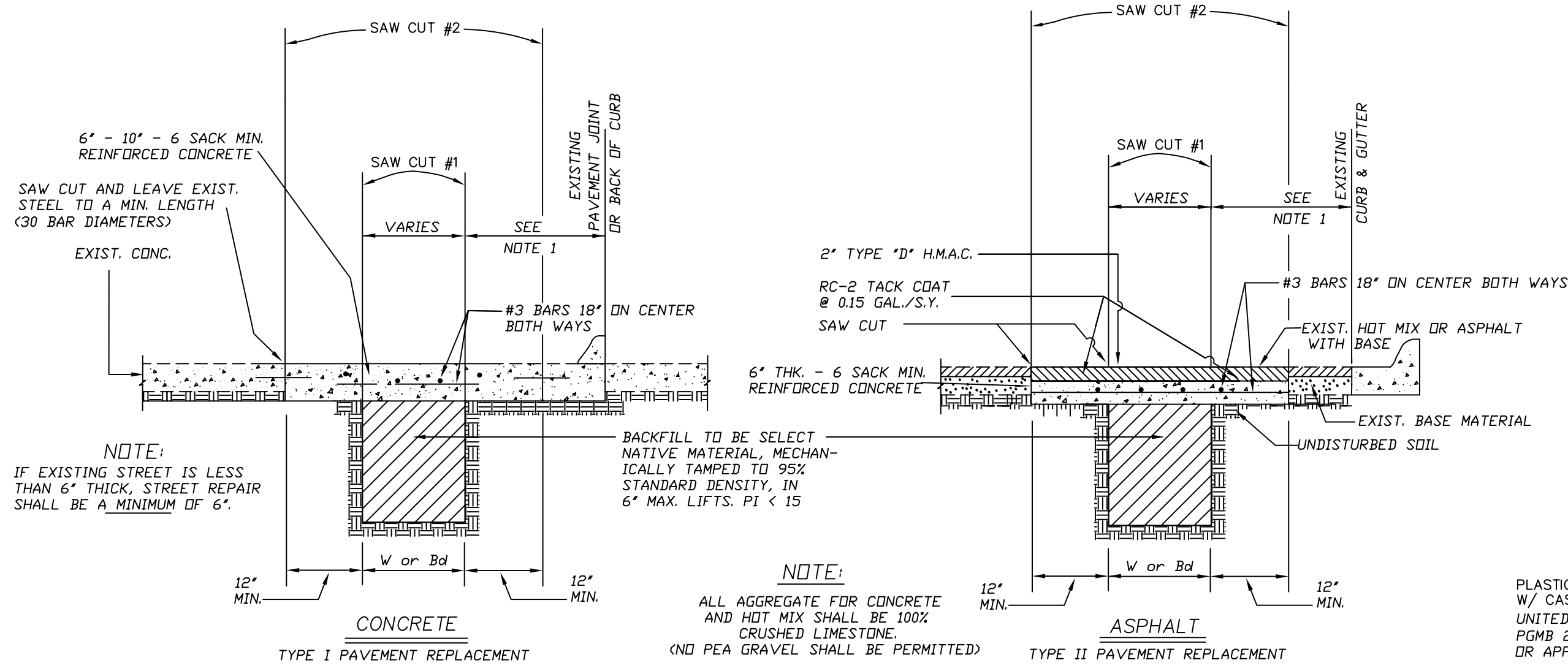


SAW CUT #1 TO BE MADE PRIOR TO INSTALLATION OF PIPE;
SAW CUT #2 TO BE MADE AFTER PIPE INSTALLATION, TESTING &
TRENCH BACK FILL COMPLETED & APPROVED. PAVEMENT CUTS
ARE TO BE FULL DEPTH & PARALLEL WITH PROJECT ALIGNMENT.
CUTS ARE TO BE MADE WITH POWER DRIVEN WALK-BEHIND SAW,
MANUFACTURED FOR PURPOSE OF SAWING PAVEMENT. EDGES OF
PAVEMENT WHICH ARE DAMAGE SUBSEQUENT TO SAW CUT #2
SHALL AGAIN BE SAW CUT TO NEAT STRAIGHT LINES TO REMOVE
DAMAGE (SUCH SAW CUTS LINES SHALL BE PARALLEL TO
ORIGINAL SAW CUT).



PAVEMENT REPLACEMENT DETAILS

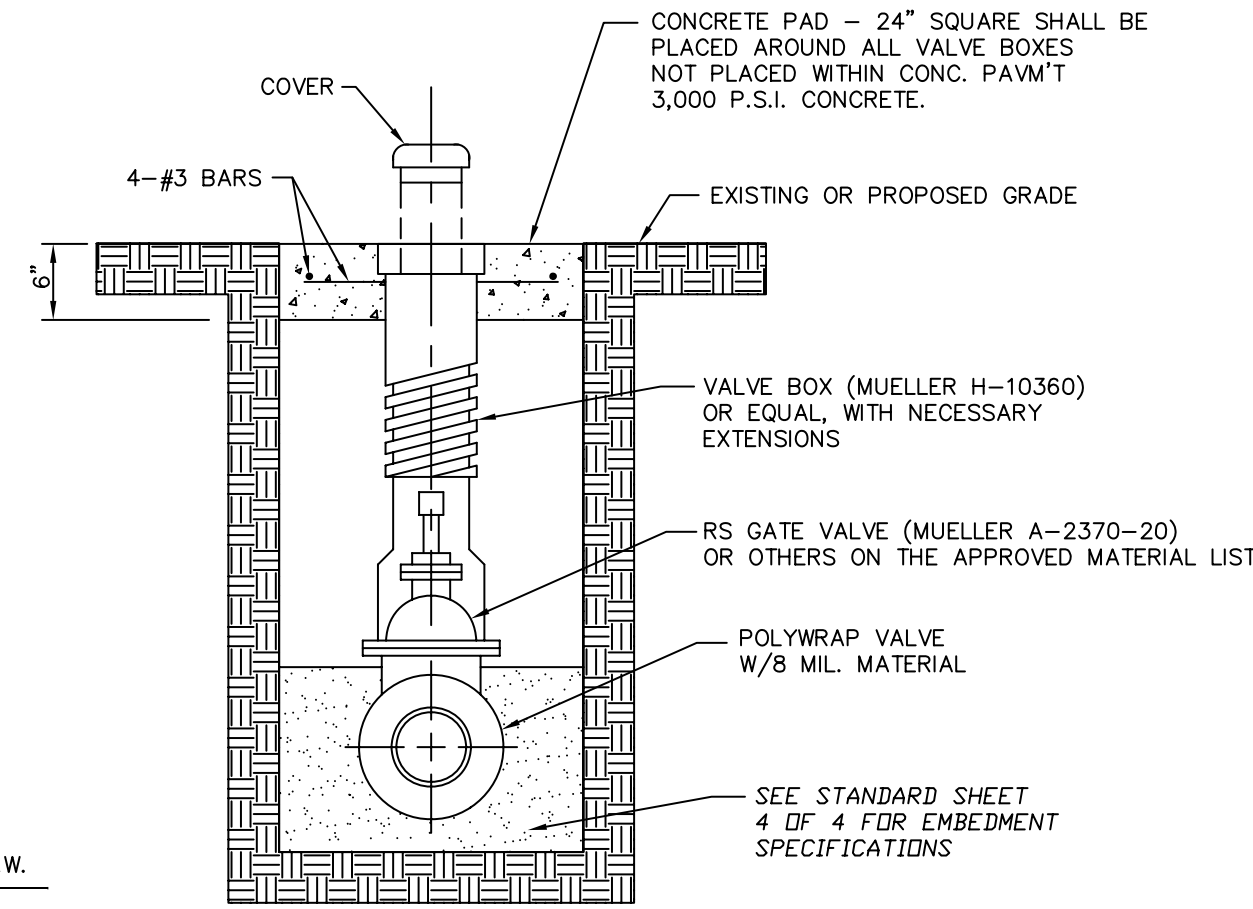
NOT TO SCALE

(FOR ALL STREET CUTS-WATER, SANSEWER AND STORM SEWER)

NOTE 1: IF DISTANCE BETWEEN PAVEMENT REPLACEMENT JOINT &
BACK OF CURB OR EXISTING PAVEMENT JOINT IS LESS THAN
3 FOOT, LIMITS OF PAVEMENT SHALL BE TO BACK OF CURB
OR EXISTING PAVEMENT JOINT.

SERVICE LOCATION FOR SINGLE FAMILY LOTS

NOT TO SCALE

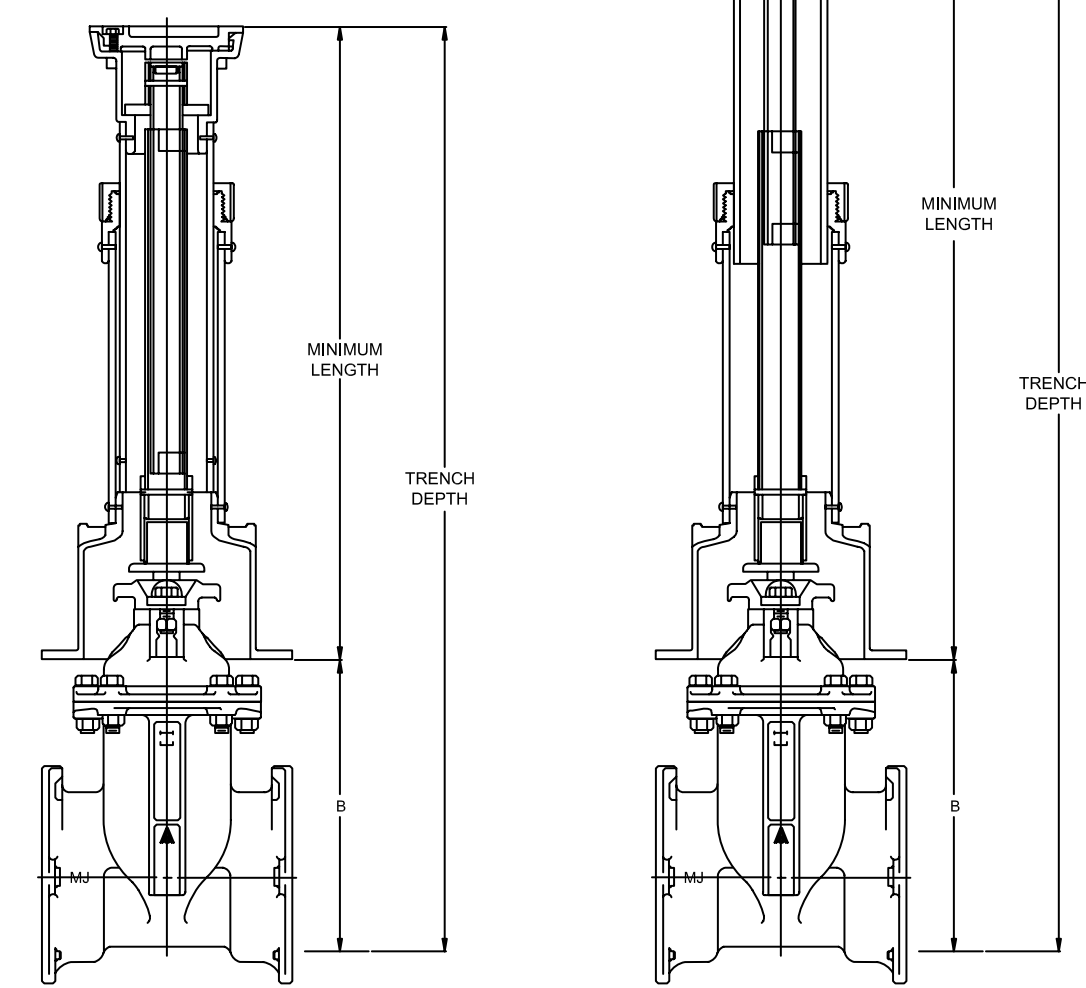


TYPICAL VALVE SETTING & BOX FOR DEPTHS LESS THAN 4 FOOT

NOT TO SCALE

TRENCH DEPTH AND MODEL NUMBER		4'-0"	4'-6"	5'-0"	5'-6"	6'-0"	6'-6"	7'-0"	7'-6"	8'-0"	8'-6"	9'-0"	9'-6"	10'-0"	10'-6"	11'-0"	11'-6"	12'-0"	12'-6"
VALVE SIZE	MODEL NUMBER	4"	5"	6"	8"	10"	12"	14"	16"	18"	20"	24"	30"	36"	42"	48"	54"	60"	72"

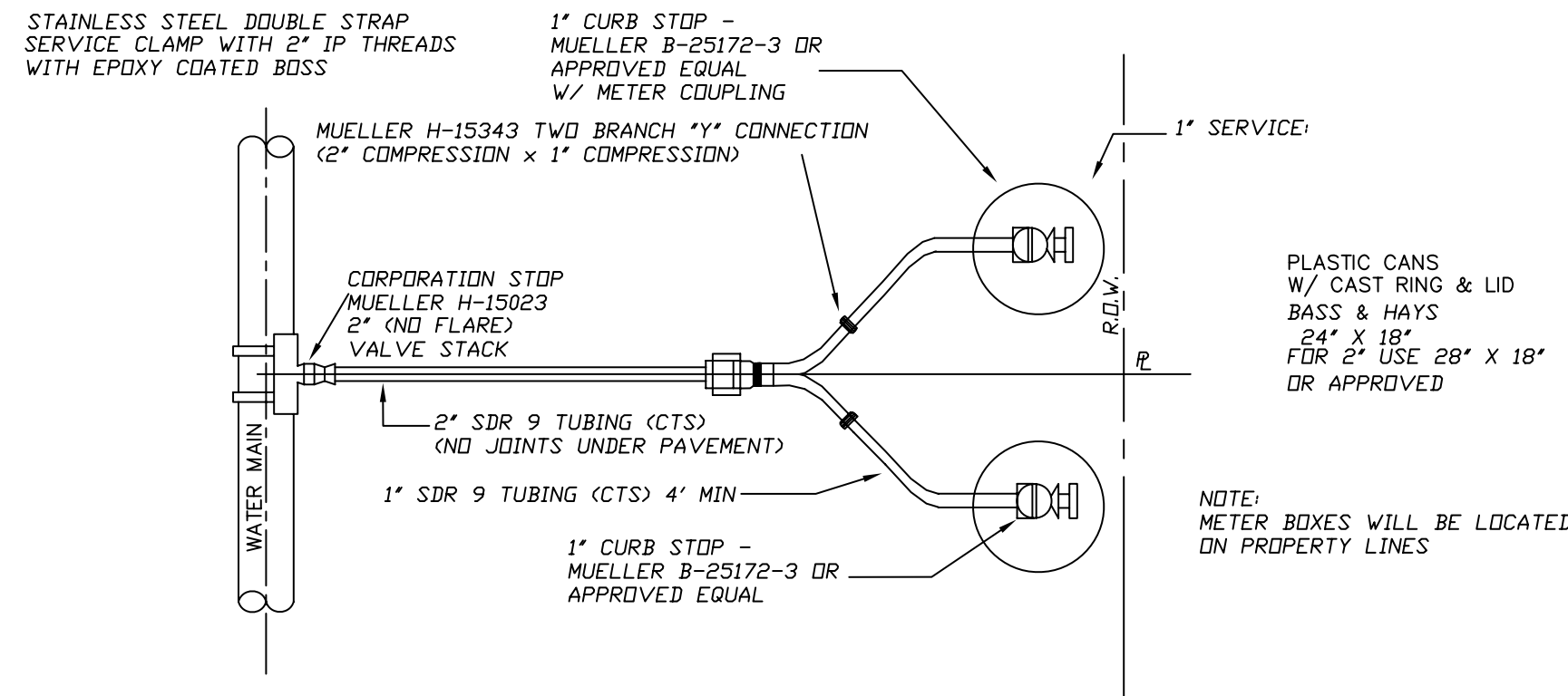
VALVE SIZE	DIMENSION "B"	MODEL NUMBER	LENGTH MIN.	LENGTH MAX.	ASSEMBLY WEIGHT
4"	8.25	#1	18.25	20.25	15#
6"	13.50	#2	22.25	24.25	18#
8"	18.25	#3	26.75	28.75	21#
10"	23.00	#4	31.75	33.75	25#
12"	27.50	#5	37.75	39.75	34#
14"	32.50	#6	43.75	45.75	40#
16"	43.00	#7	53.75	55.75	58#



VALVE TRENCH ADAPTER FOR DEPTHS GREATER THAN 4 FOOT

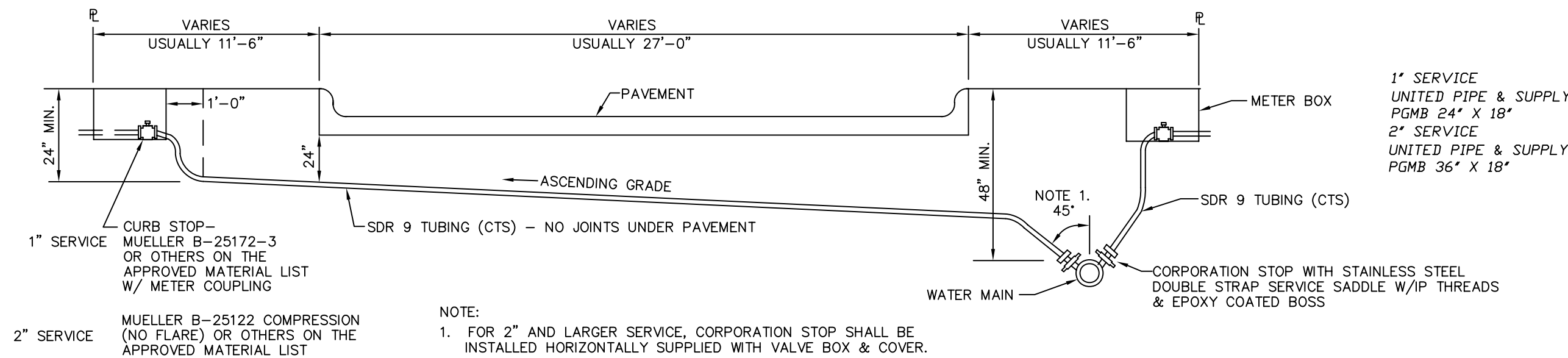
NOT TO SCALE

AMERICAN FLOW CONTROL OR APPROVED EQUAL



BULL HEAD SERVICES

NOT TO SCALE



WATER SERVICE DETAIL

NOT TO SCALE

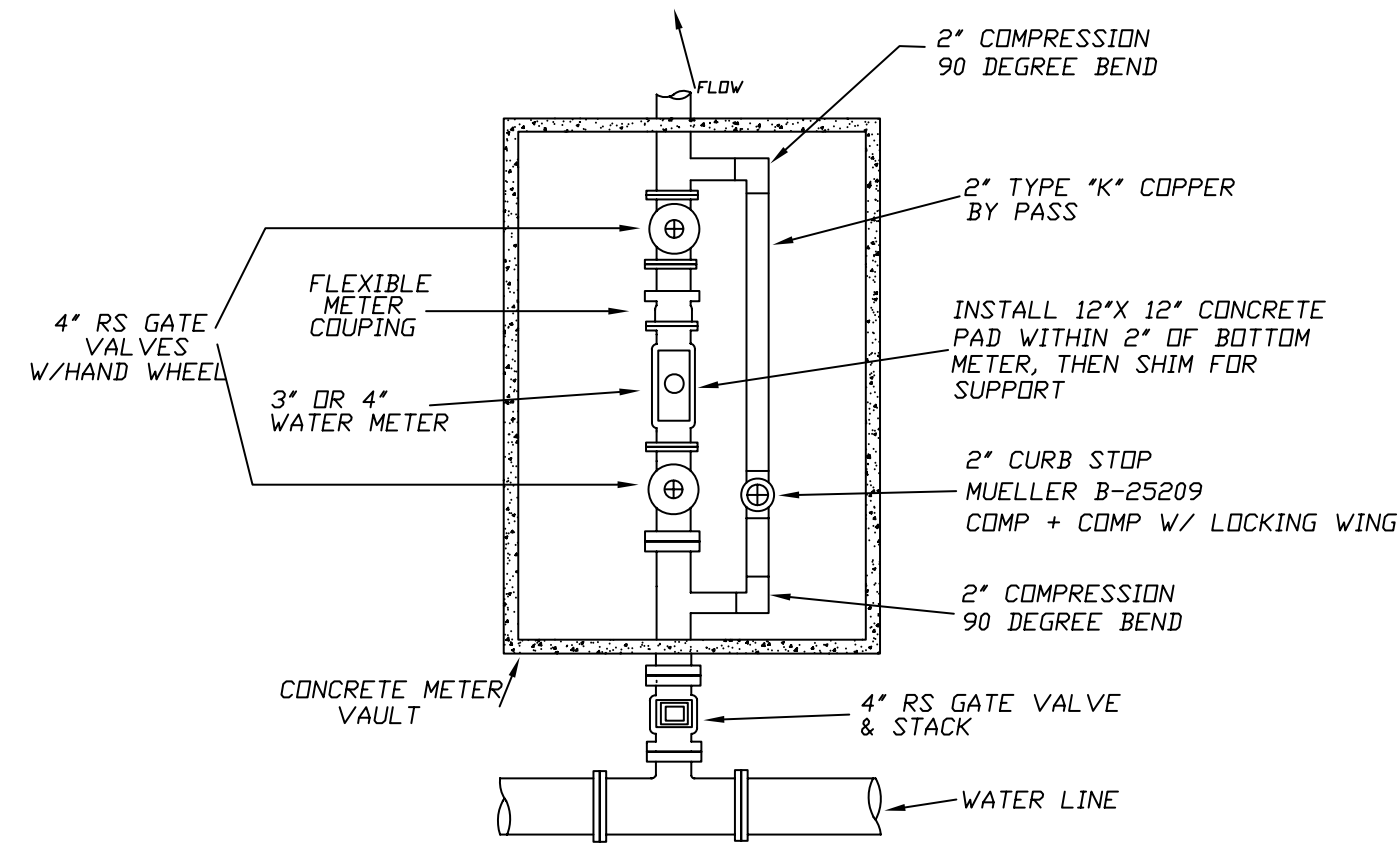
NOTE: PRIOR TO CONSTRUCTION, CONTRACTOR SHALL SUBMIT TO THE PUBLIC WORKS DEPT. A LISTING OF ALL MATERIALS TO BE USED. NO WORK SHALL BE UNDERTAKEN PRIOR TO WRITTEN APPROVAL OF THE MATERIAL LIST BY THE CITY PUBLIC WORKS DEPT.

STANDARD HOUSE SERVICE

1. 1" SDR 9 TUBING (CTS), OR APPROVED EQUAL.
2. STAINLESS STEEL DOUBLE STRAP W/ EPDXY COATED BOSS SERVICE CLAMP W/ IP THREADS
3. 1" CORPORATION STOP-MUELLER H 15029-1 OR APPROVE EQUAL
4. 1" CURB STOP-MUELLER B-25172-3, OR APPROVED EQUAL.
5. METER BOX PGMB 24" X 18"

NOTE: SEE SHEET 4 OF 4 FOR ADDITIONAL GENERAL NOTES

	DUCTILE IRON PIPE	PVC PIPE
1" SERVICE	STAINLESS STEEL DOUBLE STRAP WITH EPDXY COATED BOSS SERVICE CLAMP WITH IP THREADS MUELLER H-15029 CORP STOP OR APPROVED EQUAL	STAINLESS STEEL DOUBLE STRAP WITH EPDXY COATED BOSS SERVICE CLAMP WITH IP THREADS MUELLER H-15029 CORP STOP OR APPROVED EQUAL
2" SERVICE	STAINLESS STEEL DOUBLE STRAP WITH EPDXY COATED BOSS SERVICE CLAMP WITH IP THREADS MUELLER H-15023 CORP STOP OR APPROVED EQUAL (NO FLARE)	STAINLESS STEEL DOUBLE STRAP WITH EPDXY COATED BOSS SERVICE CLAMP WITH IP THREADS MUELLER H-15023 CORP STOP OR APPROVED EQUAL (NO FLARE)

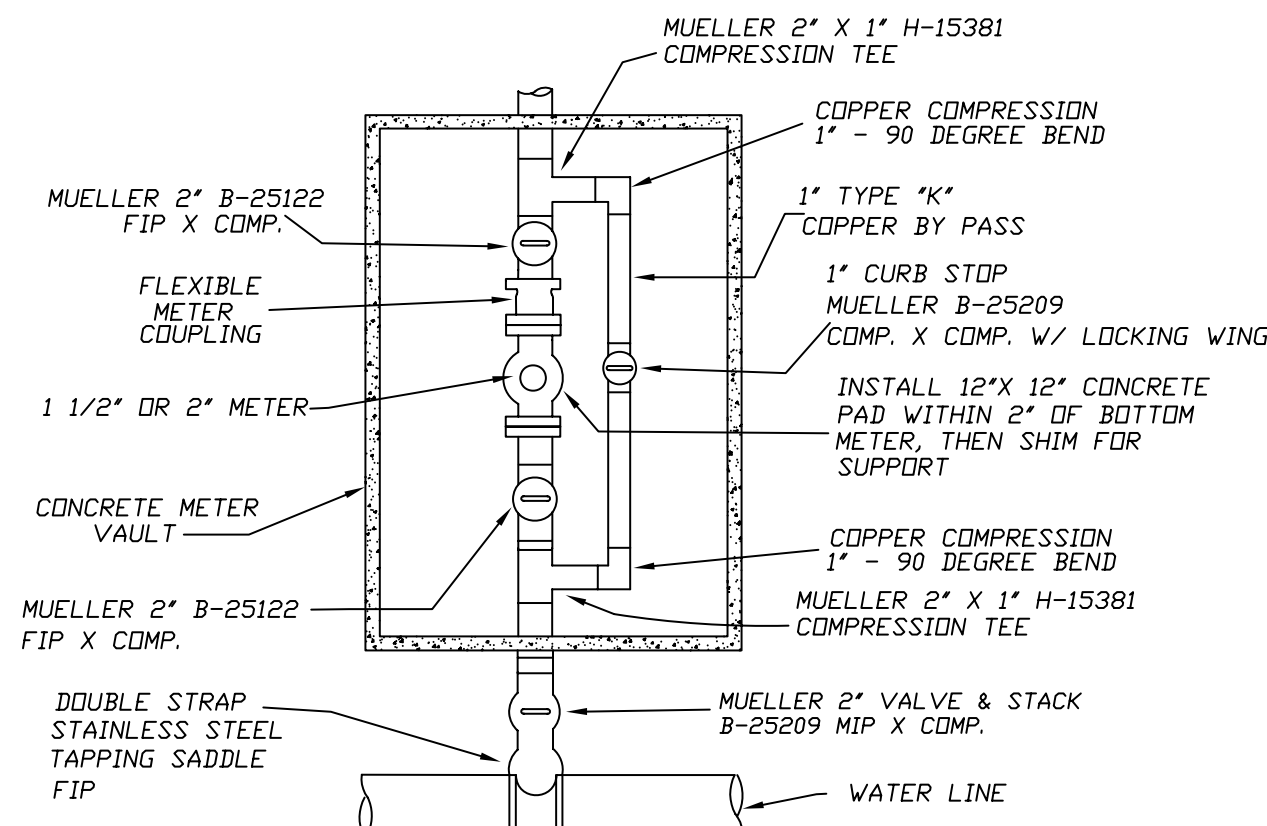


3" OR 4" TYPICAL METER BYPASS

NOT TO SCALE

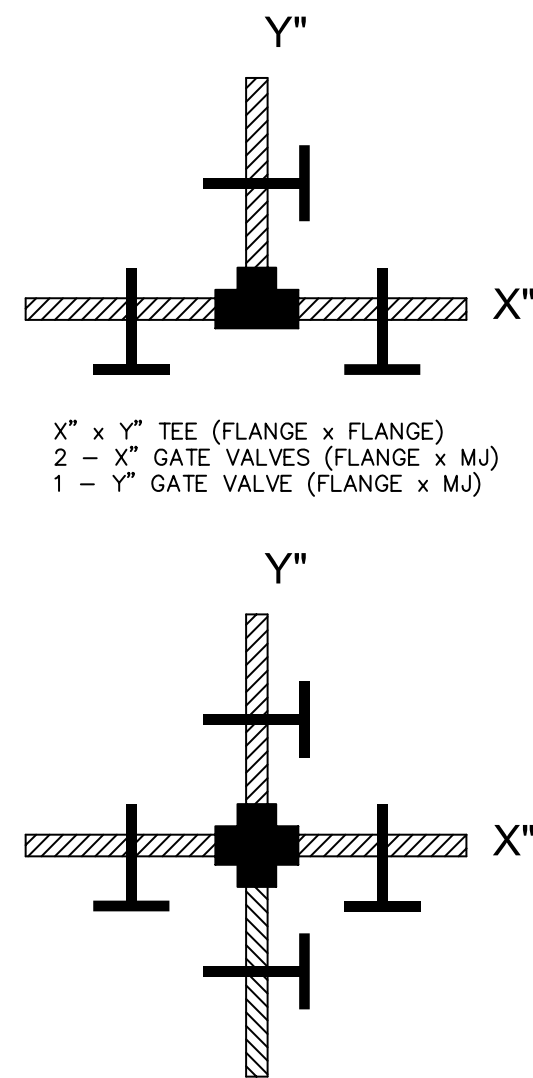
SEE SHEET 2 OF 4 FOR VAULT DETAILS

COMMERCIAL APPLICATIONS



1 1/2" OR 2" TYPICAL METER BYPASS

NOT TO SCALE

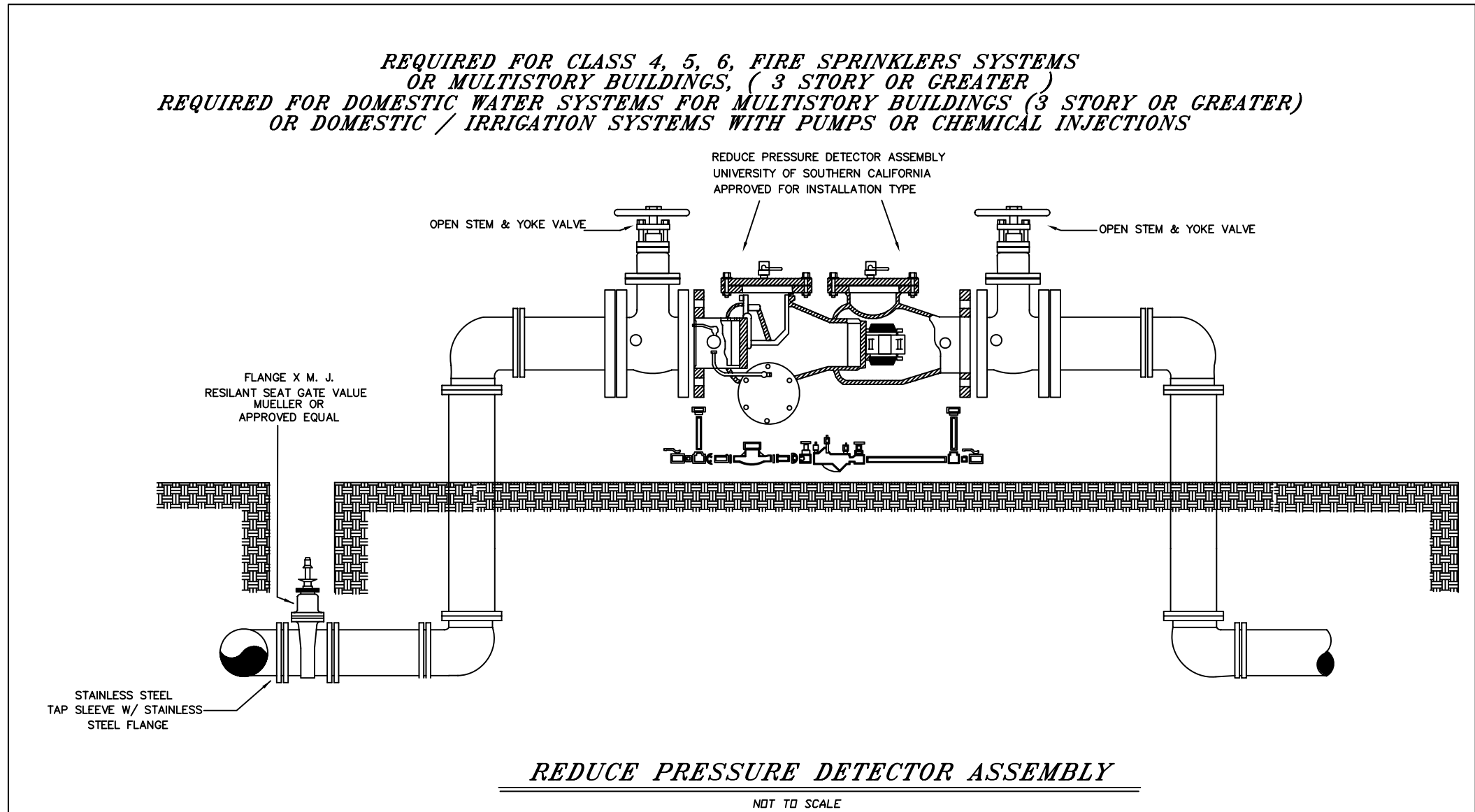
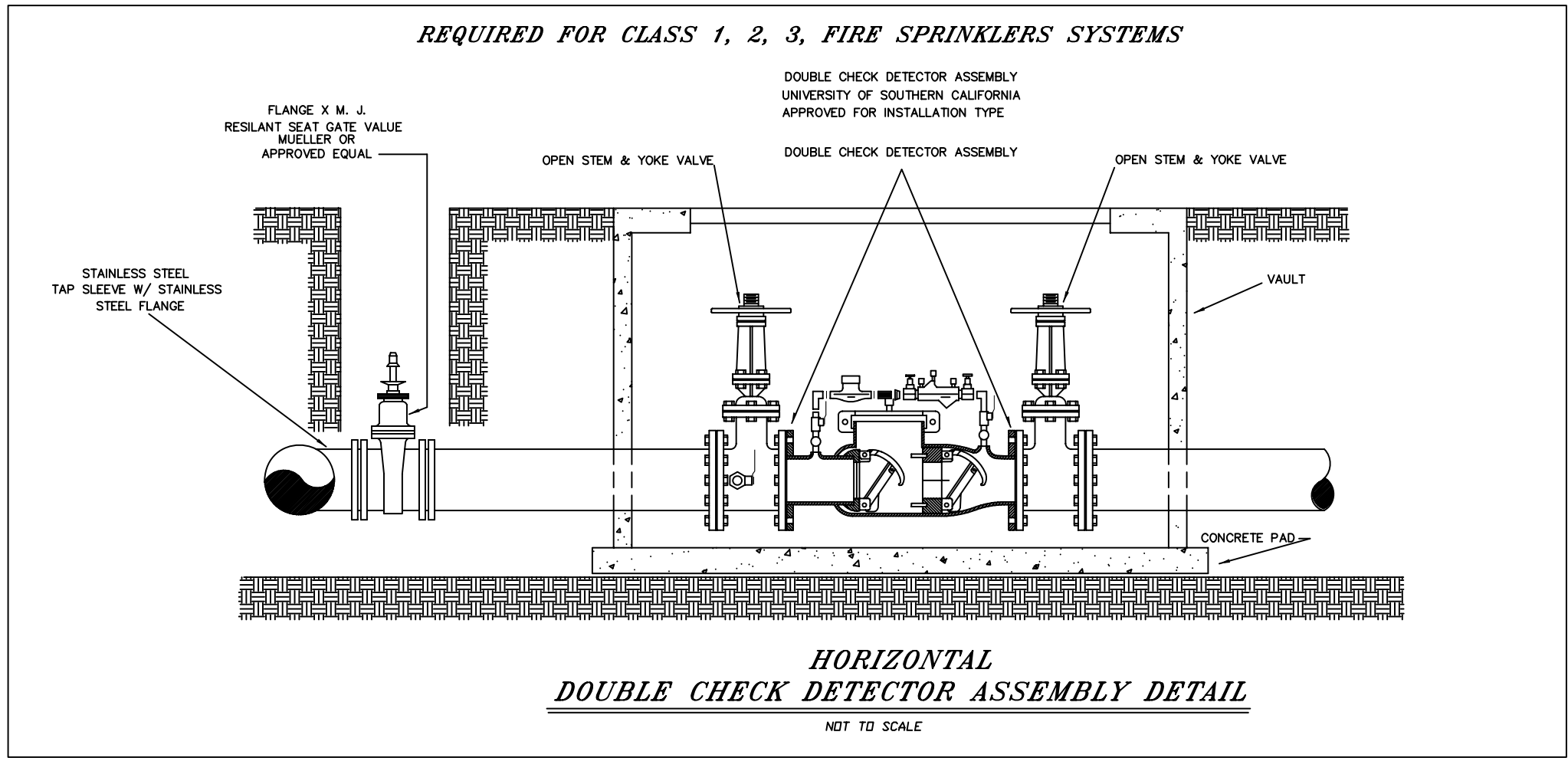
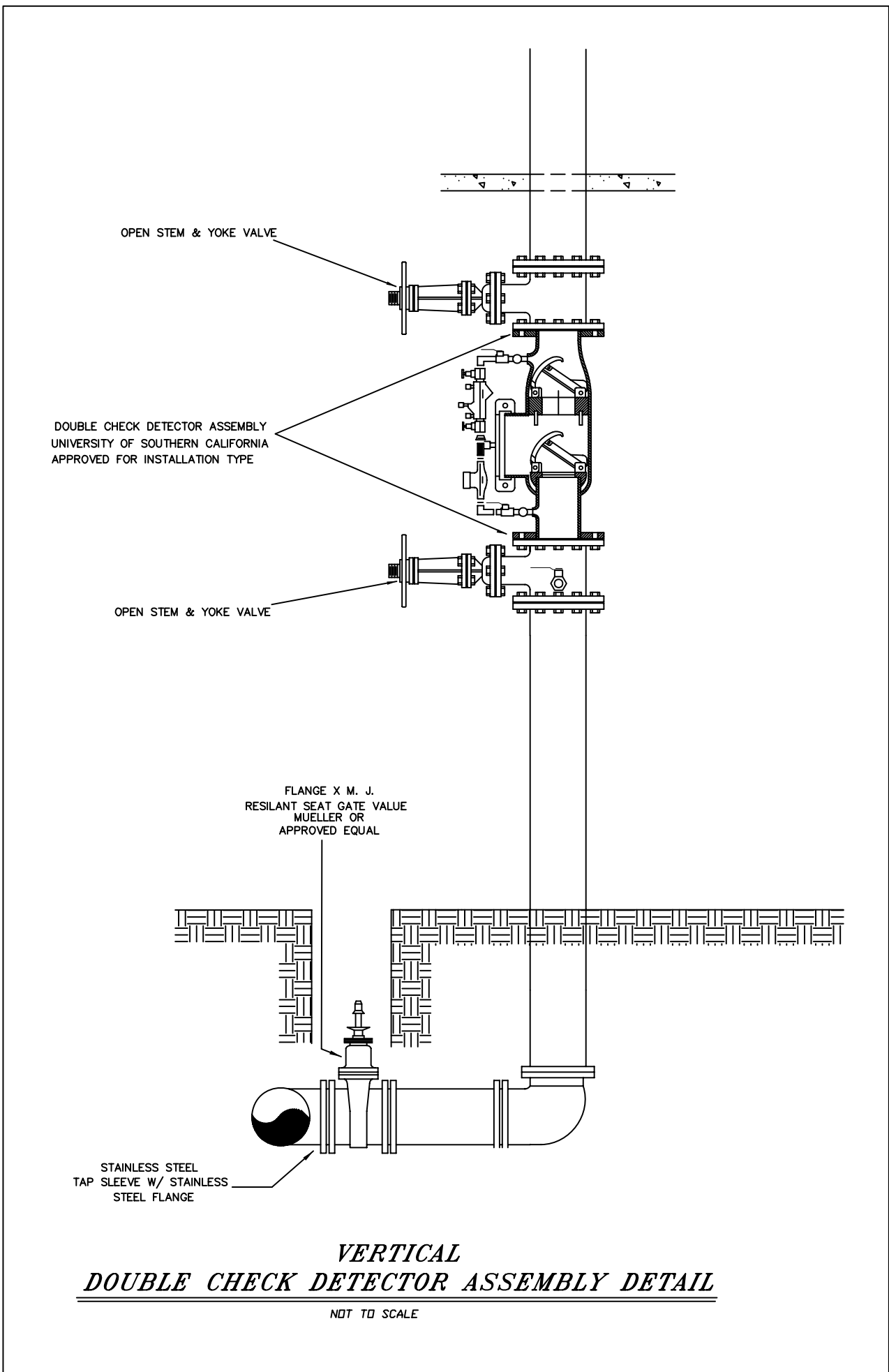
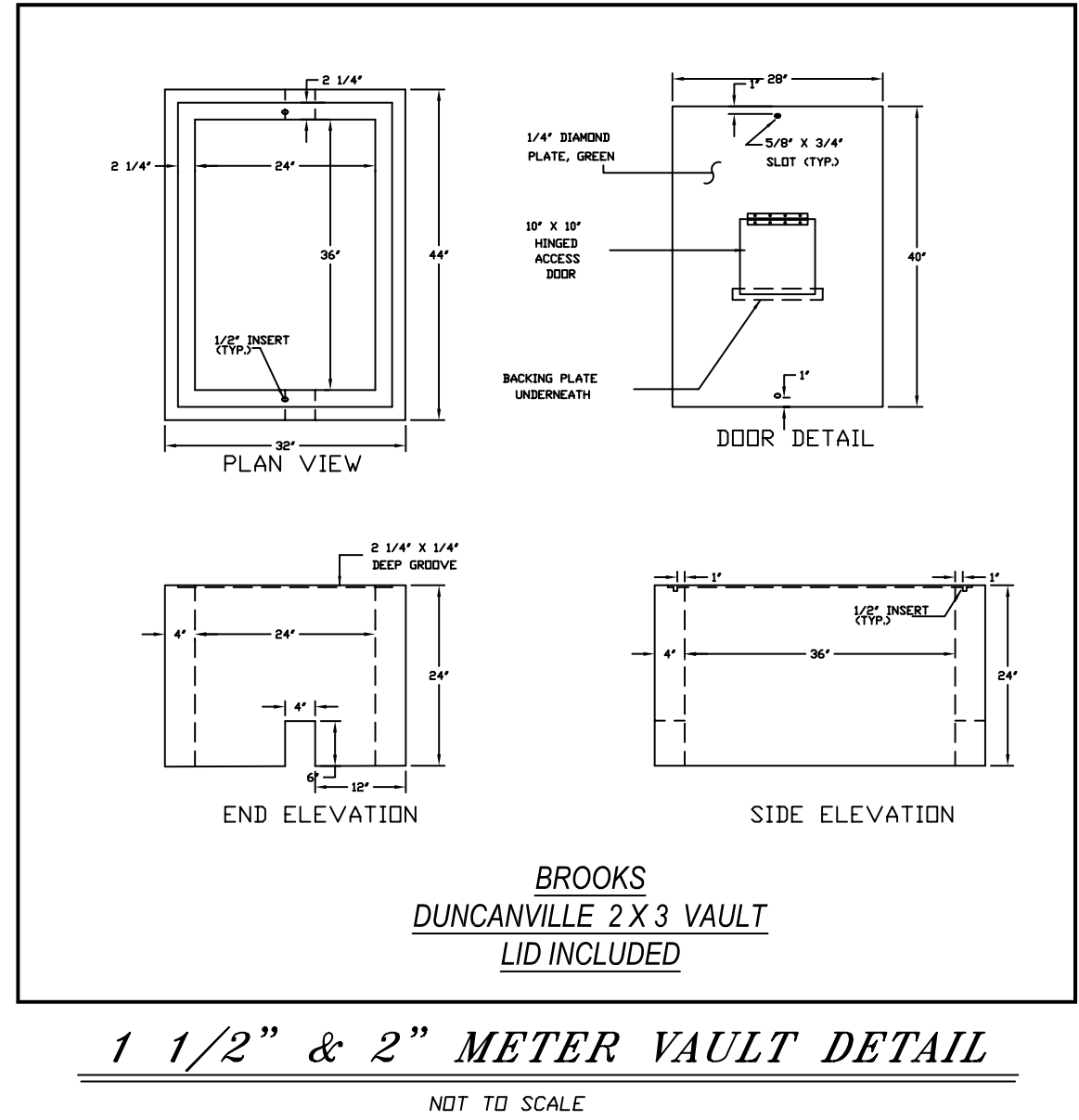
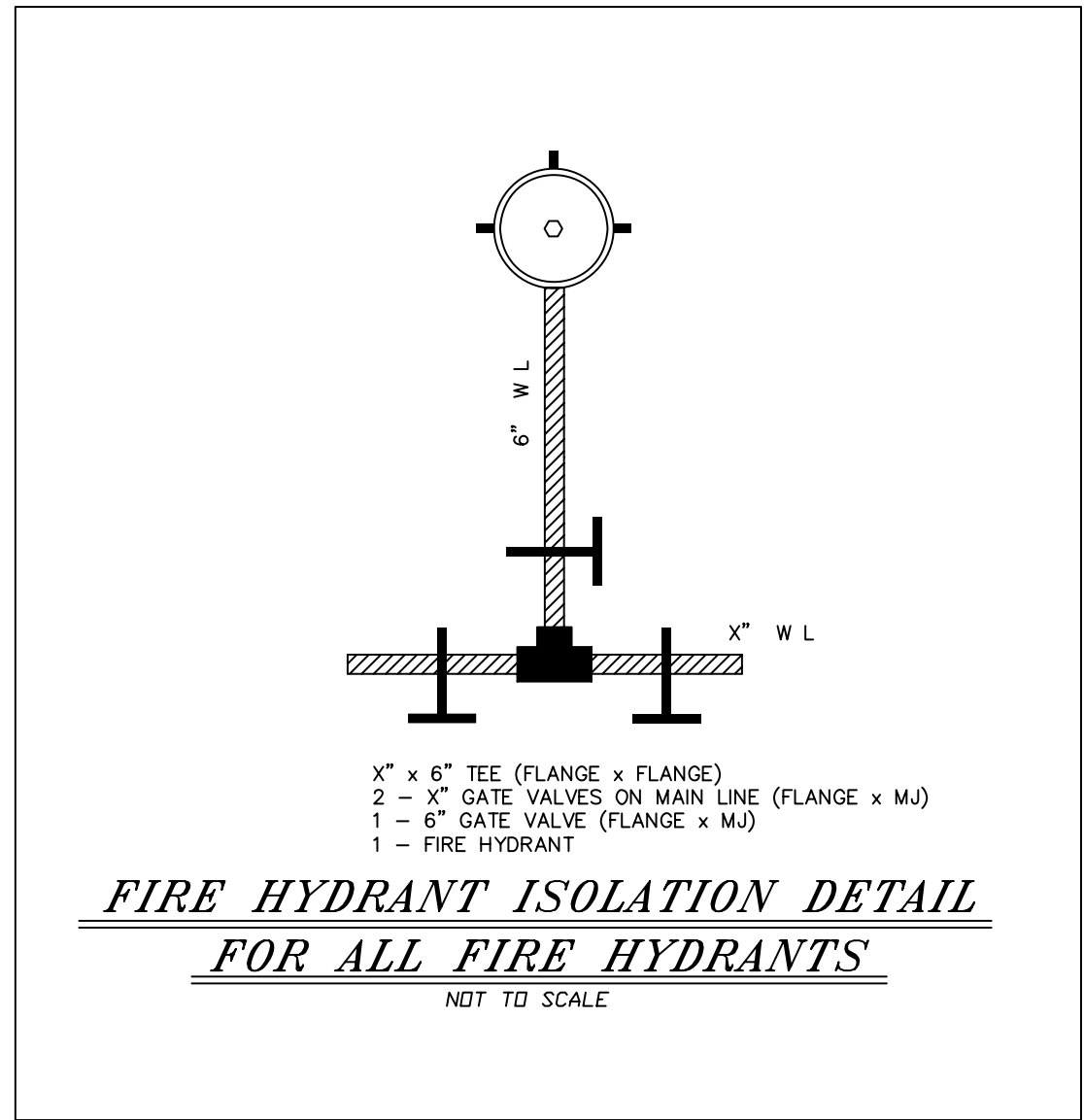
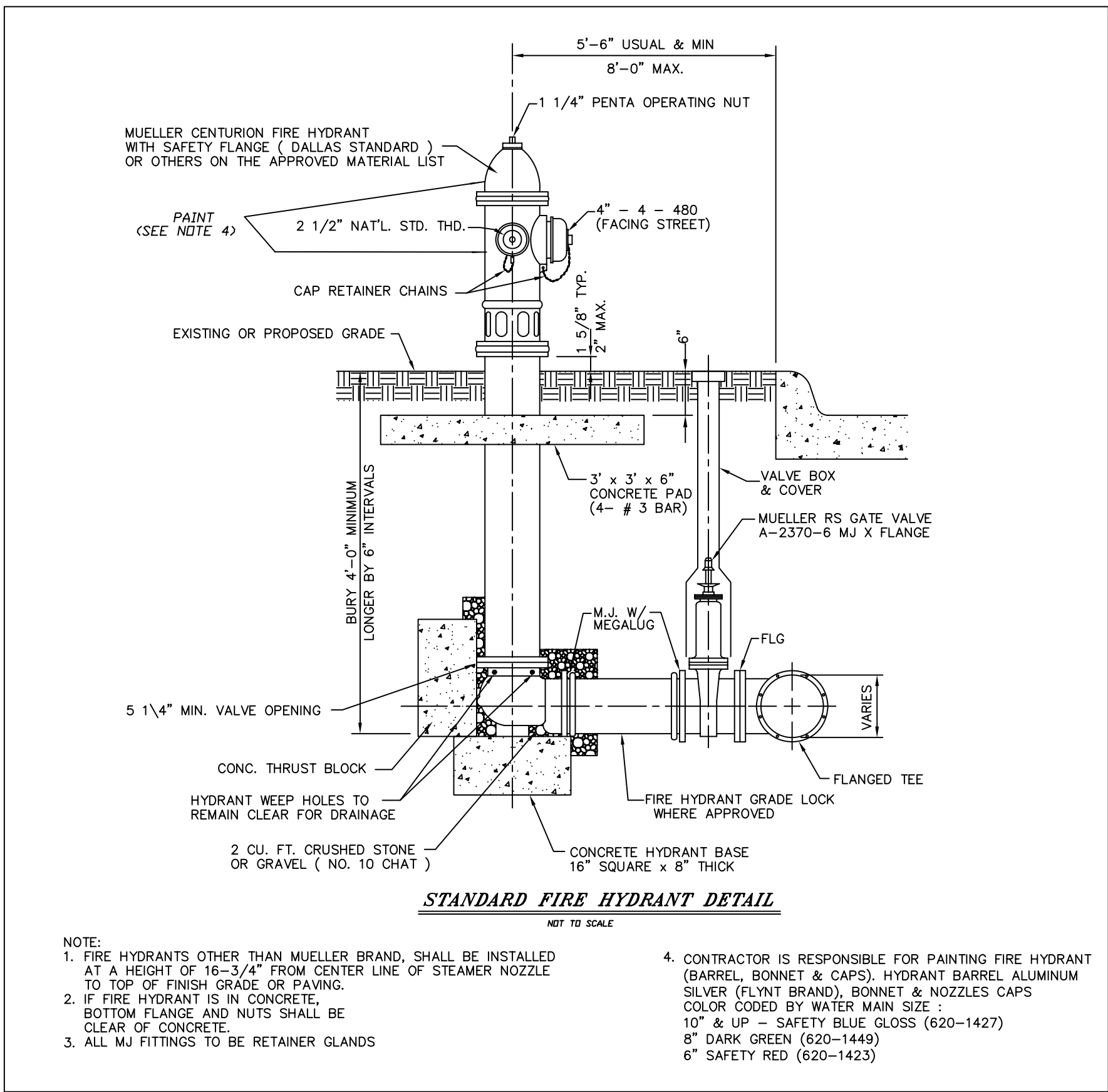
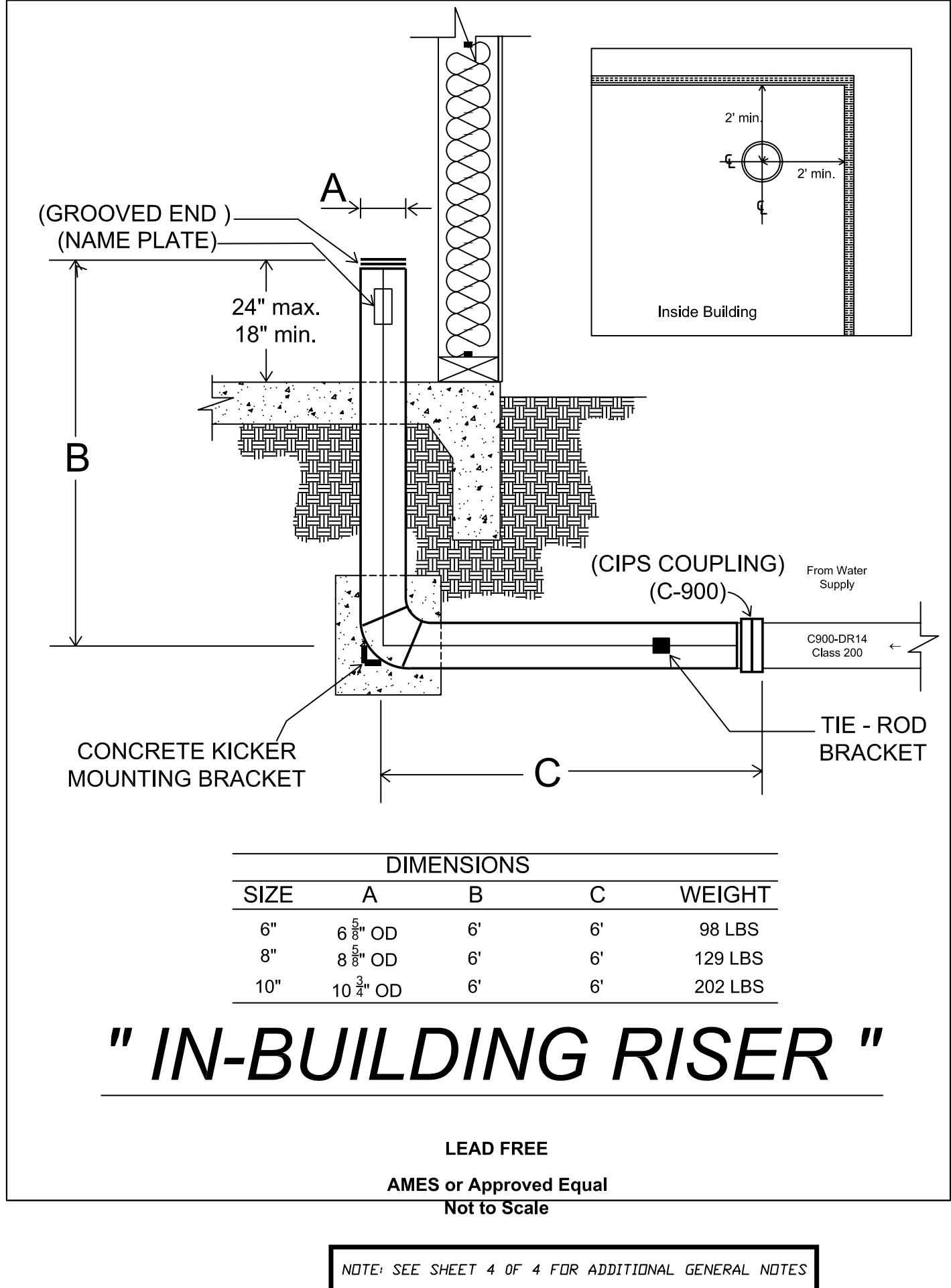
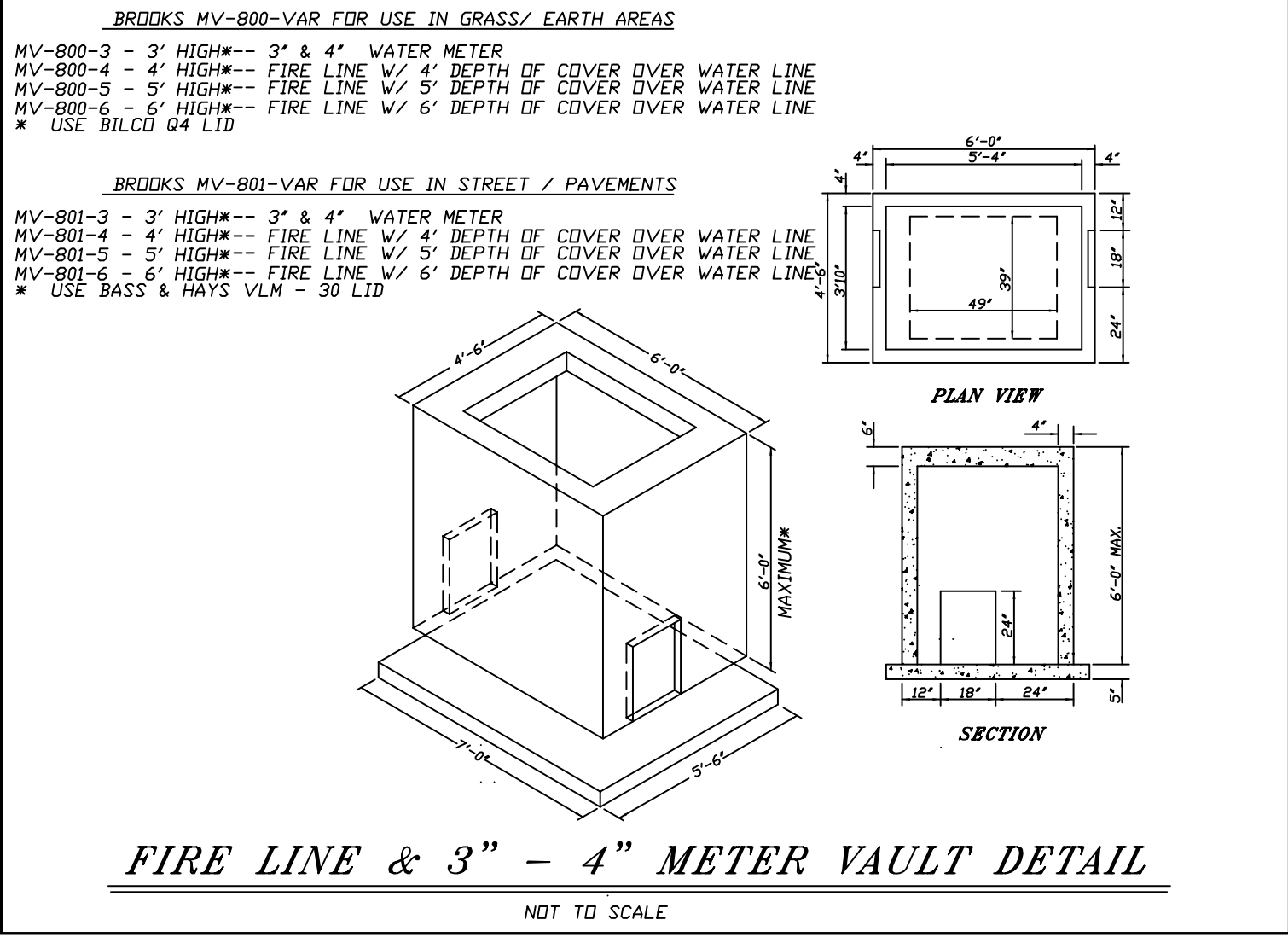


MAIN LINE ISOLATION DETAIL

NOT TO SCALE

REVISIONS	
JAN 2015	STW

TOWN OF PANTEGO WATER DETAIL SHEET



REVISIONS	
JAN 2015	STW

TABLE OF TRENCH WIDTHS			
KIND OF PIPE	EXTERNAL DIAMETER IN INCHES	TRENCH WIDTH Bd IN INCHES	TRENCH WIDTH Bd IN FEET
Ductile or C.I. Water Pipe	6.90	24	2.00
P.V.C. Water Pipe	6.90	24	2.00
Ductile or C.I. Water Pipe	9.05	25	2.09
P.V.C. Water Pipe	9.05	25	2.09
Ductile or C.I. Water Pipe	11.10	27	2.26
P.V.C. Water Pipe	11.10	27	2.26
Ductile or C.I. Water Pipe	13.20	29	2.43
P.V.C. Water Pipe	13.20	29	2.43
Ductile or C.I. Water Pipe	17.40	33	2.75
Prestressed Conc. Lined Cyl. Pipe	21.00	37	3.10
Pretensioned Conc. Lined Cyl. Pipe	20.50	37	3.10
Ductile or C.I. Water Pipe	19.50	36	3.00
Prestressed Conc. Lined Cyl. Pipe	23.50	40	3.33
Pretensioned Conc. Lined Cyl. Pipe	23.00	39	3.25
Ductile or C.I. Water Pipe	21.60	38	3.17
Prestressed Conc. Lined Cyl. Pipe	25.50	42	3.50
Pretensioned Conc. Lined Cyl. Pipe	25.00	42	3.50
Ductile or C.I. Water Pipe	25.80	42	3.50
Prestressed Conc. Lined Cyl. Pipe	30.00	46	3.83
Pretensioned Conc. Lined Cyl. Pipe	29.00	45	3.75
Ductile or C.I. Water Pipe	32.00	48	4.00
Prestressed Conc. Lined Cyl. Pipe	37.00	61	5.00
Pretensioned Conc. Lined Cyl. Pipe	35.00	59	4.92
Ductile or C.I. Water Pipe	38.30	62	5.19
Prestressed Conc. Lined Cyl. Pipe	43.50	68	5.70

1. ALL MATERIALS AND CONSTRUCTION UNLESS OTHERWISE NOTED SHALL CONFORM TO THE CURRENT "STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION" PUBLISHED BY THE NORTH CENTRAL TEXAS COUNCIL OF GOVERNMENTS AND TOWN OF PANTEGUE DRAWINGS DETAILS FOR WATER & WASTEWATER CONSTRUCTION METHODS.
2. ALL VALVES TO BE MUELLER RESILIENT SEAT WEDGE GATE NON-RISING STEMS, OR AN APPROVED EQUAL.
3. ALL 16" VALVES OR LARGER SHALL BUTTERFLY VALVES BY APASS.
4. ALL FITTINGS TO BE MECHANICAL JOINT UNLESS OTHERWISE NOTED. ALL MECHANICAL JOINT RESTRAINING GLANDS SHALL BE "MEGA LUG" OR AN APPROVED EQUAL FOR ALL WATER PIPE. IN ADDITION, THRUST BLOCKING IS REQUIRED PER CITY STANDARD DRAWINGS.
5. UNLESS OTHERWISE NOTED, ALL WATER MAINS SHALL HAVE A MINIMUM COVER OF 48".
6. UNLESS OTHERWISE NOTED ALL WATER MAINS SHALL BE PVC C-900 DR14 OR DUCTILE IRON, CLASS 51, WITH 8 MIL. POLYWRAP.
7. LOCATION OF MAIN AND HOUSE SERVICES TO BE TIED FOR RECORD DRAWINGS.
8. ALL VALVES TO BE IN LINE WITH PROPERTY LINE WHERE POSSIBLE.
9. FIRE HYDRANTS SHALL BE MOUNTED WITH CENTER OF BARREL SPACING BEHIND BACK OF PROPOSED CURB A MINIMUM OF 5'-6" AND A MAXIMUM DISTANCE OF 8'-0". (FIRE HYDRANT LOCATIONS SHALL BE CLEAR OF PRESENT OR FUTURE SIDEWALKS).
10. ALL FIRE HYDRANTS SHALL BE PAINTED FIRE HYDRANT RED.
11. ALL CONNECTIONS SHALL BE INSTALLED PER ITEM 6.7.3 (j) OF THE NCTCGO STANDARD SPECIFICATIONS REFERENCED.
12. CONTRACTOR SHALL FURNISH AND INSTALL APPROPRIATE METER BOXES FOR FIRST TIME SERVICES.
13. A PERMANENTLY ATTACHED VALVE EXTENSION STEM SHALL BE REQUIRED FOR ANY VALVE IF THE OPERATING NUT IS LOCATED 4' BELOW THE VALVE BOX LUG. THIS EXTENSION SHALL BE OF SUFFICIENT LENGTH TO ENSURE THAT ITS TOP IS WITHIN 4" OF THE VALVE BOX LUG.
14. PRIOR TO CONNECTION WITH EXISTING WATER MAIN, THE CONTRACTOR SHALL INSTALL SDR 9 TUBING (CTS) BLEEDER LINES PER TCEQ RULES & REGULATIONS (1000' MAXIMUM SPACING) OR AS APPROVED BY CITY.
15. BACTERIA TEST SHOULD BE TAKEN WITH CITY'S INSPECTOR PRESENT. A MINIMUM OF 2 SAMPLES PER LINE WILL BE REQUIRED. ALL WATER SAMPLES SHALL THEN BE TAKEN BY THE CITY TO A TESTING LAB. THE CITY SHALL BEAR THE COST OF THE INITIAL LAB TESTING. IF INITIAL BACTERIA TEST FAILS, ALL SUBSEQUENT TESTING SHALL BE AT THE EXPENSE OF THE CONTRACTOR. UPON RECEIPT OF A BACTERIOLOGICAL PASSING REPOTE ON NEW WATER MAIN, THE CONTRACTOR SHALL REMOVE SDR 9 TUBING (CTS) BLEEDER LINES AND CORPS AND CORPS FROM WATER MAINS AND INSTALL BRASS PLUGS. (SUBSIDIARY TO WORK PERFORMANCE).
16. PRESSURE TESTING SHALL BE COMPLETED PRIOR TO THE PLACING OF FORMS AND PLACING OF REINFORCED STEEL FOR PAVING.
17. 1" AND 2" SERVICES ON DUCTILE IRON OR PVC SHALL BE STAINLESS STEEL STRAP TAPPING SADDLES WITH I.P. THREAD EPOXY COATED BOSS.
18. CENTER LINE OF SERVICES IN METER BOX SHALL NOT EXCEED 18" FROM TOP OF SURROUNDING GRADE.
19. ANYTIME A WATER LINE IS CUT OR ABANDONED, ALL OPEN ENDS SHALL BE FILLED A MINIMUM OF 3 FEET WITH 2000 P.S.I. CONCRETE.
20. ALL 4" AND UP TAPPING SLEEVES SHALL BE FULL CIRCLE, STAINLESS STEEL WITH STAINLESS STEEL BOLTS AND FLANGES, ROMAC BRAND OR OTHERS OF THE APPROVED MATERIAL LIST.
21. A HYDROSTATIC TEST SHALL BE PERFORMED ON ALL INSTALLED WATER MAINS PER ITEM 6.7.X(f) OF THE "STANDARD SPECIFICATIONS" REFERENCED; NO LEAKAGE WILL BE PERMITTED.
22. ONLY DUCTILE IRON PIPE CLASS 52 OR PVC-C900 DR-14 WATER PIPE WILL BE PERMITTED FOR FIRE LINE WATER SERVICE INSTALLATION.
23. ALL PRECAST VAULTS AND PRECAST FLOORS USED IN THE INSTALLATION OF LARGE WATER SERVICE WILL MEET DRAWING SPECIFICATIONS.
24. CAST IN PLACE CONCRETE SHALL BE CLASS 7" CONCRETE, EXCEPT FOR CONCRETE USED FOR THRUST BLOCKING, WHICH SHALL BE CLASS 5" CONCRETE.
25. THE 3' X 4' ALUMINUM ACCESS HATCH COVER SHALL MEET DRAWING SPECIFICATIONS AND MUST BE ON AN APPROVED LIST OF ACCEPTABLE HATCH COVERS.
26. EMBEDEDMENT, TRENCH BACKFILL, CONCRETE, AND ASPHALTIC CONCRETE MATERIALS AND THEIR PLACEMENT METHODS SHALL CONFORM TO NCTCGO SPECIFICATIONS FOR MATERIAL AND CONSTRUCTION METHODS.
27. DOUBLE CHECK DETECTOR ASSEMBLY DEVICES SHALL BE PROVIDED BY THE DEVELOPER, BASED ON THE TYPE OF INSTALLATION.
28. IN BUILDING RIDER DCB ACCEPTED IF LOCATED WITHIN 35' OF MAIN LINE
29. THE INSTALLATION OF A 6", 8" OR 12" CLOSED FIRE LINE SERVICE WITH A DOUBLE CHECK DETECTOR DEVICE MAY REQUIRE A DIFFERENT DIMENSION THEN THOSE SHOWN ON THE SPECIFICATIONS.
30. FIRE LINE DOUBLE CHECK DETECTOR ASSEMBLY SHALL BE TESTED AND CERTIFIED BY A T.C.E.Q. REGISTERED FIRE LINE TESTER.
31. THE CONTRACTOR SHALL FIELD VERIFY LOCATION OF WATER MAIN PRIOR TO COMMENCING CONSTRUCTION OF IMPROVEMENTS.
32. ALL TEES AND CROSSES SHALL HAVE A GATE VALVE ON ALL SIDES OF THE FITTING.

IF UNDER PAYMENT, BACKFILL TO BE GRANULAR MATERIAL. PI < 15. (95 % STD PROCTOR DENSITY)
 IF NOT UNDER PAYMENT, BACKFILL TO BE SELECT NATIVE MATERIAL. (95 % STD PROCTOR DENSITY)

GRANULAR MATERIAL
 P.I. < 15
 INSTALLED
 12" OVER PIPE

COMPACTED CRUSHED STONE,
 FINE GRADATION
 (PEA GRAVEL OR 3/8"
 TO #10 CHAT)

12"

3/4 O.D. OF PIPE

6" MIN.

6" 6"

WATER MAIN EMBEDMENT DETAIL

NOT TO SCALE

The diagram illustrates the installation of a new potable waterline. A horizontal pipe, labeled 'Flexible Encased Pipe', is shown with 'New Potable Waterline' above it and 'New Non-pressure Rated Wastewater Line' below it. The pipe is composed of segments separated by 'Spacers at 5-foot Intervals'. A 'Flexible Encased Pipe' label points to one of the segments. A 'New Potable Waterline' label points to the top of the pipe. A 'New Non-pressure Rated Wastewater Line' label points to the bottom of the pipe. A 'Spacers at 5-foot Intervals' label points to the joint between two pipe segments. Dimension lines indicate a '9-foot Minimum' clearance from the waterline to the top of the pipe, a '6-inch Minimum Clearance' from the pipe to the wastewater line, and a '9-foot Minimum' clearance from the wastewater line to the bottom of the pipe. The pipe is also labeled 'Each End of Casing is to be Sealed'.

-

-
- Diagram illustrating the encasement process for a waterline. The diagram shows a cross-section of a manhole and the encasing pipe. Key components and dimensions are labeled:
- End of Casing to be Sealed**: Points to the top of the encasing pipe.
 - Less Than 9-foot Clearance**: Indicates the gap between the manhole wall and the encasing pipe.
 - Manhole**: The circular structure being encased.
 - Encasing Pipe**: The pipe used to encase the waterline.
 - Waterline**: The existing pipe being encased.
 - Potable**: Label for the section of the waterline below the waterline.
 - New**: Label for the bottom section of the encasing pipe.
 - Spacers or Washed Sand**: Material placed at the bottom of the encasing pipe.
 - 9-foot Minimum**: Two vertical dimension lines indicating the minimum clearance required above and below the waterline section.

REVISIONS	
JAN 2015	STW