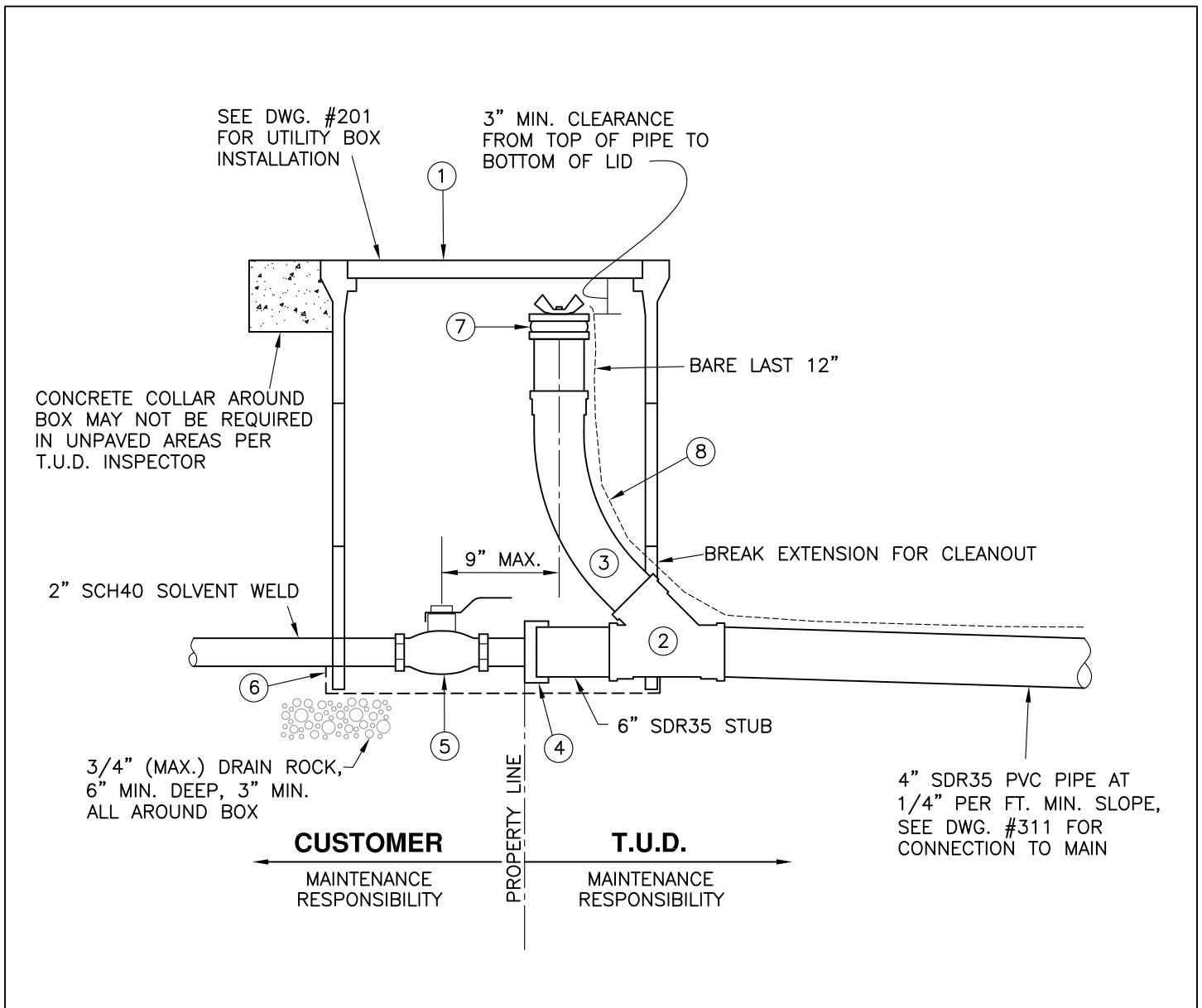
REV. 11-21-07
 STD. DWG. NO.
307



NOTES

- A. STEM EXTENSION REQUIRED FOR ALL VALVES WHERE DISTANCE FROM FINISH GRADE TO VALVE NUT IS 4 FT. OR GREATER, SEE DETAIL #201.
- B. MAXIMUM OPERATING PRESSURE IS 150 PSI WORKING PRESSURE.
- C. COAT NON-BRASS BURIED EXPOSED THREADS WITH KOPPERS BITUMASTIC NO. 5 OR TAPE WITH 10 MIL. PVC TAPE, 3 WRAPS MIN.
- D. PVC JOINT ADHESIVE IS "WELD-ON" JM 7-21 BLUE WITH JMP 70 PRIMER, OR T.U.D. APPROVED EQUAL.
- E. FITTINGS, JOINTS, BOLTS AND NUTS ARE TO BE COVERED FIRST WITH KOPPERS BITUMASTIC NO.5 AND THEN PLASTIC SHEETING (4 MIL. THICK MIN.) PRIOR TO PLACEMENT OF CONCRETE.

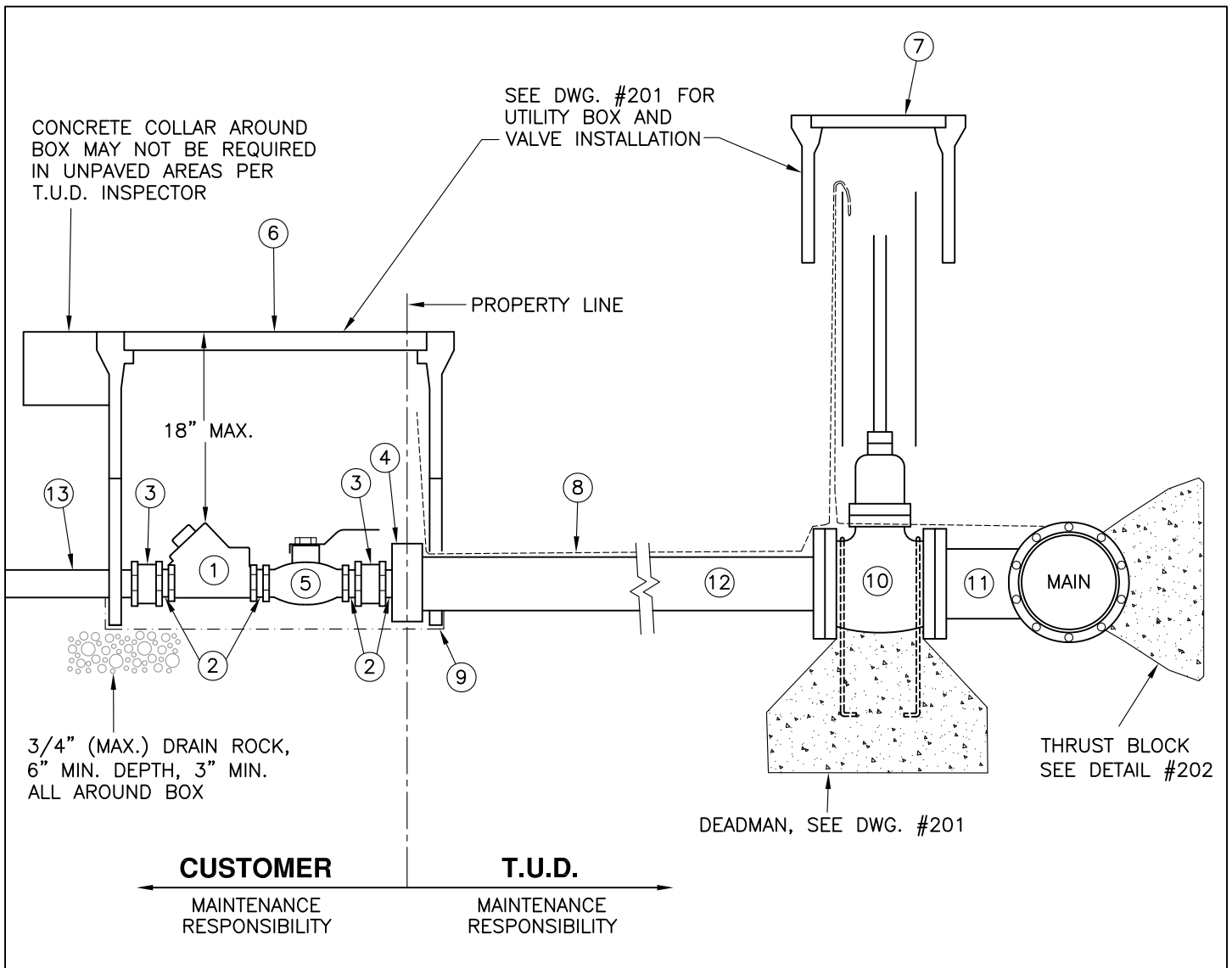
ITEM	QTY	DESCRIPTION	REMARKS
①	1	TRAFFIC BOX WITH LID	CHRISTY G5 BOX W/G5C LID (MARKED "SEWER")
②	1	4" FULL PORT ECCENTRIC PLUG VALVE	MILLCENTRIC OR EQUAL, 2" OPERATING NUT (MJxMJ)
③	1	FPD PLUG WITH DUST CAP	CAMLOCK OR APPROVED EQUAL
④		CONCRETE VALVE BOX, LID MARKED "SEWER"	CHRISTY B16 W/B1661D LID OR APPROVED EQUAL
⑤	3	4" DIA. PIPE	SCH40 PVC
⑥	1	4"x4"x4" C.I. WYE	MJ x MJ x MJ
⑦		THRUST BLOCK	2500 PSI CONC. MIN., SEE DETAIL #202
⑧	1	GALV. STEEL WIRE	WIRE DIA.=0.105", COVER ACCESS HOLES
⑨		#12 AWG INSULATED LOCATOR WIRE	SINGLE STRAND COPPER, <u>UF LISTED</u> , SEE DWG. #102
⑩	1	4" ELBOW, 90°	SCH 40 PVC LONG SWEEP
⑪	1	C900 CL150 PVC PIPE	LENGTH AS REQUIRED
⑫	2	#4 REBAR ANCHOR	GRADE 60, SEE DETAIL #201



NOTES

- A. T.U.D. IS RESPONSIBLE FOR MAINTAINING THE SEWER LATERAL TO THE CLEANOUT.
- B. PRIVATE LIFT STATIONS, PUMPS, SUMPS, TANKS, ETC. WILL BE T.U.D. APPROVED AND INSPECTED.
- C. SEE DETAIL #203 FOR PIPE BEDDING MATERIAL.
- D. LOCATE CLEANOUTS OUTSIDE TRAFFIC AREAS.
- E. ALL FITTINGS SHALL BE SDR35 PVC PIPE, RING-TITE OR APPROVED EQUAL.
- F. PVC JOINT ADHESIVE IS "WELD-ON" JM7-21 BLUE WITH JMP PRIMER OR T.U.D. APPROVED EQUAL.
- G. ALL FITTINGS TO HAVE RATING OF 150 PSI WORKING PRESSURE AT 73°F.

ITEM	QTY	DESCRIPTION	REMARKS
①	1	UTILITY BOX AND LID, USE EXTENSION(S)	CHRISTY B30 BOX W/61D LID
②	2	WYE	SDR35, RING-TITE OR APPROVED EQUAL
③	2	STANDARD 45° OR LONG-RADIUS 45° ELBOW	SDR35, RING-TITE OR APPROVED EQUAL
④	1	2" X 4" ADAPTER	PVC
⑤	1	2" BALL VALVE	BRONZE, 150 LB
⑥	1	1/2" GALV. STEEL WIRE MESH	WIRE DIA.=0.105", COVER ACCESS HOLES
⑦	1	EXPANSION PLUG WITH LIP	PASCO HAND-TIGHT OR APPROVED EQUAL
⑧	1	#12 AWG INSULATED LOCATOR WIRE	SINGLE STRAND COPPER, <u>UF LISTED</u> , SEE DWG. #102



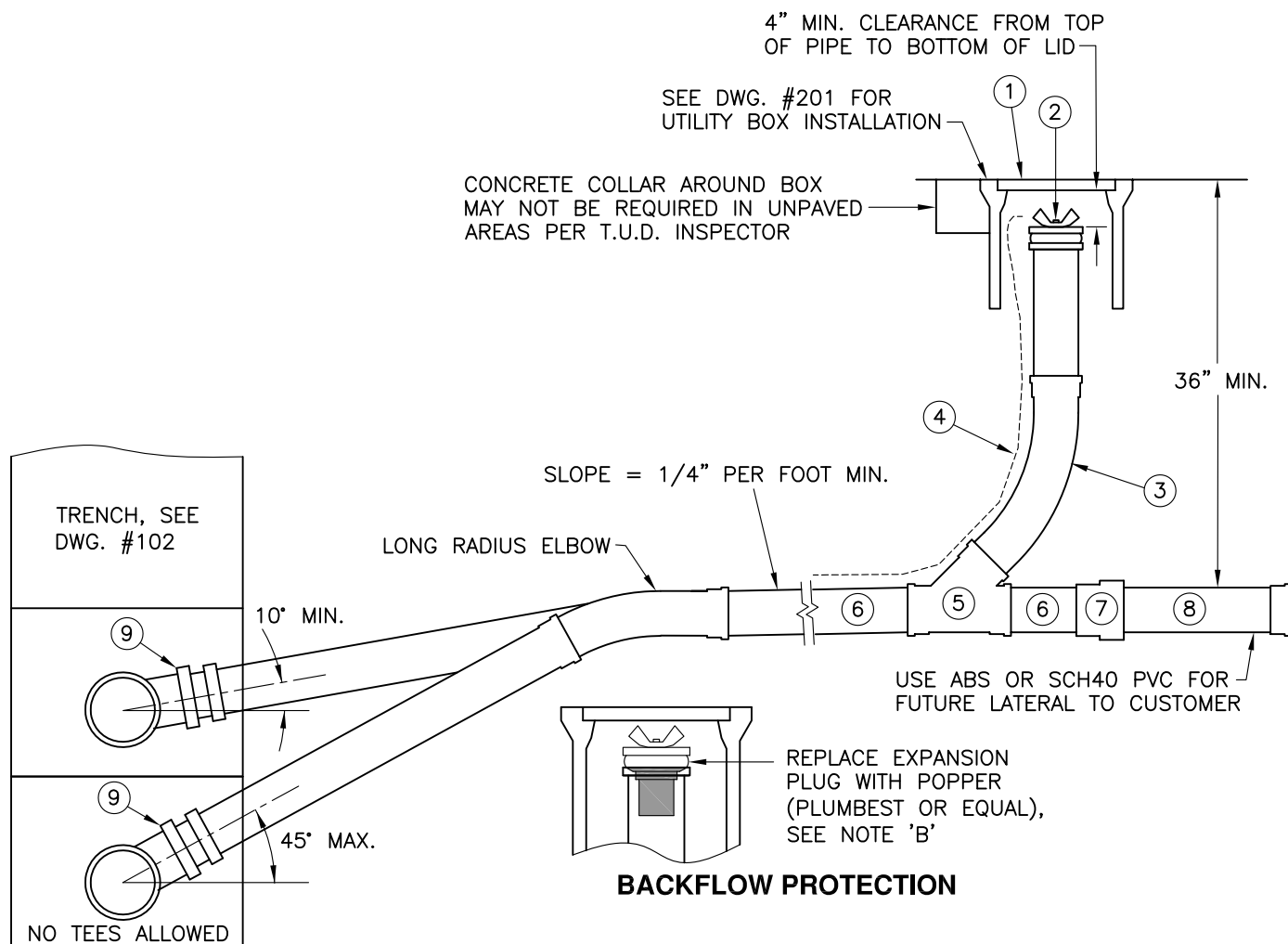
NOTES

- A. PRIVATE LIFT STATIONS, PUMPS, SUMPS, TANKS ETC. WILL BE T.U.D. APPROVED AND INSPECTED.
- B. SEE DWG. #203 FOR PIPE BEDDING MATERIAL.
- C. PVC JOINT ADHESIVE IS "WELD-ON" JM7-21 BLUE WITH JMP PRIMER OR T.U.D. APPROVED EQUAL.
- D. ALL FITTINGS TO HAVE RATING OF 150 PSI WORKING PRESSURE AT 73°F.

ITEM	QTY	DESCRIPTION	REMARKS
①	1	2" SWING CHECK VALVE	150 LB, BRONZE
②	4	CLOSE NIPPLE	P.V.C. OR BRASS
③	2	UNION	P.V.C. OR BRASS
④	2	MJ CAP, TAPPED 2"	USE GRIP RINGS
⑤	1	2" BALL VALVE	BRONZE, 150 LB
⑥	1	UTILITY BOX AND LID, USE EXTENSION(S)	CHRISTY B30 BOX W/61D LID
⑦		TRAFFIC VALVE BOX WITH LID MARKED "WATER"	CHRISTY G5 W/G5C LID OR APPROVED EQUAL
⑧	1	#12 AWG INSULATED LOCATOR WIRE	SINGLE STRAND COPPER, <u>UF LISTED</u> , SEE DWG. #102
⑨	1	1-1/4" HARDWARE CLOTH (GALV.)	MUST COVER ACCESS HOLES
⑩	1	4" RESILIENT WEDGE GATE VALVE, 2" SQUARE NUT	CLASS 150, NONRISING STEM
⑪	1	STAINLESS STEEL TAPPING SLEEVE	FOR HOT TAP ONLY, SEE DWG. #209
⑫		4" C900 PIPE TO MAIN,	WRAP PIPE WITH "T.U.D. SEWER TAPE"
⑬		2" SCH40 SOLVENT WELD	

**TUOLUMNE UTILITIES DISTRICT
PRIVATE PUMP SYSTEM TO FORCE MAIN
OR PRESSURIZED INTERCEPTOR**

REV. 11-21-07
STD. DWG. NO.
310

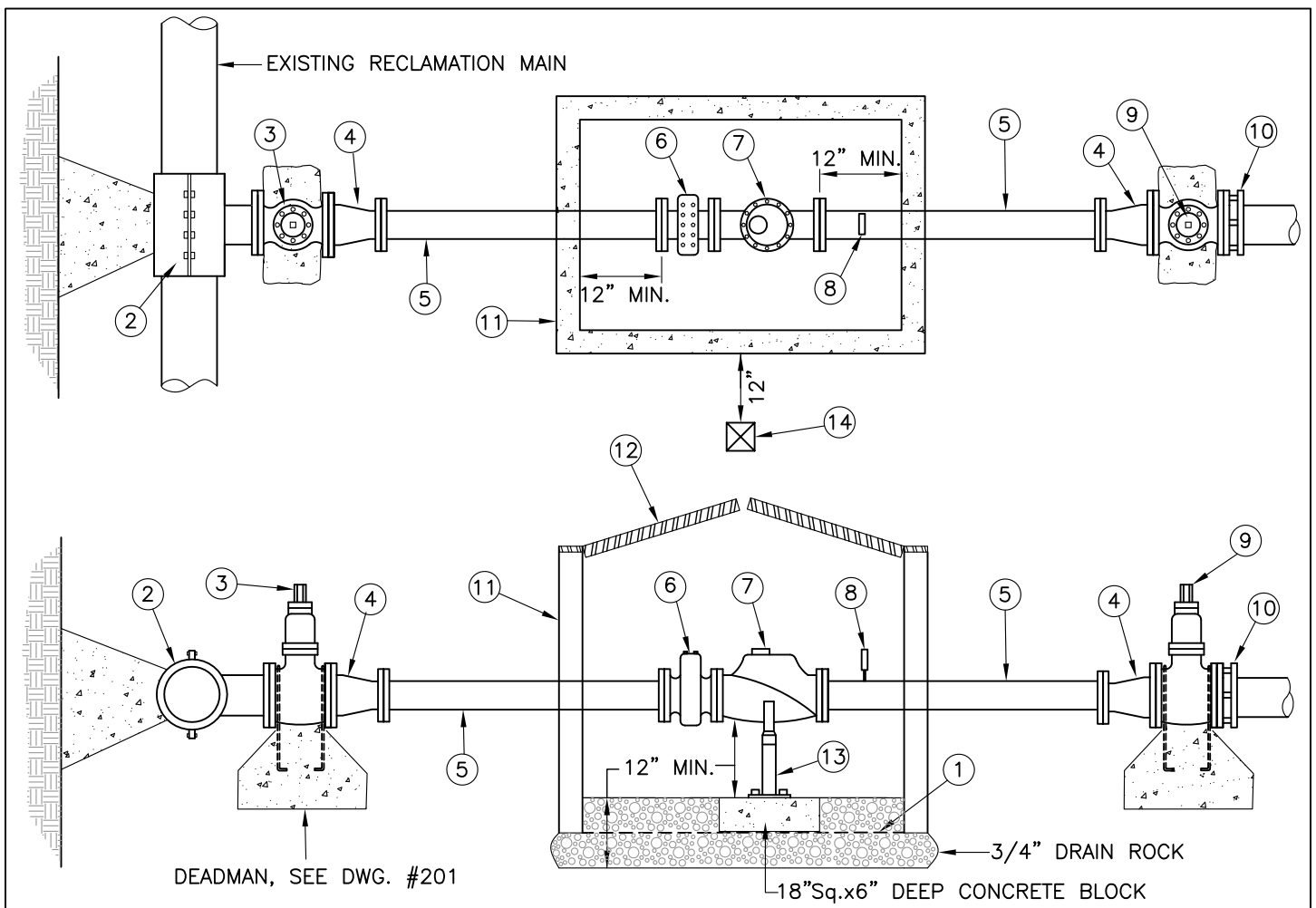


FLUSHING BRANCH SHALL BE END-OF-LINE CLEANOUT, SAME SIZE AS MAIN, WITH LONG-RADIUS 90° ELBOW

NOTES

- A. LOCATE CLEANOUTS OUTSIDE TRAFFIC AREAS IF POSSIBLE.
- B. BACKFLOW PREVENTION IS REQUIRED FOR CLEANOUT AT PROPERTY, RIGHT-OF-WAY OR EASEMENT LINE.
- C. PLACE 1 CU. FT. MIN. OF CONCRETE OR 2 CU. FT. OF WELL-COMPACTED BEDDING MATERIAL UNDER THE ENTIRE LENGTH OF THE WYE BRANCH, FITTING OR ANY UNSUPPORTED PIPE. WHEN BEDDING MATERIAL IS USED, PLACE ADDITIONAL MATERIAL TO TOP OF BEND FOR THE FULL WIDTH OF THE TRENCH.
- D. "CARSON" PLASTIC BOX CAN BE USED IN PLANTER AREAS WITH PRIOR T.U.D. APPROVAL.
- E. A 4-INCH LATERAL IS ACCEPTABLE FOR A DOUBLE SERVICE.

ITEM	QTY	DESCRIPTION	REMARKS
①	1	UTILITY BOX WITH LID MARKED "SEWER"	CHRISTY G5BOX W/G5CLID, SEE NOTE 'D'
②	1	EXPANSION PLUG	PASCO HAND-TIGHT OR APPROVED EQUAL, SEE NOTE 'C'
③	1	LONG RADIUS 45°, BANANA SWEEP	SDR35 PVC PIPE
④		#12 AWG INSULATED LOCATOR WIRE	SINGLE STRAND COPPER, <u>UF LISTED</u> , SEE DWG. #102
⑤	1	WYE	SDR35 PVC PIPE
⑥		SINGLE SERVICE: 4" MIN. DOUBLE SERVICE: 4" MIN. MAIN-LINE CLEANOUT: SAME SIZE AS MAIN	SDR35 PVC PIPE
⑦	1	4"x4" SWRxDWV REDUCER	PTI #P657, USE ABS TO SDR GLUE
⑧	1	2 FT. STUB WITH GLUED CAP	ABS DWV
⑨	1	PVC OR SADDLE WYE, DFW/HPI, FLEXIBLE RUBBER, REQUIRED IF EXISTING WYE NOT FOUND	



NOTES

- A. UNLESS OTHERWISE APPROVED, ALL CONNECTIONS TO EXISTING T.U.D. MAINS SHALL BE BY "HOT-TAP" WITH APPROVED TAPPING SLEEVE. TUD CAN ONLY HOT-TAP 4-INCH AND 6-INCH SEWERLINES.
- B. BOTH 4-INCH AND 6-INCH SERVICES SHALL USE 4-INCH STRAINERS AND METERS.
- C. VALVE IS TO REMAIN CLOSED FOR A MINIMUM OF 5 DAYS TO ALLOW THE CONCRETE THRUST BLOCK TO CURE.
- D. ALL FITTINGS INSTALLED ON EXISTING RECLAMATION MAIN SHALL BE 3 FT. MIN. FROM JOINTS, FITTINGS, OR TAPS.
- E. COAT BURIED NUTS & BOLTS WITH KOPPERS BITUMASTIC #50 OR TAPE WITH 10 MILS. PVC TAPE (3 WRAPS MIN.)
- F. BURIED FITTINGS, JOINTS, BOLTS AND NUTS ARE TO BE COVERED WITH PLASTIC SHEETING (4 MIL. THICK MIN.) PRIOR TO PLACEMENT OF CONCRETE. ALL BOLTS SHALL BE ACCESSIBLE AFTER KICKERS ARE PLACED.
- G. ALL EXPOSED PIPING SHALL BE PAINTED PANTONE PURPLE.

ITEM	QTY	DESCRIPTION	REMARKS
①	1	1/2" GALV. STEEL WIRE MESH	WIRE DIA.=0.105"
②	1	STAINLESS STEEL TAPPING SLEEVE	ROMAC "SST", ROCKWELL 622, FORD "FAST" OR APPROVED EQUAL
③	1	RESILIENT WEDGE VALVE	FLxFL W/2" OPERATING NUT, SEE DETAIL #201, SIZE TO MATCH SERVICE
④	2	4"x6" REDUCER	FLxFL (ONLY USE WITH 6" SERVICES) (SEE NOTE C.)
⑤	2	4" D.I.P. SPOOL	FLxFL (48" LONG)
⑥	1	4" METER STRAINER	FLxFL (NEPTUNE OR APPROVED EQUAL)
⑦	1	4" TURBINE METER	FLxFL (NEPTUNE OR APPROVED EQUAL)
⑧	1	PRESSURE GAUGE	W/ 1/4" TAP (PRESSURE RANGE PER T.U.D.)
⑨	1	RESILIENT WEDGE VALVE	FLxMJ W/2" OPERATING NUT, SEE DETAIL #201, SIZE TO MATCH SERVICE
⑩	1	MECHANICAL JOINT W/ GRIP RINGS	OR APPROVED EQUAL
⑪	1	PRECAST 3'x5' VAULT	CHRISTY R17 PIT OR APPROVED EQUAL
⑫	1	STEEL HINGED TORSION-ASSIST LID	TRAFFIC-RATED CHRISTY R27-52HT
⑬	1	ADJUSTABLE PIPE SUPPORT	SEE DETAIL #214
⑭	1	4"x 4" POST	PRESSURE-TREATED, 4 FT. HIGH, PAINT PURPLE