

- A. ROMAC 101S SADDLE FOR DUCTILE IRON PIPE  
FORD S90 SADDLE FOR PVC PIPE. REPAIR POLYWRAP AFTER INSTALLATION
- B. FORD FB1100-4-Q-NL CORPORATION STOP (1")  
IRON PIPE THREAD INLET X QUICK JOINT OUTLET
- C. 1" POLYETHYLENE TUBING, SDR-9, 200 PSI PRESSURE CLASS  
DRISCO PIPE WITH 14 GAUGE LOCATING WIRE OR  
COPPER TUBING TYPE K. COPPER TUBING TO BE INSTALLED  
IN POLYETHYLENE WRAP FOR A MINIMUM OF 3 FEET FROM WATER MAIN.  
SERVICES WITHIN WSDOT ROW TO BE ENCASED IN 2" POLY, SDR-11.
- D. 1" COPPER METER SETTER – FORD VBH94-15W-MM-44ZA-NL.
- E. WATER METER TO BE PROVIDED BY DISTRICT. METERS SMALLER  
THAN 1" SHALL BE INSTALLED WITH REDUCING BUSHINGS. (FORD  
A-24, PROVIDED BY THE DEVELOPER).
- F. CARSON HW 1527-18 BCF HDPE, 18" DEPTH. NON-TRAFFIC AREAS:  
COMPOSITE COVER WITH CAST IRON READER LID AND 2" TRANSMITTER HOLE,  
OLDCASTLE PART # FL1527 GP. TRAFFIC AREA: CAST IRON COVER WITH  
READER LID AND 2" TRANSMITTER HOLE, OLDCASTLE PART # 15274009.
- G. 2"x 4"x 6' LONG MARKER POST. BURY 3'. PAINT WHITE WITH  
"WATER" STENCILED IN BLUE PAINT.
- H. PVC CAP ON TAILPIECE. WHEN SIDEWALK IS INSTALLED BEHIND  
METER BOX, A COPPER TAILPIECE OF LIKE LENGTH SHALL BE  
EXTENDED TO THE PROPERTY SIDE OF WALKWAY.

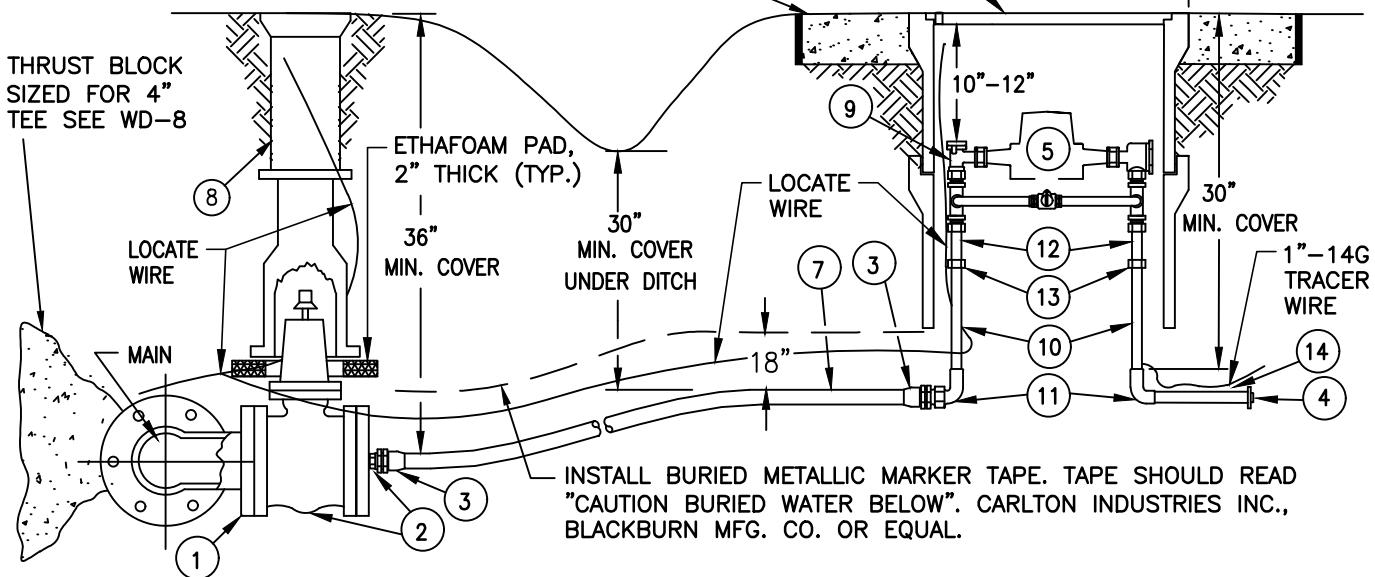
NOTE: PRESSURE REDUCING VALVE INSTALLED BY PROPERTY OWNER.

PROVIDE BLOCK OUT FOR  
METER BOXES IN  
DRIVeways PREAPPROVAL  
REQUIRED  
SEE DETAIL WD-5A

SEE NOTE B

PUBLIC  
RESPONSIBILITY

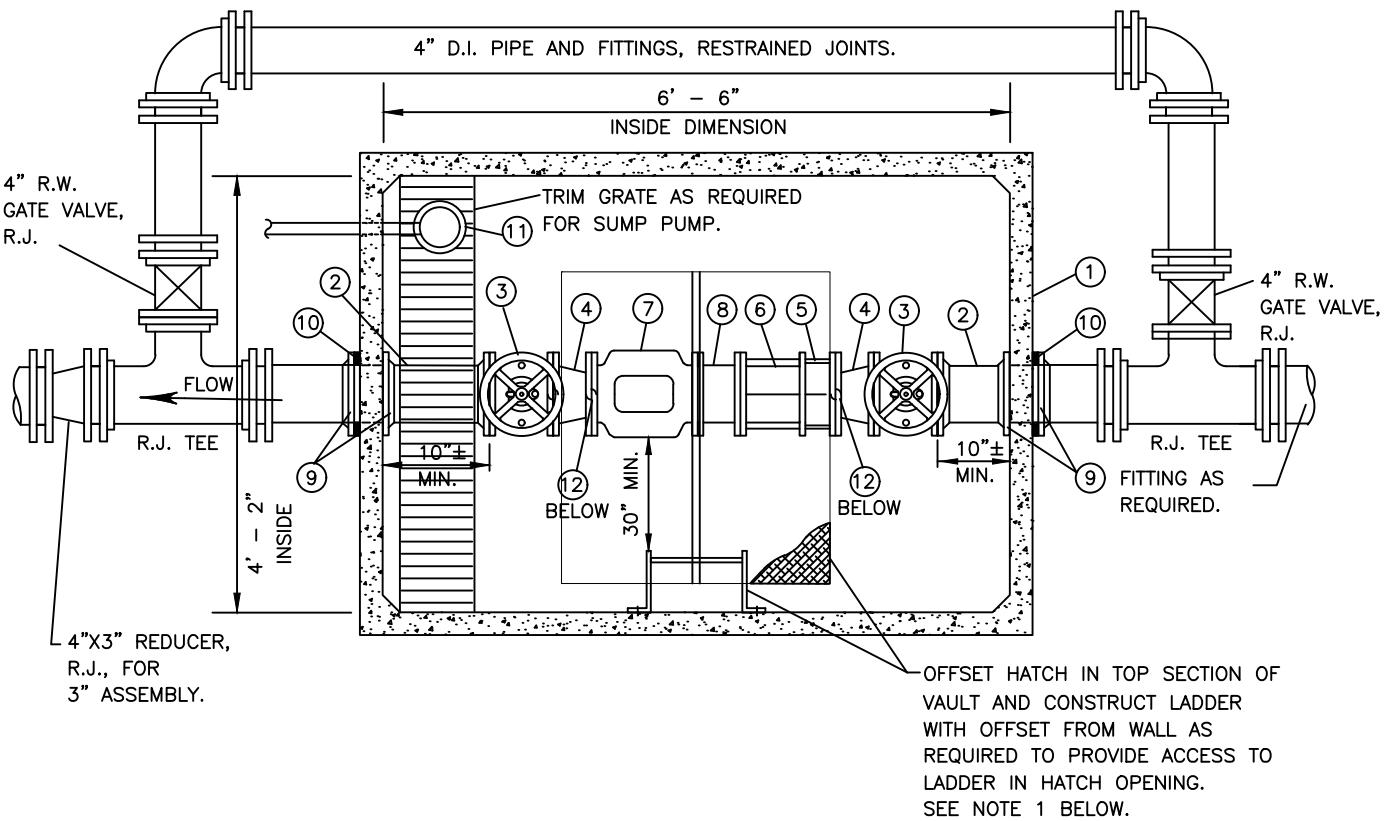
PRIVATE  
RESPONSIBILITY



NO.	ITEM
1	DISTRICT-APPROVED TEE X 4" (FL)
2	4" R/W GATE VALVE (FL X FL) 4" X 2" COMPANION FLANGE (FIPT)
3	2" FORD GRIP JOINT
4	2" PLASTIC CAP (SCHEDULE 40)
5	2" BADGER RECORDALL METER SUPPLIED BY DISTRICT AFTER PURCHASE
6	REFER TO DETAIL WD-5 FOR METER BOX TYPE
7	2" TYPE K COPPER PIPE (SOFT) 2" SERVICE PIPE (MAIN TO METER): SDR-7, DRISCO PIPE, IPS, WITH 14-GAUGE LOCATING WIRE (SOLID, NO STRANDS), OR COPPER TUBING, TYPE K, INSTALLED IN POLYETHYLENE WRAP FOR A MINIMUM OF 3' FROM WATER MAIN
8	CAST-IRON VALVE BOX WD-11, 18" TOP, 30" BOTTOM
9	2" BRASS METER SETTER WITH HIGH BYPASS AND LOCKING BALL VALVE FORD VBH77-12HB-11-77-NL WITH VERTICAL IN AND OUT CONNECTION
10	2" BRASS NIPPLE 6" LONG MIN. (MIPT)
11	2" BRASS 90° ELBOW (FIPT)
12	2" NIPPLE 3" LONG MIN.
13	2" BRASS UNION (FIPT)
14	2" BRASS NIPPLE 2' MIN. (EXTEND TO BACK OF SIDEWALK IF NECESSARY)

NOTES:

- NO SPLICES ALLOWED UNLESS APPROVED BY DISTRICT. USE FORD QUICK JOINT.
- OWNERS ARE RESPONSIBLE FOR INSTALLING PRESSURE REDUCER ON THEIR SYSTEM TO PROTECT THEIR FACILITIES FROM HIGH PRESSURE, UNLESS OTHERWISE SHOWN ON DRAWING.
- SURFACE RESTORATION IN ACCORDANCE WITH JURISDICTIONAL AUTHORITY.
- 4" SAND BEDDING REQUIRED ON ALL COPPER.
- ALL FITTINGS SHALL BE "LEAD FREE".



## NOTES

1. PROVIDE SHOP DRAWINGS AND SUBMITTALS FOR ALL MATERIALS AND EQUIPMENT TO THE DISTRICT FOR REVIEW AND APPROVAL PRIOR TO CONSTRUCTION.
2. THE CONTRACTOR IS RESPONSIBLE FOR ELECTRICAL PERMITS AND APPROVALS FOR SUMP PUMP INSTALLATIONS.

SEE SHEET WD-3A FOR MATERIALS LIST

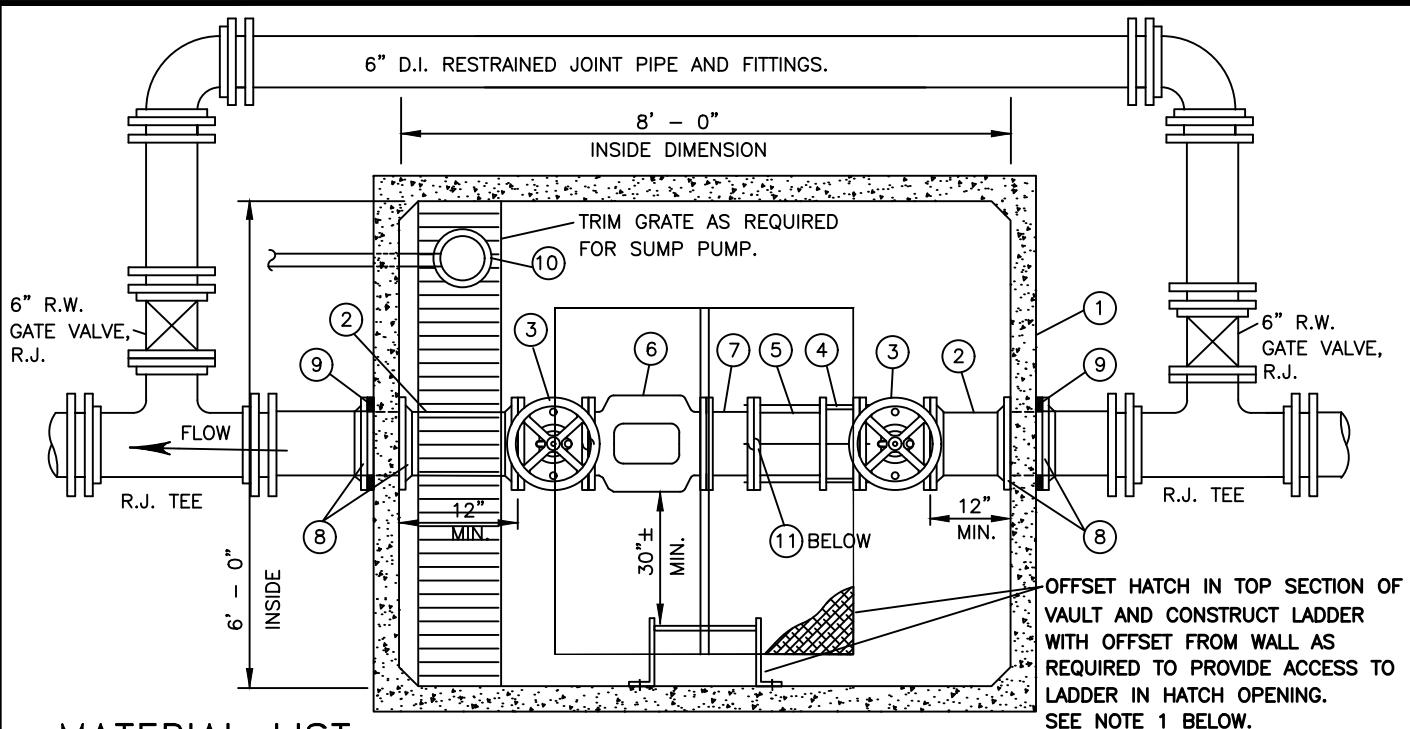
## MATERIAL LIST

1. PRECAST CONCRETE UNDERGROUND VAULT - "UTILITY VAULT COMPANY": 577-LA BASE SECTION: 577 WITH SUMP AND GRATE MIDDLE SECTION: 577 WITHOUT CHANNELS AND WITH KNOCK-OUTS FOR WATER PIPING ONLY. TOP SECTION: 577 WITH CAST IN PLACE HATCH RATED TO H20 TRAFFIC LOADING.

HATCH: HATCH SHALL BE 3'-6" x 3'-6" CLEAR OPENING, SINGLE LEAF, WITH H20 TRAFFIC RATING. OFFSET THE HATCH IN THE VAULT LID AS SHOWN TO PROVIDE ACCESS TO THE LADDER. THE HATCH SHALL BE LW PRODUCTS OR EQUAL WITH BILCO "LADDER-UP" SAFETY POST. THE HATCH SHALL DRAIN TO THE SUMP INSIDE THE VAULT.

LADDER: HOT DIPPED GALVANIZED BOLT-ON LADDER WITH #6 RUNGS ON 12" CENTERS AND MOUNTING BRACKETS AT TOP, MIDDLE AND BOTTOM. SECURE LADDER TO VAULT WALL WITH OFFSET SUFFICIENT TO PROJECT INTO HATCH.

PAINTING: THE INTERIOR OF THE CONCRETE VAULT SHALL BE PAINTED AT THE VAULT MANUFACTURER WITH ONE COAT OF STEEL COAT DAMP-TEX NO. 22 PRIMER AND TWO COATS OF STEEL COAT DAMP-TEX DX 110-WHITE. THE EXTERIOR BELOW GRADE SHALL BE PAINTED WITH TWO COATS OF KOPPERS BITUMASTIC BLACK SOLUTION.
2. 2-4" D.I. ADAPTER, FL. x P.E., 4'± LONG.
3. 2-4" RESILIENT SEAT GATE VALVE, NRS, FL., O-RING PACKING WITH HANDWHEEL.
4. 2-4"x3" REDUCER, FL., FOR 3" ASSEMBLY ONLY.
5. 3" OR 4" FLANGED COUPLING ADAPTER, ROMAC FCA 501, OR EQUAL.
6. 3" OR 4" D.I. ADAPTER, FL. x P.E., 9"± LONG (VERIFY).
7. DISTRICT TO PROVIDE CURRENT SPECIFIED METER AT DEVELOPER'S EXPENSE. SIZE OT TO BE DETERMINED DURING DESIGN PROCESS WITH DEVELOPER. READ REMOTE TO BE MOUNTED IN VAULT LID BY DEVELOPER.
8. 3" OR 4" STRAINER, FL., AS RECOMMENDED AND PROVIDED BY METER MANUFACTURER.
9. UNI-FLANGE ADAPTER.
10. 4-2" X 2" X 1/4" MIN. WALL THICKNESS SQUARE STEEL TUBING, 6' MIN. LENGTH. BOLT TO VAULT WALL IN FOUR PLACES WITH STAINLESS STEEL ANCHOR BOLTS.
11. SUMP PUMP OR GRAVITY DRAIN AS REQUIRED BY SITE CONDITIONS, TO BE DETERMINED BY THE DEVELOPER AND CONTRACTOR AND REVIEWED AND APPROVED BY THE DISTRICT. FOR SUMP PUMP: 16" DIAM. x 6" DEEP SUMP WITH HYDROMATIC OSP50 SUMP PUMP. PROVIDE ELECTRICAL POWER PER ALL APPLICABLE CODES. CONSTRUCT 1-1/4" DISCHARGE PIPING ENCASED IN G.I.P. TO NEAREST CATCH BASIN OR APPROVED LOCATION. FOR GRAVITY DRAIN: SUMP DRAIN, ZURN Z-551, THREADED, WITH ZURN Z-1099 BACKWATER VALVE, THREADED X NO-HUB, WITH CI.I PIPE TO 12" MIN. BEYOND VAULT WALL AND 4" PVC D3034 SDR35 TO DAYLIGHT OR C.B.
12. ADJUSTABLE PIPING SUPPORT, "STANDON", OR EQUAL, TWO PLACES.



## MATERIAL LIST

1. PRECAST CONCRETE UNDERGROUND VAULT - "UTILITY VAULT COMPANY": 687-LA  
BASE SECTION: 687 WITH SUMP AND GRATE  
MIDDLE SECTION: 687 WITHOUT CHANNELS AND WITH KNOCK-OUTS FOR WATER PIPING ONLY.  
TOP SECTION: 687 WITH CAST-IN-PLACE HATCH RATED TO H2O TRAFFIC LOADING.  
HATCH: HATCH SHALL BE 4'x4' CLEAR OPENING, DOUBLE LEAF WITH H2O TRAFFIC RATING. OFFSET THE HATCH IN THE VAULT LID AS SHOWN TO PROVIDE ACCESS TO THE LADDER. THE HATCH SHALL BE LW PRODUCTS OR EQUAL WITH BILCO "LADDER-UP" SAFETY POST. THE HATCH SHALL DRAIN TO THE SUMP.  
LADDER: HOT DIPPED GALVANIZED BOLT-ON LADDER WITH #6 RUNGS ON 12" CENTERS AND MOUNTING BRACKETS AT TOP, MIDDLE AND BOTTOM. SECURE LADDER TO VAULT WALL WITH OFFSET SUFFICIENT TO PROJECT INTO HATCH CLEAR OPENING.  
PAINTING: THE INTERIOR OF THE CONCRETE VAULT SHALL BE PAINTED AT THE VAULT MANUFACTURER WITH ONE COAT OF STEEL COAT DAMP-TEX NO. 22 PRIMER AND TWO COATS OF STEEL COAT DAMP-TEX DX 110-WHITE. THE EXTERIOR BELOW GRADE SHALL BE PAINTED WITH TWO COATS OF KOPPERS BITUMASTIC BLACK SOLUTION.
2. 2-6" D.I. ADAPTER, FL.x P.E., 4'± LONG
3. 2-6" RESILIENT SEAT GATE VALVE, NRS, FL., O-RING PACKING WITH HANDWHEEL.
4. 6" FLANGED COUPLING ADAPTER, ROMAC FCA 501, OR EQUAL.
5. 6" D.I. ADAPTER, FL.x P.E., 12'± LONG (VERIFY).
6. DISTRICT TO PROVIDE CURRENT SPECIFIED METER AT DEVELOPER'S EXPENSE. SIZE TO BE DETERMINED DURING DESIGN PROCESS WITH DEVELOPER. READ REMOTE TO BE MOUNTED IN VAULT LID BY DEVELOPER.
7. 6" FLANGED STRAINER AS RECOMMENDED AND PROVIDED BY THE METER MANUFACTURER.
8. UNI-FLANGE ADAPTER.
9. 2" x 2" x 1/4" MIN. WALL THICKNESS SQUARE STEEL TUBING, 6' MIN. LENGTH. BOLT TO VAULT WALL IN FOUR PLACES WITH STAINLESS STEEL ANCHOR BOLTS.
10. SUMP PUMP OR GRAVITY DRAIN AS REQUIRED BY SITE CONDITIONS, TO BE DETERMINED BY THE DEVELOPER AND CONTRACTOR AND REVIEWED AND APPROVED BY THE DISTRICT.  
FOR SUMP PUMP: 16" DIAM. x 6" DEEP SUMP WITH HYDROMATIC OSP50 SUMP PUMP. PROVIDE ELECTRICAL POWER PER ALL APPLICABLE CODES. CONSTRUCT 1-1/4" DISCHARGE PIPING ENCASED IN G.I.P. TO NEAREST CATCH BASIN OR APPROVED LOCATION.  
FOR GRAVITY DRAIN: SUMP DRAIN, ZURN Z-551, THREADED, WITH ZURN Z-1099 BACKWATER VALVE, THREADED X NO-HUB, WITH C.I. PIPE TO 12" MIN. BEYOND VAULT WALL AND 4" PVC D3034 SDR35 TO DAYLIGHT OR C.B.
11. ADJUSTABLE PIPING SUPPORT, "STANDON", OR EQUAL, THREE PLACES.

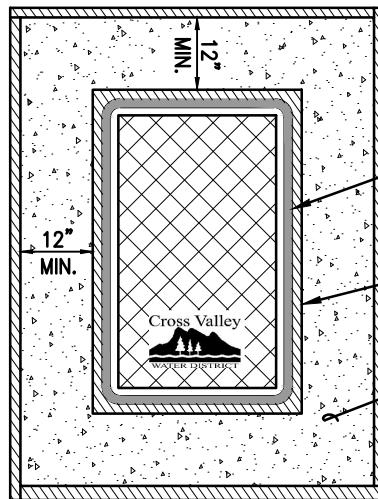
## NOTES

1. PROVIDE SHOP DRAWINGS AND SUBMITTALS FOR ALL MATERIALS AND EQUIPMENT TO THE DISTRICT FOR REVIEW AND APPROVAL PRIOR TO CONSTRUCTION.
2. THE CONTRACTOR IS RESPONSIBLE FOR ELECTRICAL PERMITS AND APPROVALS FOR SUMP PUMP INSTALLATIONS.

SERVICE TYPE AND LOCATION	H10-UNINTENDED TRAFFIC	H20-TRAFFIC RATED	ADA-NON SKID	BOX TYPE	LID TYPE
1-INCH WATER SERVICE METER BOX IN LANDSCAPE OR DRIVEWAY (SEE NOTE 1)	X		X	CARSON HW 1527BCF HDPE W/ 18" BODY OR SIGMA/RAVEN RMB-152718-SW-B	NICOR HDPE W/ BADGER AMR RECESS AND CVWD LOGO
2-INCH WATER SERVICE METER BOX IN LANDSCAPE, BEHIND VERTICAL CURB ONLY				OLD CASTLE / CARSON HDPE 1730MSBC W/ 18" BODY PEDESTRIAN ONLY	OLD CASTLE / CARSON HDPE 1730 HDPE AMR RECESS W/ PLASTIC READER DOOR PEDESTRIAN ONLY
BLOW OFF AND STAND PIPE ASSEMBLY IN SAME BOX		X	X	CARSON HW 1527BCF HDPE W/ 18" BODY OR SIGMA/RAVEN RMB-152718-SW-B	NICOR HDPE W/ BADGER AMR RECESS AND CVWD LOGO

NOTES:

1. DISTRICT APPROVAL IS REQUIRED FOR INSTALLING METER BOXES IN DRIVEWAYS.
2. EQUIVALENT MAY BE CONSIDERED BY THE DISTRICT.



REFER TO DETAIL WD-5 FOR METER BOX AND LID TYPE

CONCRETE MASTIC EXPANSION JOINT ALL SIDES (FULL DEPTH)

FINISHED CONCRETE

12" MIN. ALL SIDES x 6" MIN. THICK REINFORCED CONCRETE OR GREATER TO MATCH DRIVEWAY THICKNESS

REFER TO DETAIL WD-5 FOR LID TYPE

FINISHED CONCRETE

CONCRETE MASTIC EXPANSION JOINT ALL SIDES (FULL DEPTH)

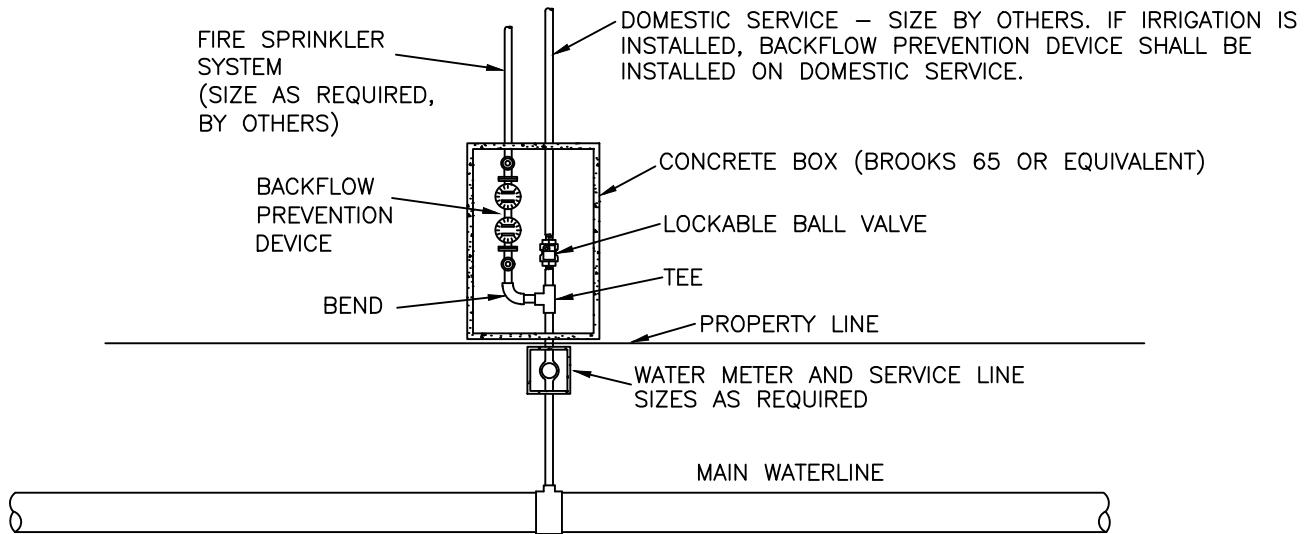
CONCRETE MASTIC EXPANSION JOINT ALL SIDES (FULL DEPTH)

METER BOX  
REFER TO DETAIL WD-5 FOR METER BOX TYPE

#5 REBAR AROUND THE BOX LID

NOTES:

1. DISTRICT APPROVAL IS REQUIRED FOR INSTALLING METER BOXES IN DRIVEWAYS.
2. FOR USE IN CONCRETE DRIVEWAY ONLY.
3. COMPACTED 5/8" MINUS CRUSHED ROCK BASE UNDER BOX FOR SUPPORT REQUIRED.

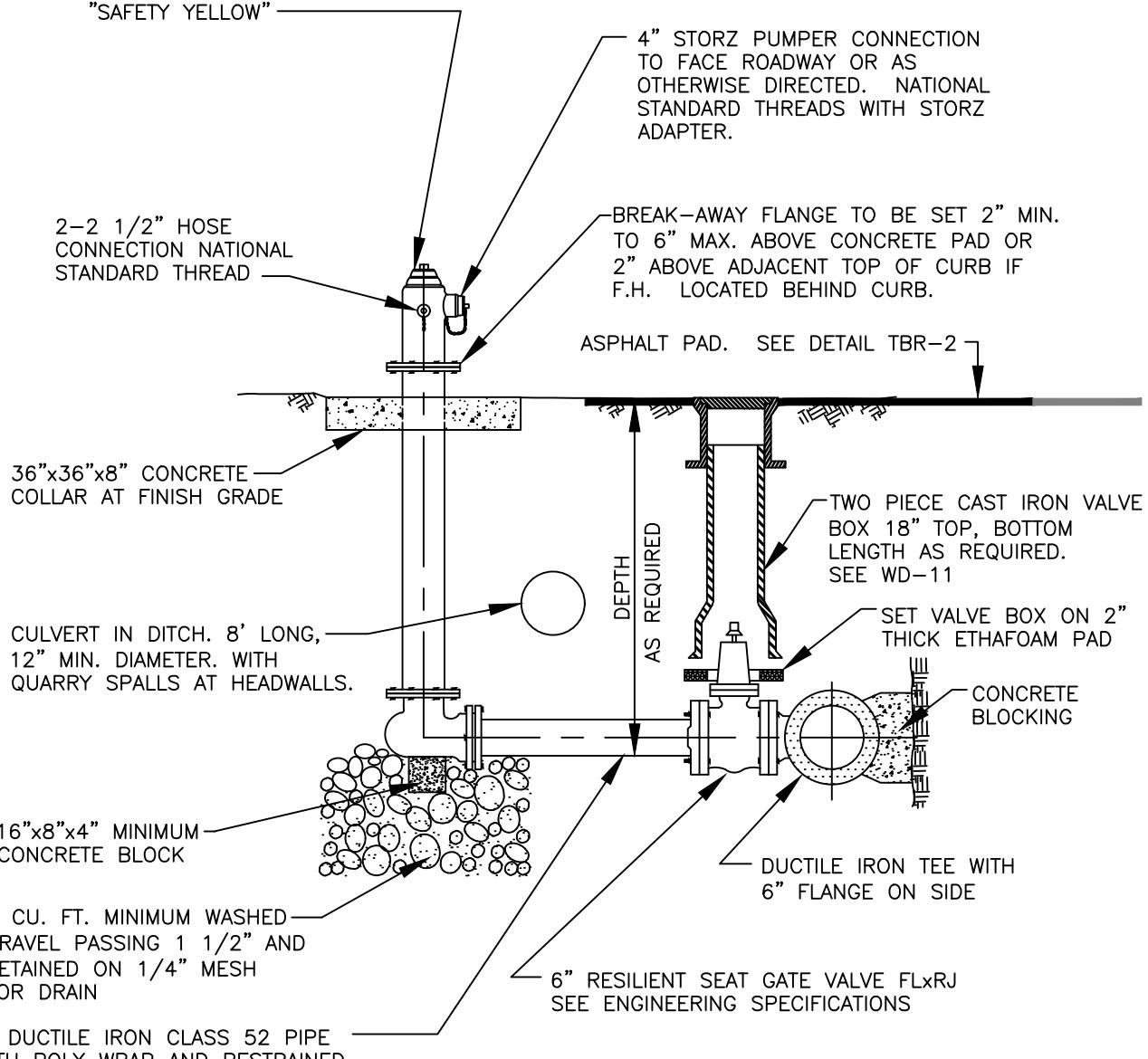


NOTES:

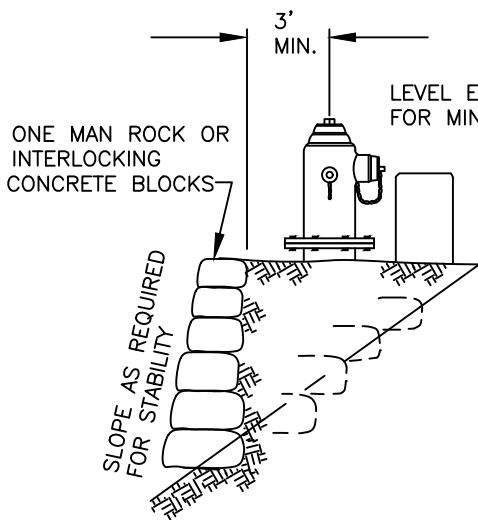
1. WATER METER AND DOMESTIC SERVICE LINE SIZES TO BE APPROVED BY DISTRICT
2. FIRE SPRINKLER PLANS TO BE REVIEWED AND APPROVED BY DISTRICT ENGINEER PRIOR TO UNLOCKING METER
3. INSTALLATION TO BE INSPECTED BY DISTRICT
4. ALL MATERIALS TO BE LEAD FREE
5. IF FLOW-THROUGH SYSTEM IS USED ON FIRE LINE, THEN NO BACKFLOW PREVENTION DEVICE IS REQUIRED. A FIRE SYSTEM PLAN SHALL BE SUBMITTED TO WAIVE THE DEVICE REQUIREMENT.
6. NO CHEMICALS ALLOWED. BACKFLOW DEVICE IS TO BE TESTED AT INSTALLATION AND ANNUALLY THEREAFTER BY WASHINGTON STATE CERTIFIED TESTER. COPY OF TEST REPORT SENT TO WATER DISTRICT.

LIST OF ACCEPTABLE FIRE HYDRANTS:  
 EAST JORDAN WATERMASTER 5CD250 WITH 4" STORZ  
 AMERICAN DARLING B62B HIGH PRESSURE  
 MUELLER SUPER CENTURION 250

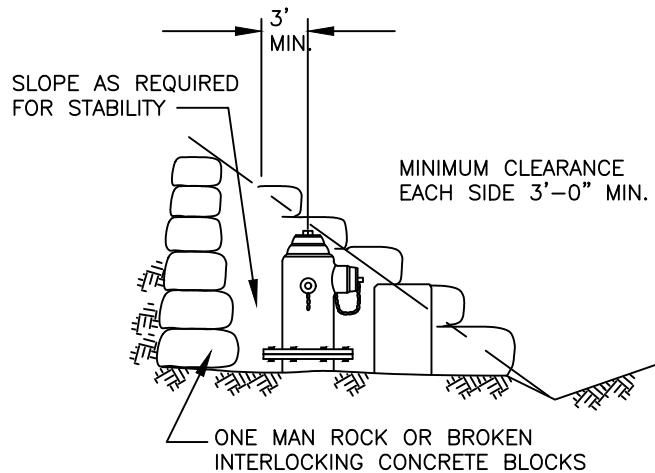
FIRE HYDRANT 5 $\frac{1}{4}$ " MAIN VALVE OPENING  
 1- 4  $\frac{1}{2}$ " PUMPER CONNECTION (NST) WITH 4" STORZ ADAPTER  
 2- 2  $\frac{1}{2}$ " HOSE CONNECTION (NST)  
 1- 6" MECHANICAL JOINT INLET WITH LUGS  
 1- 1  $\frac{1}{4}$ " PENTAGON OPERATING NUT OPENING COUNTERCLOCKWISE.  
 PAINT HYDRANT WITH TWO COATS OF RUST-OLEUM  
 HIGH-PERFORMANCE PROTECTIVE ENAMEL 7543  
 "SAFETY YELLOW"



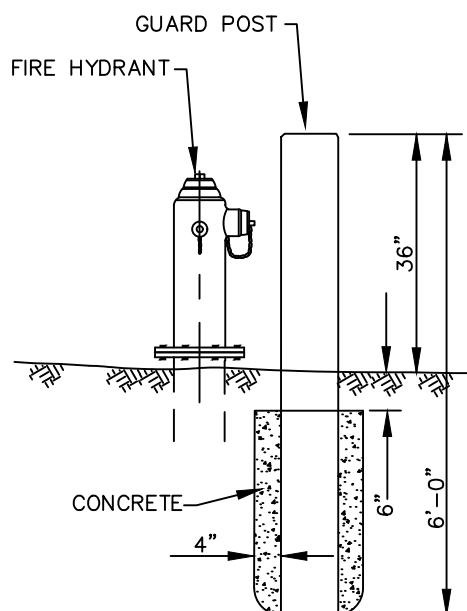
NOTE:  
 HYDRANTS NOT IN SERVICE SHALL BE  
 COVERED WITH BLACK HEAVY DUTY  
 LAWN AND GARDEN BAG, SECURE WITH  
 DUCT TAPE OR ELECTRICAL TAPE



FIRE HYDRANT IN FILL

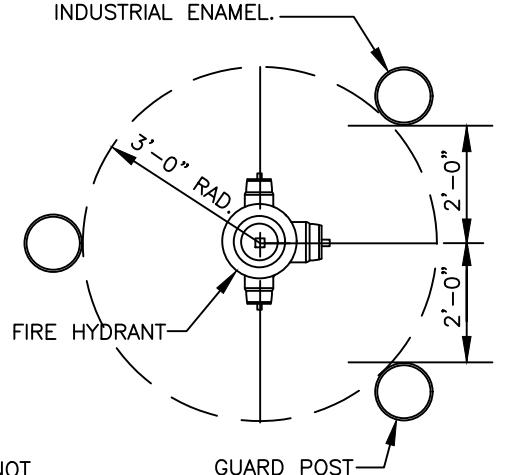


FIRE HYDRANT IN CUT

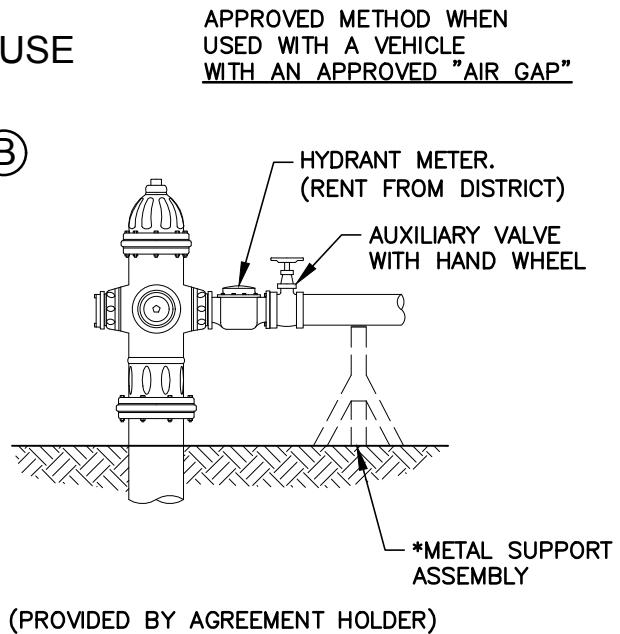
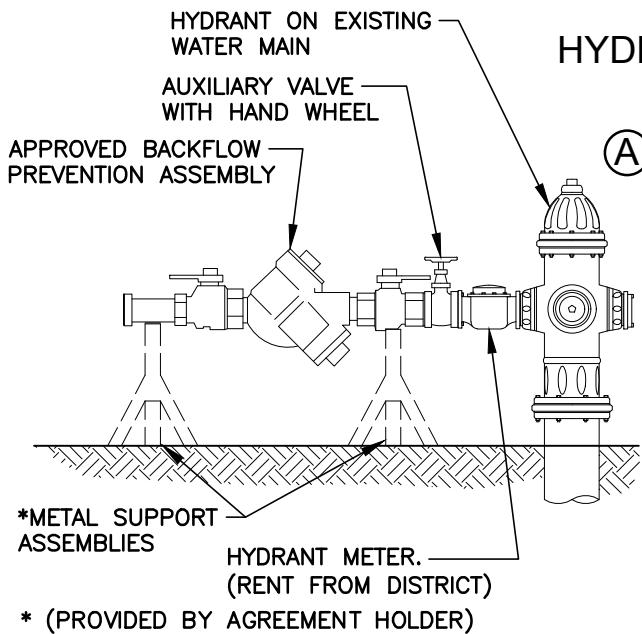


ELEVATION

NOTE:  
IF CONCRETE IS NOT  
SPECIFIED, EARTH  
BACKFILL TO BE  
COMPACTED.

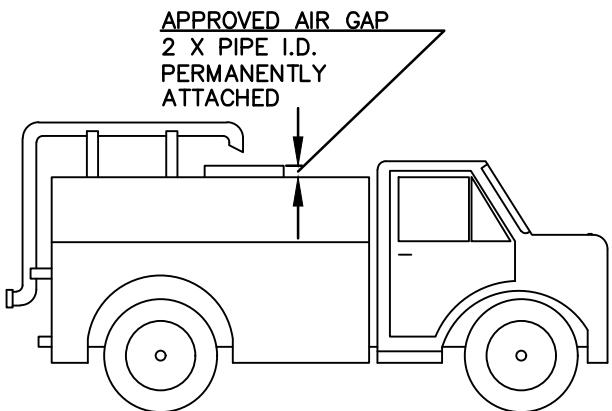


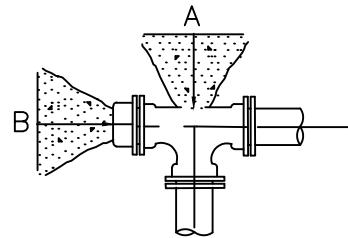
PLAN



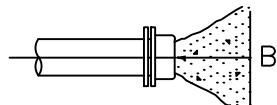
### HYDRANT USE PROCEDURES

1. ALL USERS MUST HAVE A VALID "HYDRANT METER USE AGREEMENT" FROM CROSS VALLEY WATER DISTRICT IN THEIR POSSESSION AND ON FILE. WATER FROM HYDRANTS WITHIN THE DISTRICTS CANNOT BE USED OUTSIDE THE DISTRICT BOUNDARIES.
2. NOTIFY THE DISTRICT AT (360) 668-6766, 2 BUSINESS DAYS BEFORE CONNECTION TO HYDRANT. DISTRICT STAFF SHALL INSTALL AND REMOVE THE METER TO ENSURE THE HYDRANT AND METER OPERATE PROPERLY ON CVWD APPROVED/DESIGNATED HYDRANTS.
3. ALL VEHICLES AND VESSELS ARE SUBJECT TO INSPECTION THE FIRST TIME THE HYDRANT METER IS USED AND ANYTIME THEREAFTER AT THE DISTRICT'S DISCRETION TO DETERMINE IF IT WILL REQUIRE HYDRANT USE TYPE A OR TYPE B.
4. THERE SHALL BE AN ACCEPTABLE WASHINGTON STATE APPROVED "BACKFLOW DEVICE" WHEN REQUIRED. THE BACKFLOW DEVICE MUST HAVE BEEN TESTED WITHIN THE PREVIOUS YEAR BY A CERTIFIED BACKFLOW TESTER. THE DISTRICT SHALL BE FURNISHED WITH A COPY OF THE TESTING REPORT.
5. THE REQUESTOR SHALL PROVIDE SUPPORT UNDER THE METER, BACKFLOW AND VALVE.
6. THE REQUESTOR SHALL NOT MOVE OR REMOVE THE HYDRANT METER OR OPERATE THE HYDRANT.
7. THE REQUESTOR IS RESPONSIBLE FOR ANY AND ALL DAMAGE'S TO THE HYDRANT AND/OR METER, INCLUDING PROVIDING PROTECTION FROM FREEZING AND/OR THEFT.
8. THE WATER USE SHALL BE CONTROLLED EXCLUSIVELY BY THE AUXILIARY VALVE. THE AUXILIARY VALVE SHALL BE OPERATED IN SLOW MANNER TO PREVENT UNDUE EXCESSIVE PRESSURE ON THE WATER SYSTEM.
9. ANY VIOLATION OF ANY OF THE ABOVE SHALL CONSTITUTE TERMINATION OF HYDRANT METER USE AGREEMENT AND USER TO BE SUBJECT TO A FINE, FUTURE RENTALS AND/OR FORFEIT OF DEPOSIT.
10. IF UNABLE TO OPERATE OR CLOSE THE AUXILIARY VALVE PROPERLY, CALL THE DISTRICT IMMEDIATELY FOR ASSISTANCE AT (360) 668-6766
11. SEE CVWD CODE SECTION 6.30 FOR MORE INFORMATION.

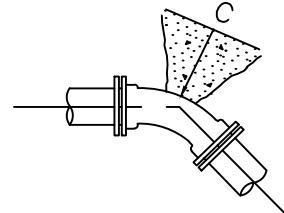




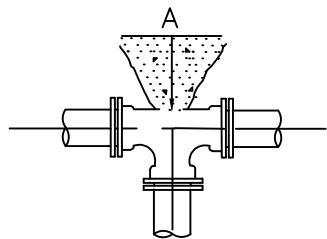
TEE W/ PLUG (MJ OR FL)  
(TEE IN PLACE OF 90° BEND)



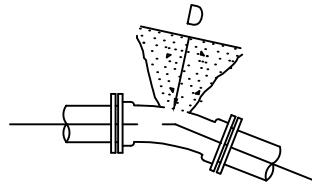
CAP OR PLUG



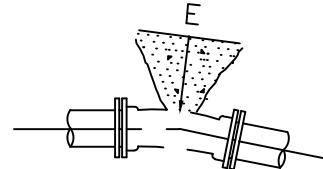
45° BEND



TEE



22 1/2° BEND



11 1/4° BEND

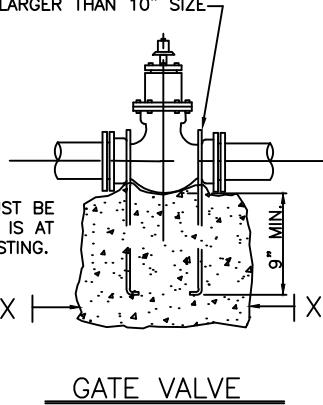
THRUST BLOCK — TABLE							
PIPE SIZE	PRESSURE PSI	MINIMUM BEARING AREA AGAINST UNDISTURBED SOIL SQUARE FEET					
		A	B	C	D	E	X (100PSI)
4"	200	2/(1)	1/(NONE)	1/(NONE)	NONE	NONE	NONE
	300	3/(2)	2/(2)	2/(1)	1/(1)	NONE	NONE
6"	200	4/(3)	3/(2)	3/(1)	1/(1)	1/(NONE)	NONE
	300	6/(4)	4/(3)	3/(2)	2/(1)	1/(NONE)	NONE
8"	200	7/(5)	5/(3)	4/(3)	2/(2)	1/(1)	3/(2)
	300	11/(8)	8/(5)	6/(4)	3/(2)	2/(1)	
10"	200	11/(8)	8/(6)	6/(4)	3/(2)	2/(1)	4/(3)
	275	16/(11)	11/(7)	9/(6)	5/(3)	3/(2)	
12"	200	16/(11)	11/(8)	9/(6)	5/(3)	3/(2)	5/(4)
	250	24/(16)	17/(11)	13/(9)	7/(5)	4/(3)	
14"	200	22/(13)	16/(11)	12/(8)	6/(4)	3/(2)	7/(6)
	250	33/(22)	23/(16)	18/(12)	9/(6)	5/(3)	
16"	200	29/(19)	21/(14)	16/(11)	8/(6)	5/(3)	10/(7)
	225	32/(21)	23/(16)	17/(12)	9/(6)	5/(3)	
18"	200	36/(24)	26/(17)	20/(13)	10/(7)	5/(4)	13/(9)
20"	200	45/(29)	32/(21)	24/(16)	13/(8)	7/(4)	16/(11)
24"	200	64/(43)	46/(30)	35/(23)	18/(12)	9/(6)	23/(16)

NOTES:

1. SQUARE FEET OF CONCRETE THRUST — BLOCK AREA BASED ON SAFE BEARING LOAD OF 2000/(3000) POUND PER SQUARE FEET.
2. AREAS MUST BE ADJUSTED FOR OTHER SIZE PIPE, PRESSURE & SOIL CONDITIONS.
3. CONCRETE BLOCKING SHALL BE CAST IN PLACE & HAVE MINIMUM OF 1/4 SQUARE FOOT BEARING AGAINST THE FITTING.
4. BLOCK SHALL BEAR AGAINST FITTINGS ONLY & SHALL BE CLEAR OF JOINTS TO PERMIT TAKING UP OR DISMANTLING JOINT.
5. CONTRACTOR SHALL INSTALL BLOCKING ADEQUATE TO WITHSTAND FULL TEST PRESSURE AS WELL AS TO CONTINUOUSLY WITHSTAND OPERATING PRESSURE UNDER ALL CONDITIONS OF SERVICE.

2 - 1/2" Ø S.S. RODS FOR 10" SIZE AND SMALLER  
2 - 1" Ø S.S. RODS FOR LARGER THAN 10" SIZE

NOTE:  
ADDITIONAL BLOCKING MUST BE PROVIDED IF GATE VALVE IS AT END OF LINE DURING TESTING.



GATE VALVE

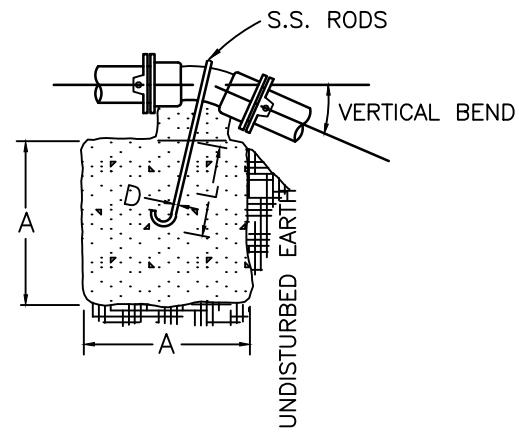
SAFE BEARING LOADS IN LB./SQ. FT.

THE SAFE BEARING LOADS GIVEN IN THE FOLLOWING TABLE ARE FOR HORIZONTAL THRUSTS WHEN THE DEPTH OF COVER OVER THE PIPE EXCEEDS 2 FEET.

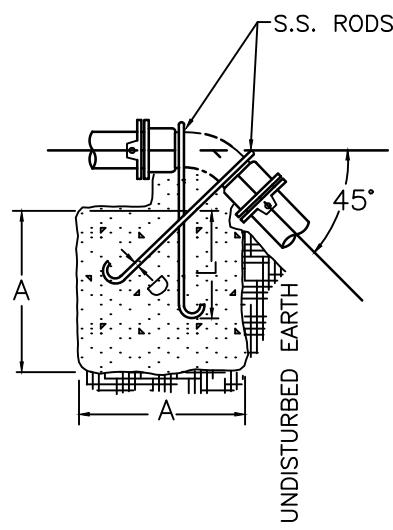
SOIL	SAFE BEARING LOAD LB. PER SQ. FT.
*MUCK, PEAT, ETC.	0
SOFT CLAY	1,000
SAND	2,000
SAND AND GRAVEL	3,000
SAND AND GRAVEL CEMENTED WITH CLAY	4,000
HARD SHALE	10,000

\*IN MUCK OR PEAT, ALL THRUSTS SHALL BE RESTRAINED BY PILES OR TIE RODS TO SOLID FOUNDATIONS OR BY REMOVAL OF MUCK OR PEAT AND REPLACEMENT WITH BALLAST OF SUFFICIENT STABILITY TO RESIST THRUSTS.

VERTICAL BLOCKING					
PIPE SIZE	VERT.BEND	CU.FT	A	D	L
4"	11-1/4°	8	2.0'	3/4"	1.5'
	22-1/2°	11	2.2'	3/4"	2.0'
	30°	17	2.6'	3/4"	2.0'
	45°	30	3.1'	3/4"	2.0'
6"	11-1/4°	11	2.2'	3/4"	2.0'
	22-1/2°	25	2.9'	3/4"	2.0'
	30°	41	3.5'	3/4"	2.0'
	45°	68	4.1'	3/4"	2.0'
8"	11-1/4°	16	2.5'	3/4"	2.0'
	22-1/2°	47	3.6'	3/4"	2.5'
	30°	70	4.1'	3/4"	2.5'
	45°	123	5.0'	3/4"	2.0'
12"	11-1/4°	32	3.2'	3/4"	2.0'
	22-1/2°	88	4.5'	7/8"	3.0'
	30°	132	5.1'	7/8"	2.5'
	45°	232	6.1'	7/8"	2.5'
16"	11-1/4°	70	4.1'	7/8"	3.0'
	22-1/2°	184	5.7'	1-1/8"	4.0'
	30°	275	6.5'	1-1/4"	4.0'
	45°	478	7.8'	1-1/8"	4.0'
20"	11-1/4°	91	4.5'	7/8"	3.0'
	22-1/2°	225	6.1'	1-1/4"	4.0'
	30°	330	6.9'	1-3/8"	4.5'
	45°	560	8.2'	1-1/4"	4.0'
24"	11-1/4°	128	5.0'	1"	3.5'
	22-1/2°	320	6.8'	1-3/8"	4.5'
	30°	480	7.9'	1-5/8"	5.5'
	45°	820	9.4'	1-3/8"	4.5'



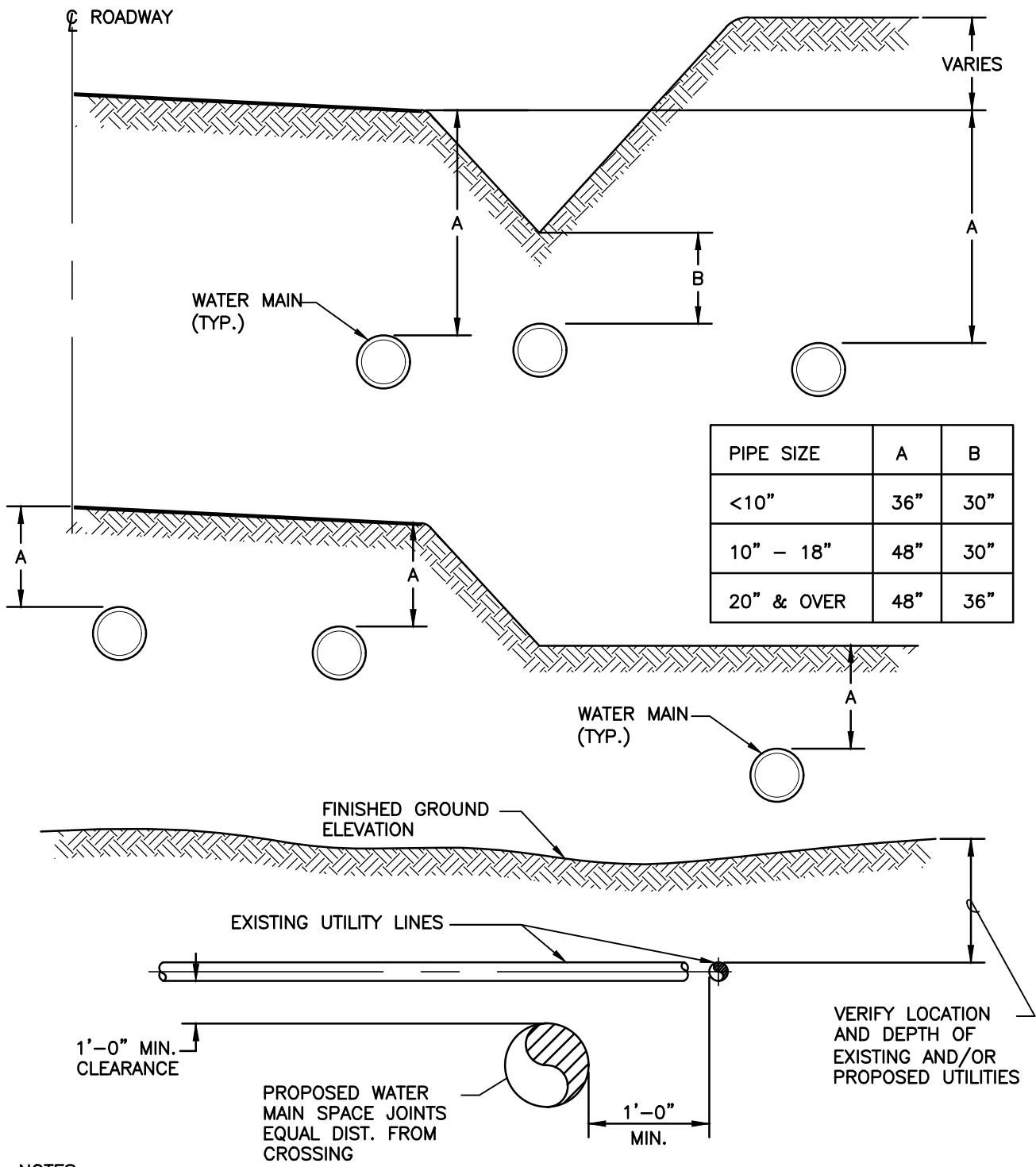
VERTICAL BLOCKING  
FOR 11 1/4°, 22 1/2° & 30° BENDS



VERTICAL BLOCKING  
FOR 45° BENDS

NOTES:

1. CONCRETE BLOCKING IS BASED ON 250 PSI PRESSURE AND 2500 PSI CONCRETE STRENGTH.
2. RODS TO BE 304 STAINLESS STEEL.
3. ALL VERTICAL BENDS SHALL BE INSTALLED WITH RESTRAINED JOINTS ACCORDING TO THE ENGINEERING SPECIFICATIONS.



# PARALLEL CONSTRUCTION

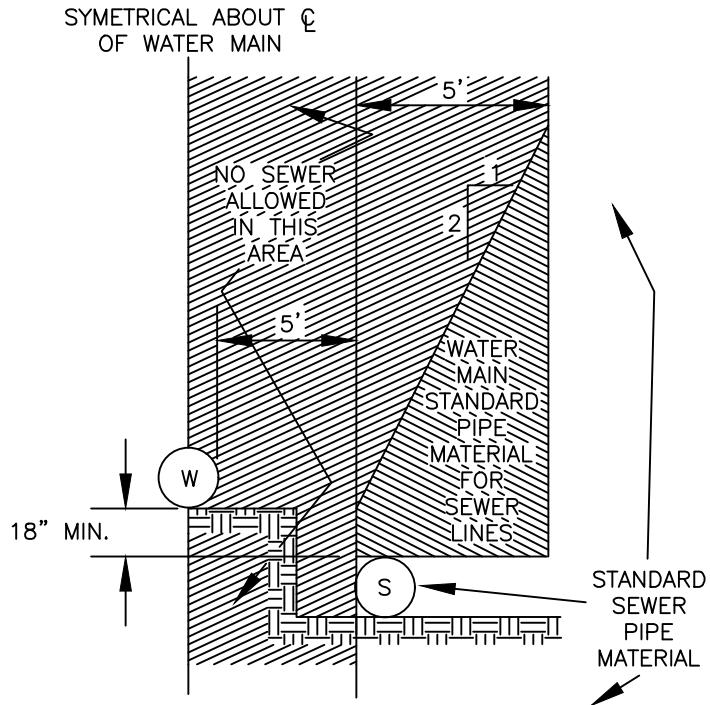


TABLE 1

WATER MAIN STANDARD PIPE MATERIAL

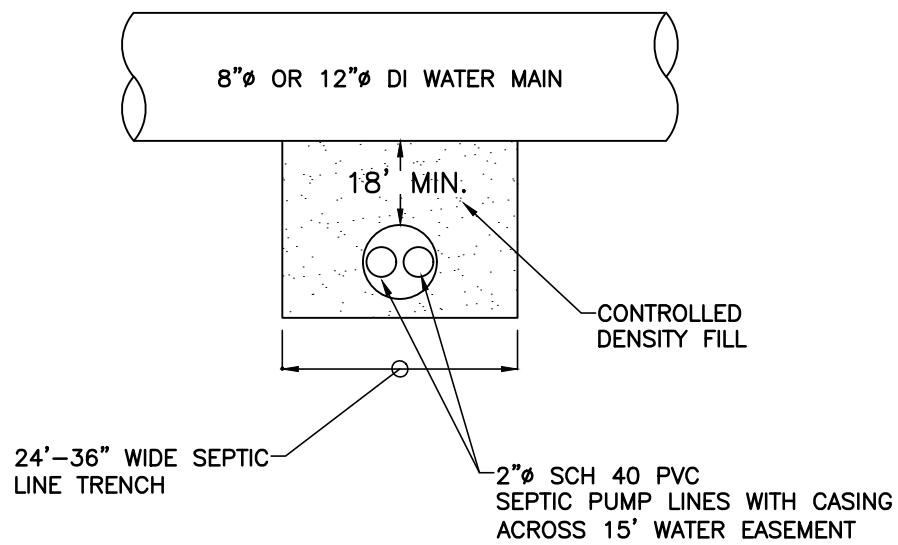
TYPE OF PIPE	AWWA	(ASTM)	STANDARD
	PIPE	JOINT	FITTINGS
DUCTILE IRON	C 151 & C104	C 111	C 153
PVC	C900	D3139	C 111

ALL WATER AND SEWER LINE SEPARATION SHALL MEET DOE STANDARDS

NOTES:

FOR PERPENDICULAR CONSTRUCTION, MAINTAIN 18" VERTICAL SEPARATION OR CONSTRUCT SEWER LINE USING WATER MAIN STANDARDS SET FORTH ABOVE WITH MINIMUM 18 FEET LENGTH CENTERED OVER CROSSING TO MAXIMIZE JOINT SEPARATION.

PRESSURE SEWER PIPES SHALL BE CONSTRUCTED PER WATER MAIN STANDARDS.

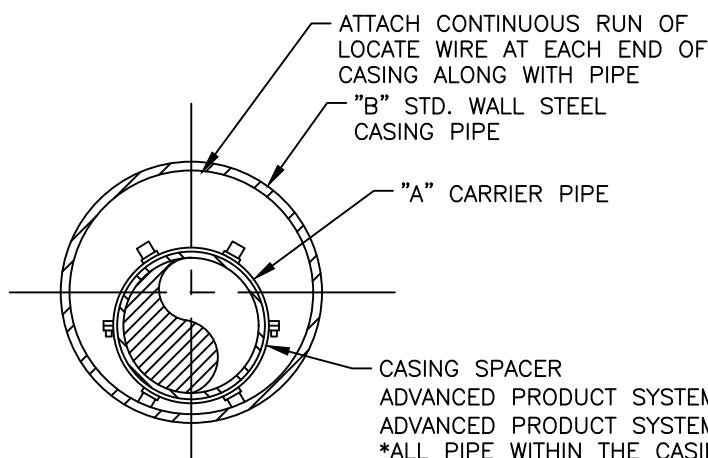


## WATER PIPE SCHEDULE

"A" PIPE SIZES	"B" MIN. CASING SIZES	CASING WALL THICKNESS
6"	12"	.25"
8"	16"	.25"
10"	20"	.344"
12"	24"	.406"
14"	28"	.469"
16"	32"	.50"

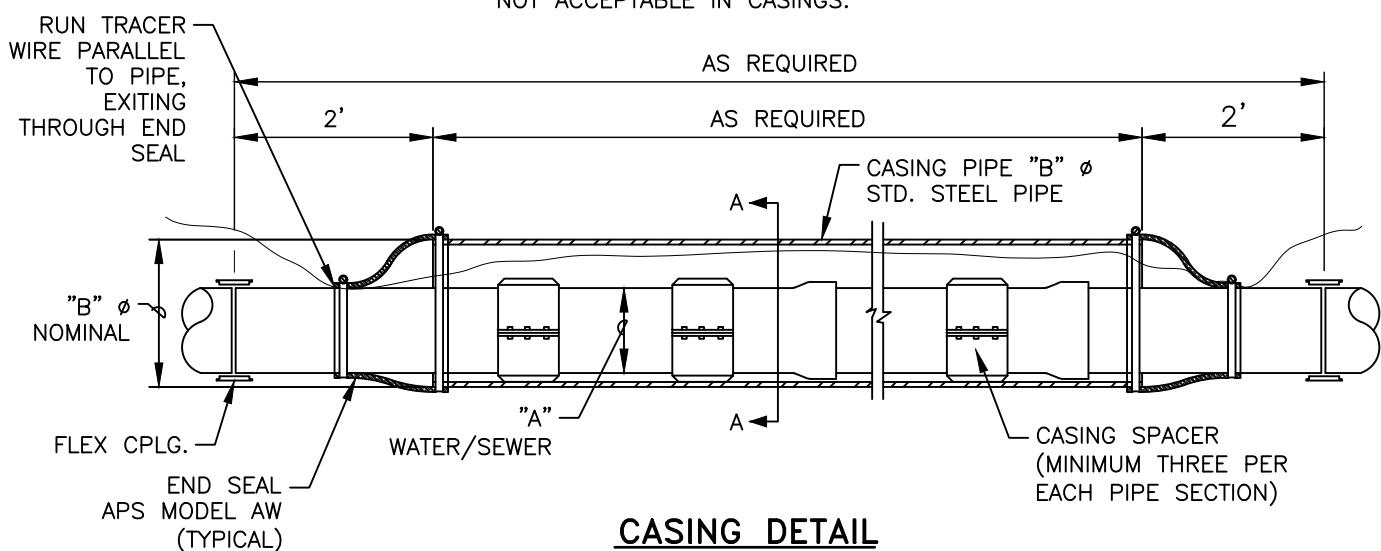
## SEWER PIPE SCHEDULE

"A" PIPE SIZES	"B" MIN. CASING SIZES	CASING WALL THICKNESS
6"	12"	.25"
8"	16"	.25"
10"	18"	.312"
12"	20"	.334"
15"	24"	.406"

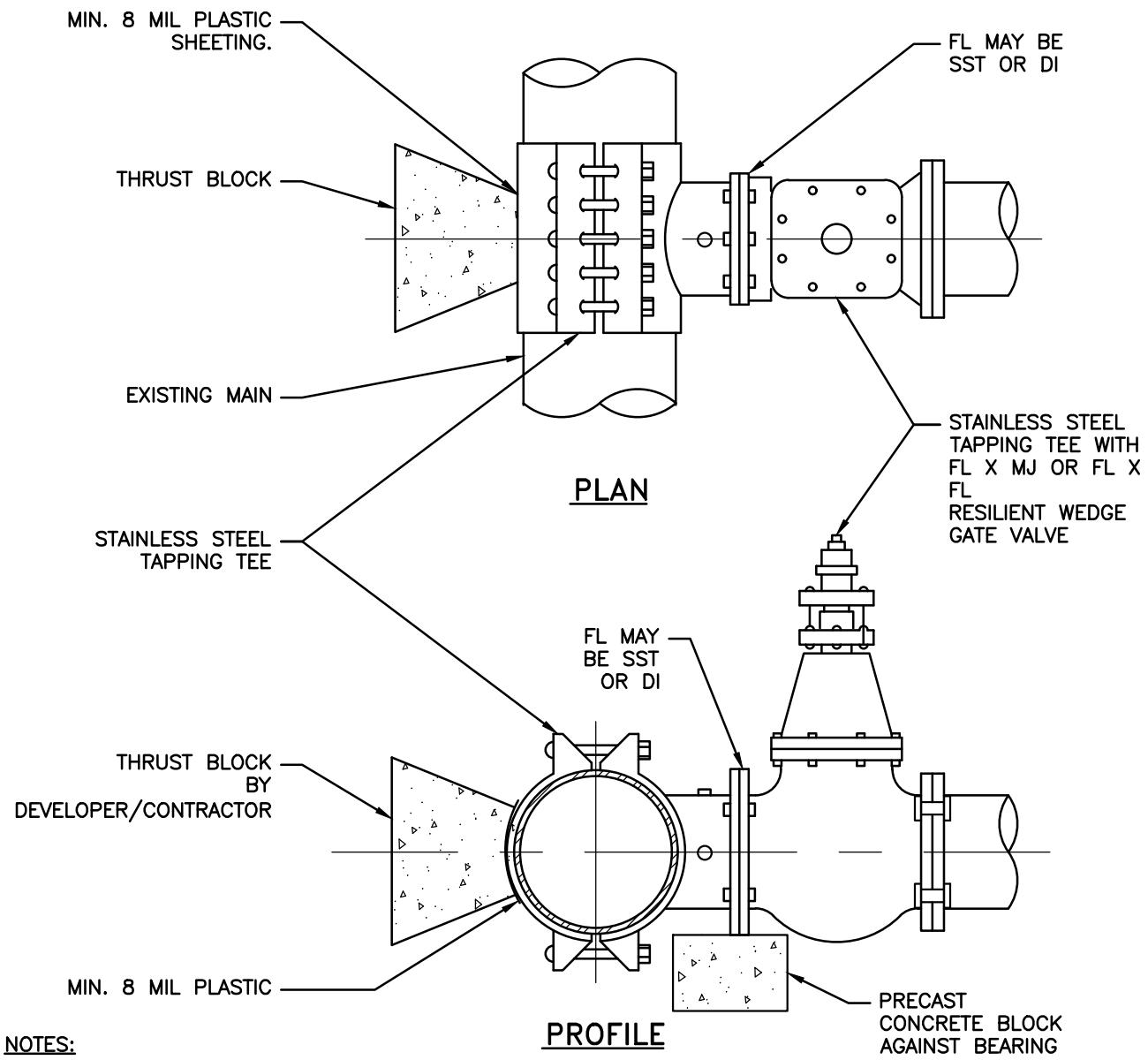


**SECTION A-A**

ATTACH CONTINUOUS RUN OF LOCATE WIRE AT EACH END OF CASING ALONG WITH PIPE  
 "B" STD. WALL STEEL CASING PIPE  
 "A" CARRIER PIPE  
 Casing Spacer  
 ADVANCED PRODUCT SYSTEMS MODEL SSI (D.I. PIPE)  
 ADVANCED PRODUCT SYSTEMS MODEL CI (PVC PIPE)  
 \*ALL PIPE WITHIN THE CASING SHALL BE DI WITH RESTRAINED JOINTS INTEGRAL TO THE PIPE BELL SUCH AS U.S PIPE TR FLEX OR EQUAL. FIELD-LOCK GASKETS AND MJ RESTRAINED GLANDS ARE NOT ACCEPTABLE IN CASINGS.



**CASING DETAIL**



NOTES:

1. STAINLESS STEEL TAPPING TEE SHALL BE ROMAC OR SMITH BLAIR ONLY. O.D. RANGES ARE FOR D.I. PIPE.
 

O.D. RANGES (INCHES)	
6"	6.59-6.99
8"	8.62-9.06
12"	12.90-13.30
16"	17.15-17.55

 FOR LARGER SIZES, CONSULT THE DISTRICT
2. ALL WATER MAIN TAPS SHALL BE BY AN APPROVED DISTRICT TAPPER DURING SUBMITTALS, UNLESS OTHERWISE SPECIFIED.
3. DEVELOPER/CONTRACTOR SHALL PROVIDE ALL REQUIRED EXCAVATION AND RESTORATION.
4. DEVELOPER/CONTRACTOR TO FURNISH ALL MATERIALS AND BLOCKING AND TEST TAPPING TEE AND VALVE PRIOR TO TAPPING THE MAIN.
5. PRELIMINARY EXCAVATION MAY BE REQUIRED TO VERIFY EXISTING PIPE O.D. AND MATERIAL TYPE.
6. CONNECTIONS NOT ALLOWED ON FRIDAYS, HOLIDAYS, DAY BEFORE HOLIDAYS, OR WEEKENDS.

NO.	ITEM	MATERIAL	SIZE	MANUFACTURER NO.	USE
1.	VALVE BOX BOTTOM	C.I.	30"	EJ85556030U	ALL AREAS
2.	VALVE BOX TOP	C.I.	16"	EJ85557016U	NOT IN ADA AREA
3.	VALVE BOX COVER	C.I.	LOGO LID CROSS VALLEY	EJ06800221	ADA AREA COVER (FOR PRIVATE LIDS USE EJIW 6800)

MATCH EXISTING PAVEMENT THICKNESS OR 3" MIN. DEPTH, 1/2" HMA ASPHALT PATCH SEE DETAIL TBR-2.

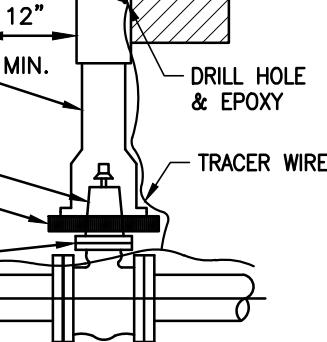
CLEAN AND TACK EDGES WITH SEALER CSS1 AND SEAL JOINTS WITH HOT ASPHALT CEMENT (AR4000W), SAND AFTER SEALANT IS APPLIED.

VALVE BOX CENTERED OVER OPERATING NUT

VALVE

SET VALVE BOX ON ETHAFOAM 2" THICK (TYP)

VALVE SHOWN IS GATE VALVE. USE SAME INSTALLATION FOR BUTTERFLY VALVE



1' EXCESS LOCATE WIRE ABOVE VALVE LID

VALVE BOX AND LID FLUSH WITH GRADE IN ASPHALT AREAS. SEE NOTE A.

FINISHED GRADE

EXISTING ASPHALT

NOTES:

- A. HEAVY DUTY VALVE BOX WITH MIN. 30" LENGTH BASE AND DROP HANDLE COVER.
- B. PAVEMENT RESTORATION IN ACCORDANCE WITH CURRENT SNOHOMISH COUNTY ENGINEERING DESIGN AND DEVELOPMENT STANDARDS.
- C. 24" MIN. (TYP.) IF OPERATING NUT IS MORE THAN 3 FEET BELOW FINISHED GRADE SEE DETAIL WD-11D.
- D. EJIW OR APPROVED EQUAL, MANUFACTURED IN THE U.S.A.

1' EXCESS LOCATE WIRE ABOVE VALVE LID

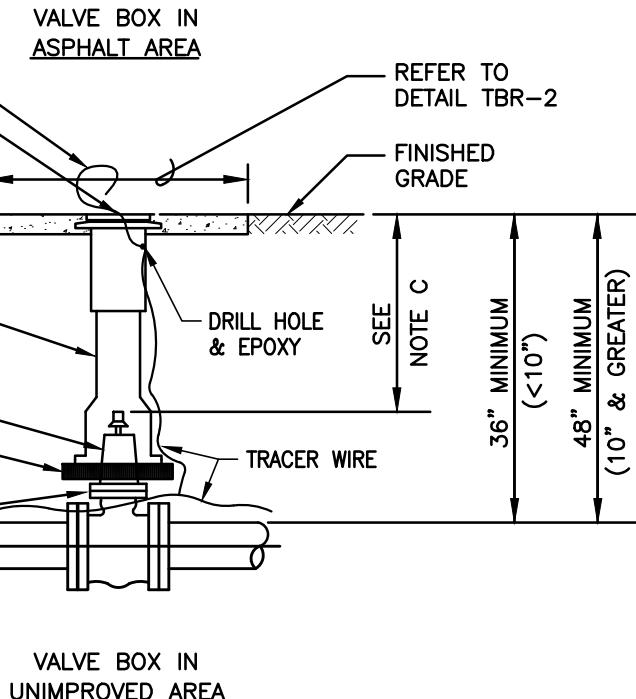
VALVE BOX AND LID (ALIGN LID WITH PIPE DIRECTION)

VALVE BOX CENTERED OVER OPERATING NUT

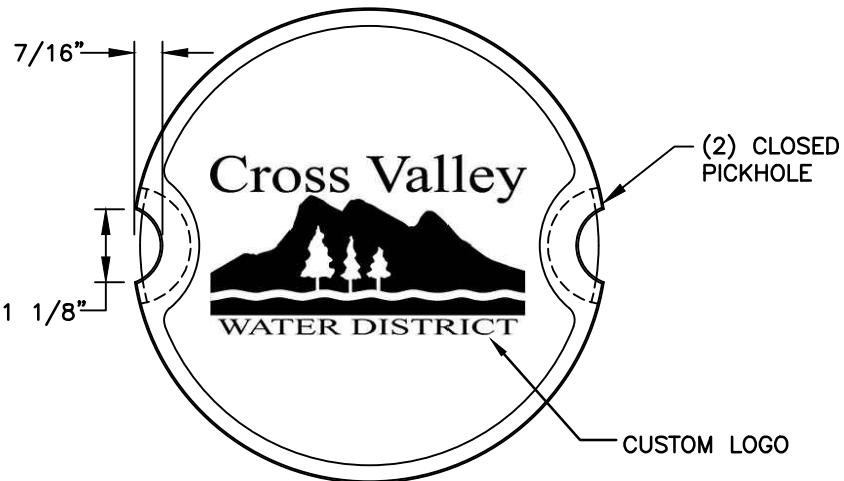
VALVE

SET VALVE BOX ON ETHAFOAM 2" THICK (TYP)

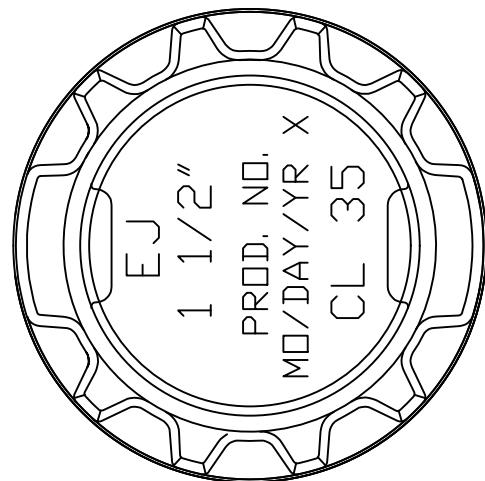
VALVE SHOWN IS GATE VALVE. USE SAME INSTALLATION FOR BUTTERFLY VALVE



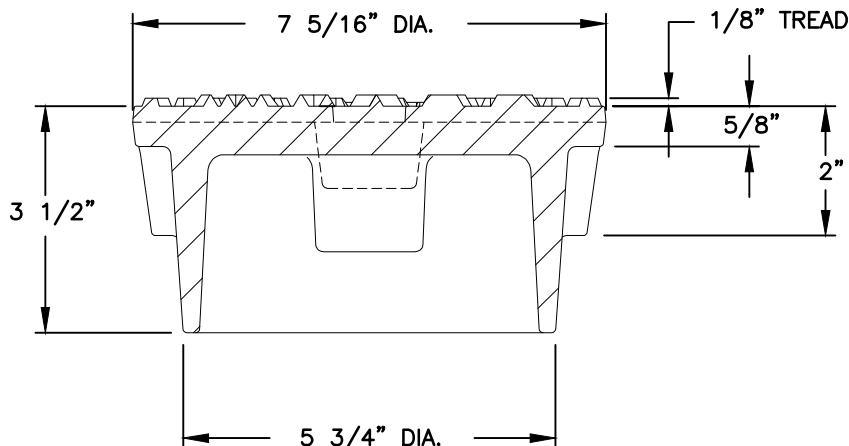
CSS1= CATIONIC SLOW SETTING TYPE 1  
AR4000W= ASPHALT RUBBER TYPE 4000W  
HMA = HOT MIX ASPHALT



PLAN VIEW



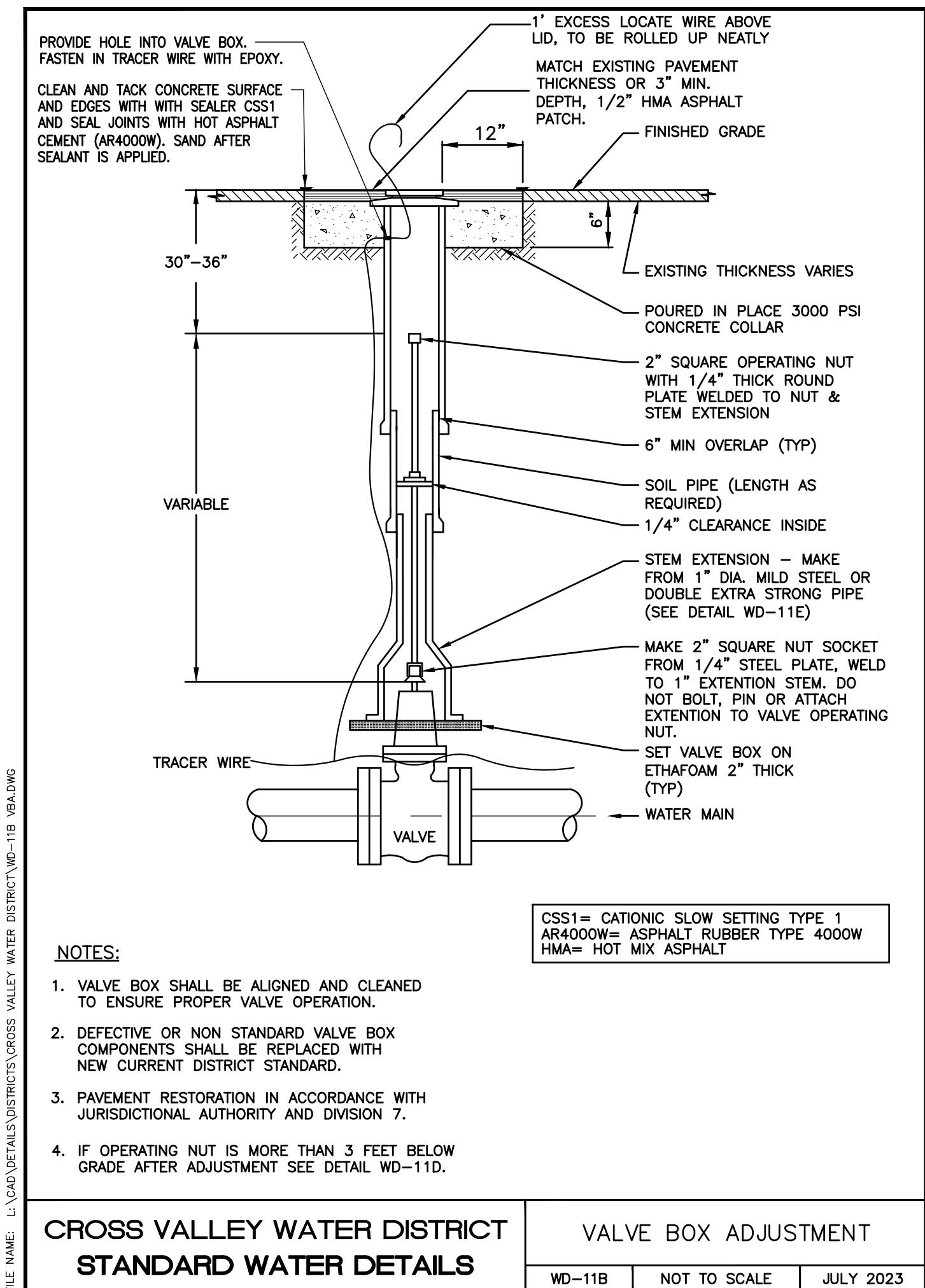
BOTTOM VIEW

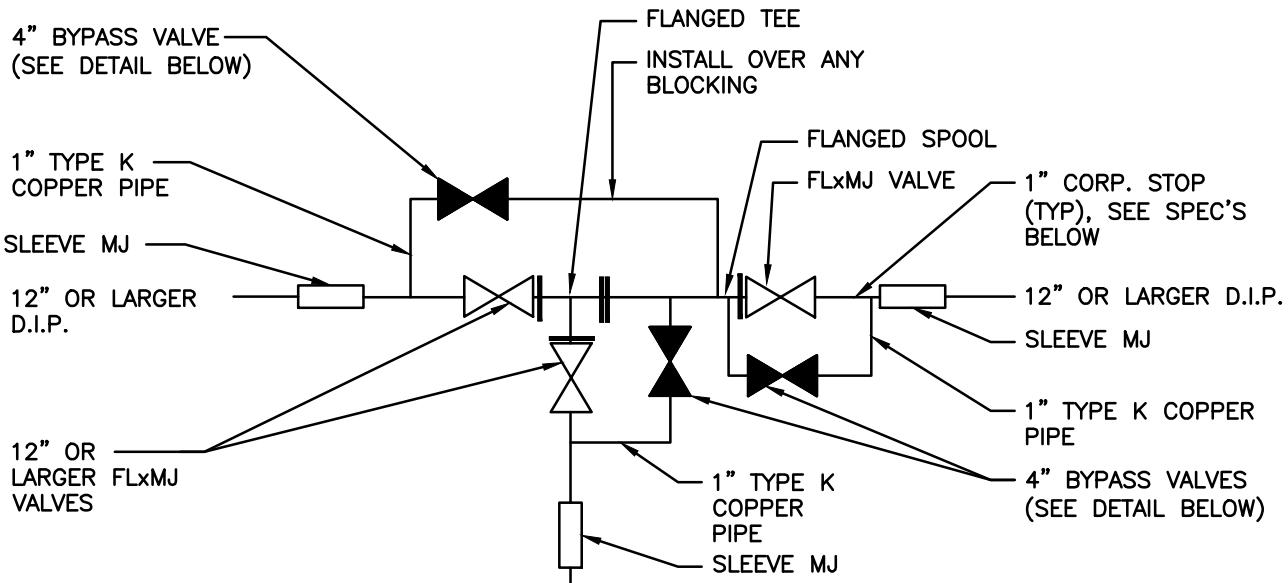


SECTION VIEW

NOTE:

EJIW 6800 TO BE USED  
ON PRIVATE SIDE.





NOTE: BYPASS VALVE SHALL BE USED WHEN STATIC WATER PRESSURE EXCEEDS 150 P.S.I ON WATER MAINS 12" AND LARGER, AS DIRECTED BY THE DISTRICT.

12" OR LARGER D.I.P.

TYPICAL BYPASS VALVE PLACEMENT

HEAVY DUTY CAST-IRON VALVE BOX (SEE WD-11)

SET VALVE BOX ON ETHAFOAM 2" THICK (TYP)

PREBENT 3/4" RE-BAR TIE COATED PLACE NEAR END OF NIPPLE

1" STRAIGHT COPPER TO OUTSIDE I.P. THREAD MUELLER H-15428 OR EQUAL.

1" TYPE K COPPER PIPE

3'x1-1/2"x1" POURED CONCRETE

1' EXCESS LOCATE WIRE ABOVE LID, TO BE ROLLED UP NEATLY

4" R/W GATE VALVE (FLxFL)

4"FL x 2" FIPT COMPANION FLANGE (2 EACH)

2"x8" BRASS NIPPLE (MIPT, 2 REQ'D.)

2"x1" BRASS BELL REDUCER (2 REQ'D.)

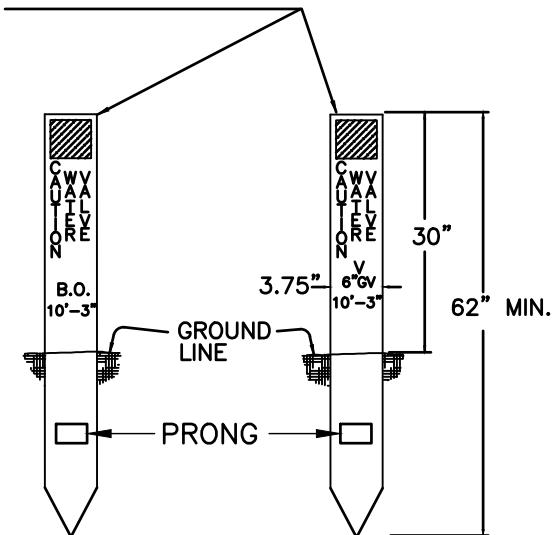
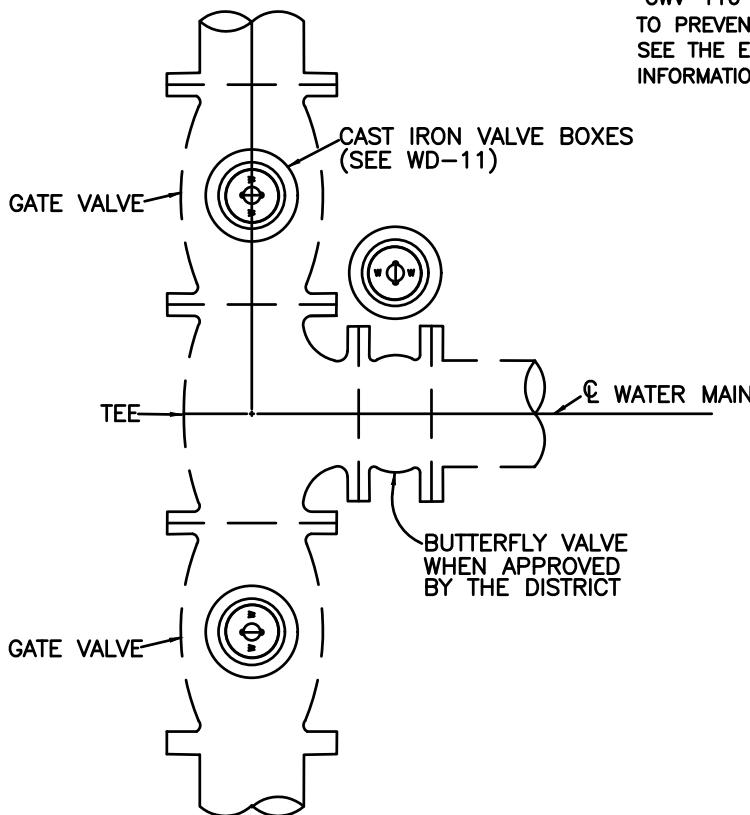
12" MIN

1" CORPORATION STOP\*

FORD	MUELLER
FB-1000-4-Q	B-25008

\*CORP STOP INSTALLED WHEN:  
 -VALVE IS 12" OR LARGER  
 -PRESSURE IS > 150 PSI  
 -DIRECTED BY THE DISTRICT

"CARSONITE CUM-375" OR EQUAL BLUE MARKER WITH 1-1/2" HIGH STENCILED LETTERING, 3" X 3" HI-INTENSITY WHITE REFLECTIVE SHEET, "CWV-116 - CAUTION WATER VALVE" DECAL, AND PRONG AT BASE TO PREVENT PULL-OUT. INSTALL WITH CRM POST DRIVER. SEE THE ENGINEERING SPECIFICATIONS FOR ADDITIONAL INFORMATION.

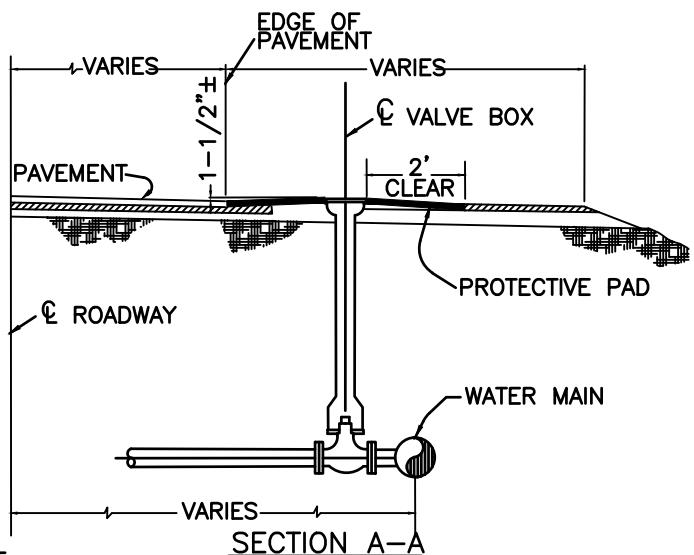
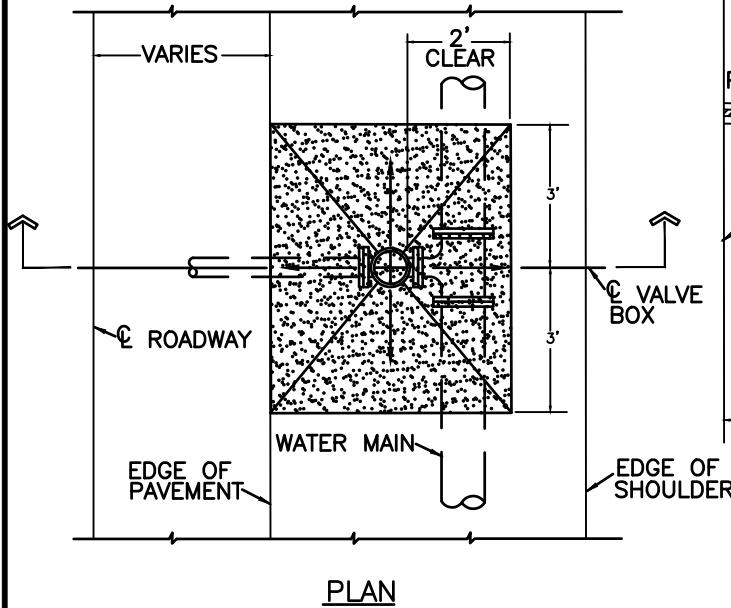


FRONT VIEW  
(FOR BLOW-OFF ASSEMBLY)

FRONT VIEW  
(FOR GATE VALVE)

### VALVE AND BLOW-OFF MARKER

#### VALVE BOX COVER PLACEMENT



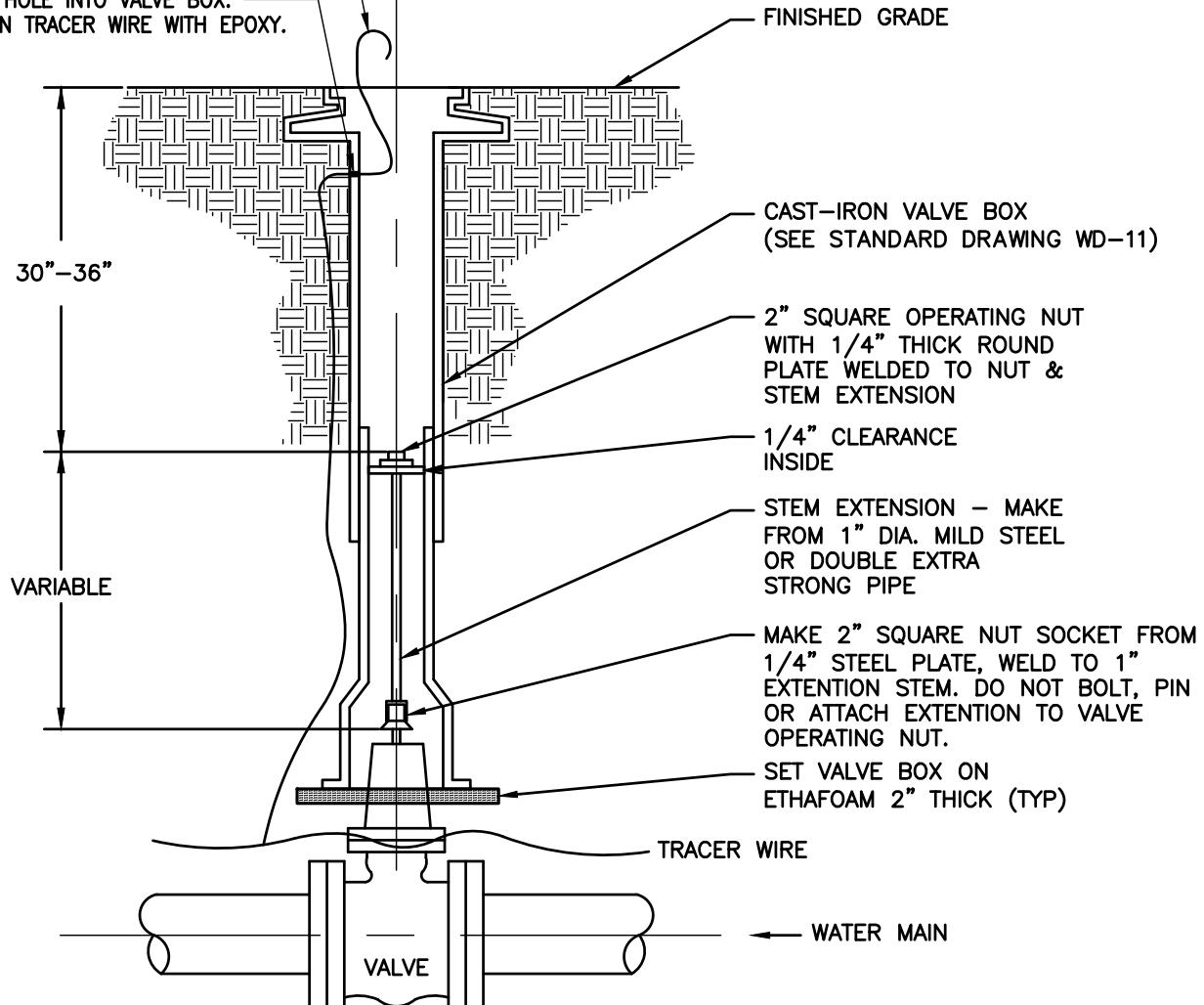
#### NOTES:

1. PROTECTIVE PAD SHALL BE 2" CLASS B ASPHALT CEMENT CONCRETE.
2. TOP EDGE OF PROTECTIVE PAD SHALL MATCH ADJACENT GRADE.

### VALVE BOX PROTECTIVE PAD

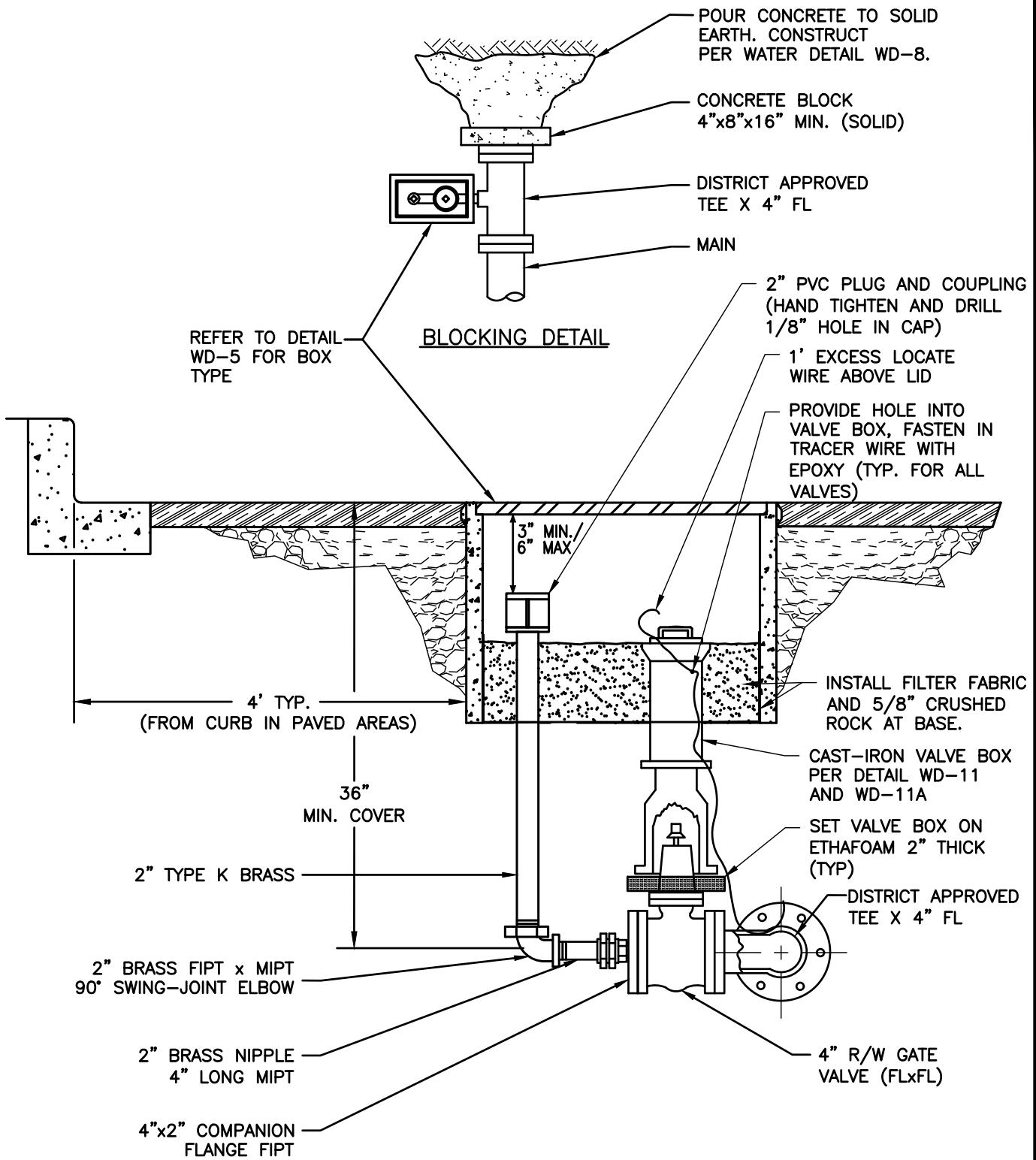
1' EXCESS LOCATE WIRE ABOVE LID,  
TO BE ROLLED UP NEATLY

PROVIDE HOLE INTO VALVE BOX.  
FASTEN IN TRACER WIRE WITH EPOXY.



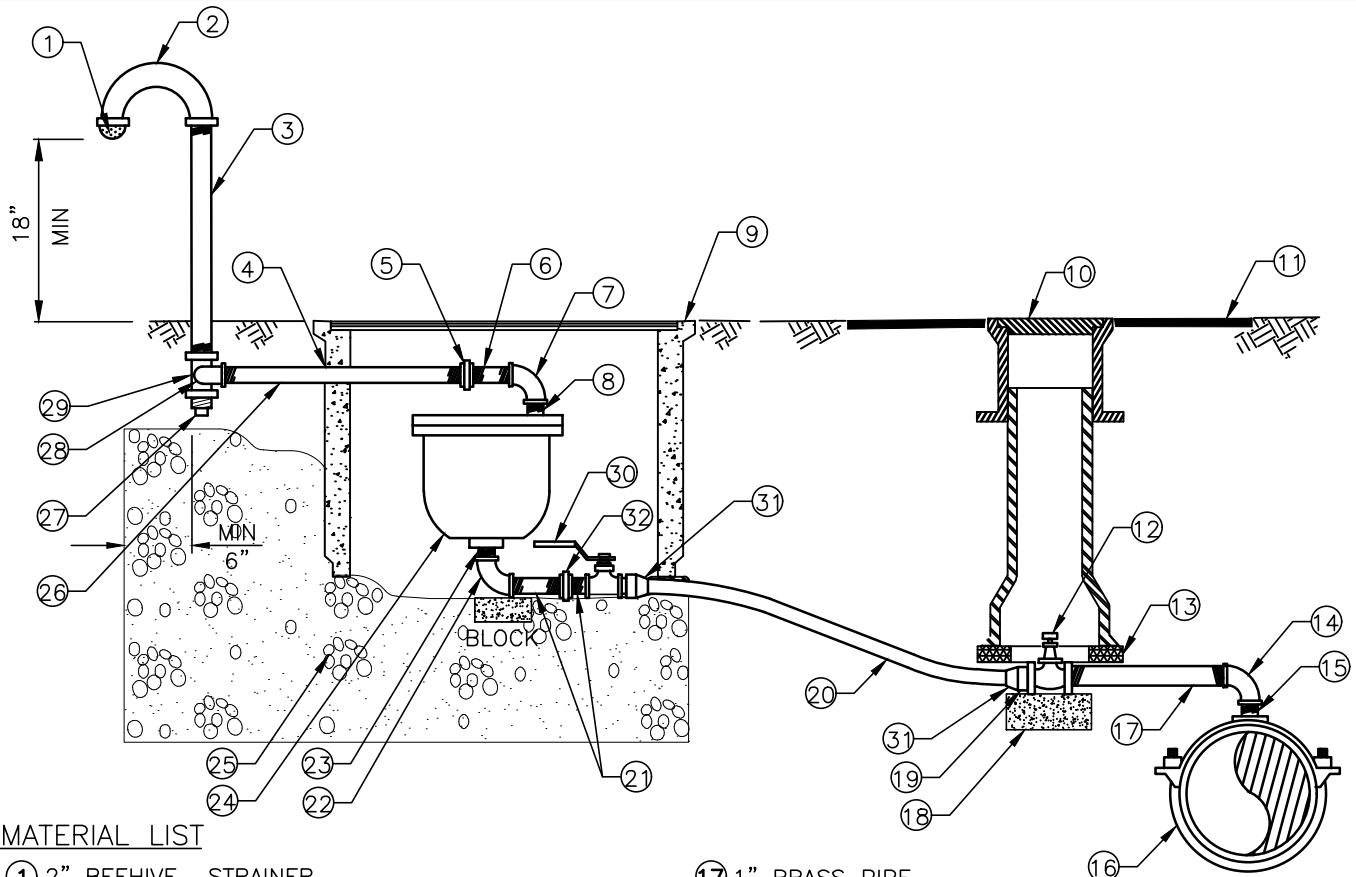
NOTE:

1. MINIMUM LENGTH OF EXTENSION IS 1 FOOT.



NOTES:

1. LOCATE METER BOX AS DIRECTED IN LOCATION APPROVED BY THE DISTRICT.
2. USE SAME STANDARD FOR LOCATIONS IN NON-PAVED AREAS

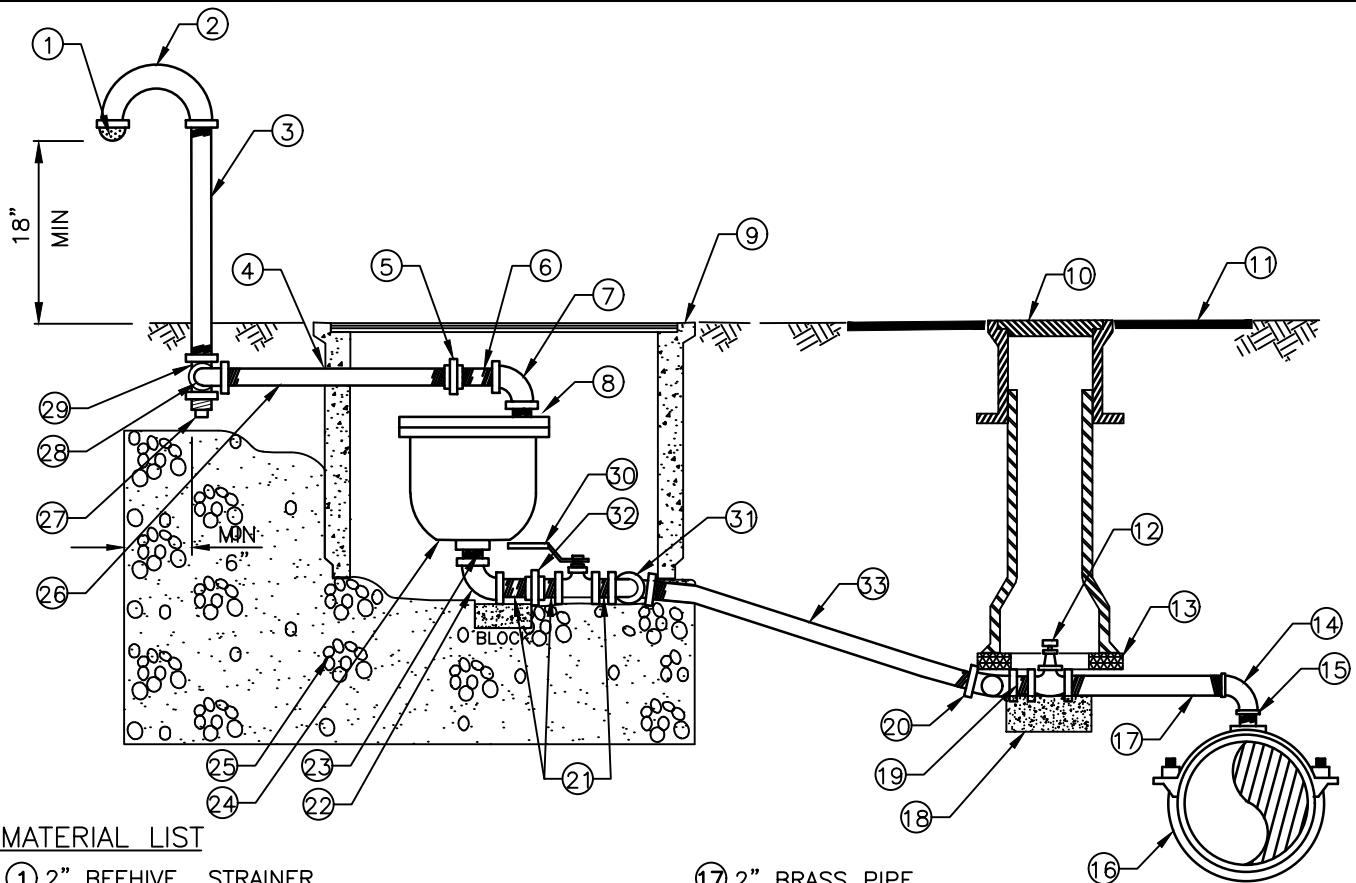


#### MATERIAL LIST

- ① 2" BEEHIVE STRAINER
- ② 2" OPEN PATTERN, RETURN BEND
- ③ 2" GALVANIZED IRON PIPE FIELD LOCATE
- ④ CUT OPENING AS REQUIRED, AFTER INSTALLATION, GROUT AROUND PIPE
- ⑤ 1" BRASS UNION
- ⑥ 1" BRASS NIPPLE
- ⑦ 1"-90° BRASS ELBOW
- ⑧ 1" BRASS CLOSE NIPPLE
- ⑨ METER BOX: CARSON HW 1527BCF HDPE W/18" BODY OR SIGMA/RAVEN RMB-152718-SW-B
- ⑩ TWO PIECE CAST IRON VALVE BOX 18" TOP, BOTTOM LENGTH AS REQUIRED, SEE DETAILS WD-11 AND WD-11A
- ⑪ 2" CLASS B ASPHALT PAD
- ⑫ 2" MUELLER A-2362 RWGV, 2" THREAD ENDS WITH 2" OPERATING NUT
- ⑬ ETHAFOAM PAD UNDER VALVE BOX
- ⑭ 1"-90° BRASS BEND, F.I.P.
- ⑮ 1" BRASS NIPPLE, M.I.P.
- ⑯ DOUBLE STAINLESS STEEL STRAP SERVICE CLAMP WITH 1" IPS TAP TO FIT EQUAL TO ROMAC 101S
- ⑰ 1" BRASS PIPE
- ⑱ 16"x8"x4" BRICK ON COMPAKTED BEDDING GRAVEL
- ⑲ BRASS BUSHING - 2" MIPT X 1" FIPT
- ⑳ 1" TYPE "K" SOFT COPPER TUBING
- ㉑ 1" BRASS PIPE TO FIT
- ㉒ 1"-90° BRASS ELBOW
- ㉓ 1" BRASS CLOSE NIPPLE
- ㉔ 1" AIR & VACUUM VALVE, SCREWED APCO NO. 143C OR EQUAL
- ㉕ WASHED GRAVEL, PASSING 1 1/2" AND RETAINED ON 1/4" MESH
- ㉖ 1" BRASS PIPE TO FIT
- ㉗ 2" BRASS PLUG
- ㉘ 1"-90° BRASS ELBOW
- ㉙ 2"x2"x1" TEE, 1" CLOSE NIPPLE BETWEEN TEE & BEND
- ㉚ 1" BRASS 1/4 TURN BALL VALVE, SCREWED EQUAL TO RED-WHITE VALVE CORP. FIG. NO. 5044F
- ㉛ COUPLING, COPPER TO MALE IRON PIPE - FORD C84-44-Q-NL OR EQUAL
- ㉜ BRASS UNION
- ㉝ BRASS UNION

#### NOTES:

1. AIR AND VACUUM RELEASE VALVE ASSEMBLY SHALL BE INSTALLED AT THE HIGHEST POINT OF LINE. IF HIGH POINT FALLS IN A LOCATION WHERE ASSEMBLY CANNOT BE INSTALLED, PROVIDE ADDITIONAL DEPTH OF LINE TO CREATE HIGH POINT AT A LOCATION WHERE ASSEMBLY CAN BE INSTALLED.
2. THE 2" STANDPIPE ABOVE GROUND SHALL BE COATED WITH TWO COATS OF RUST-OLEUM #7543 "SAFETY YELLOW" INDUSTRIAL ENAMEL.
3. THE 1" BRASS AND COPPER TUBING SHALL BE INSTALLED IN POLYETHYLENE WRAP FOR A MINIMUM OF 3 FEET FROM WATER MAIN.
4. ALL MATERIALS TO BE LEAD FREE.

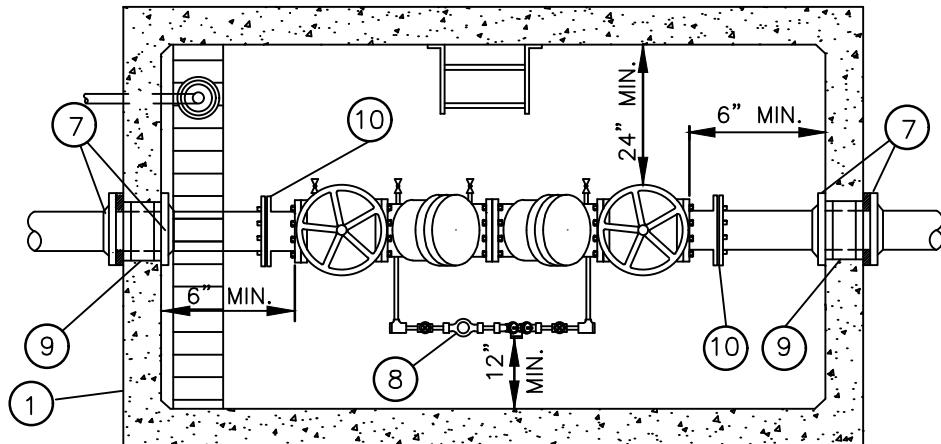


## MATERIAL LIST

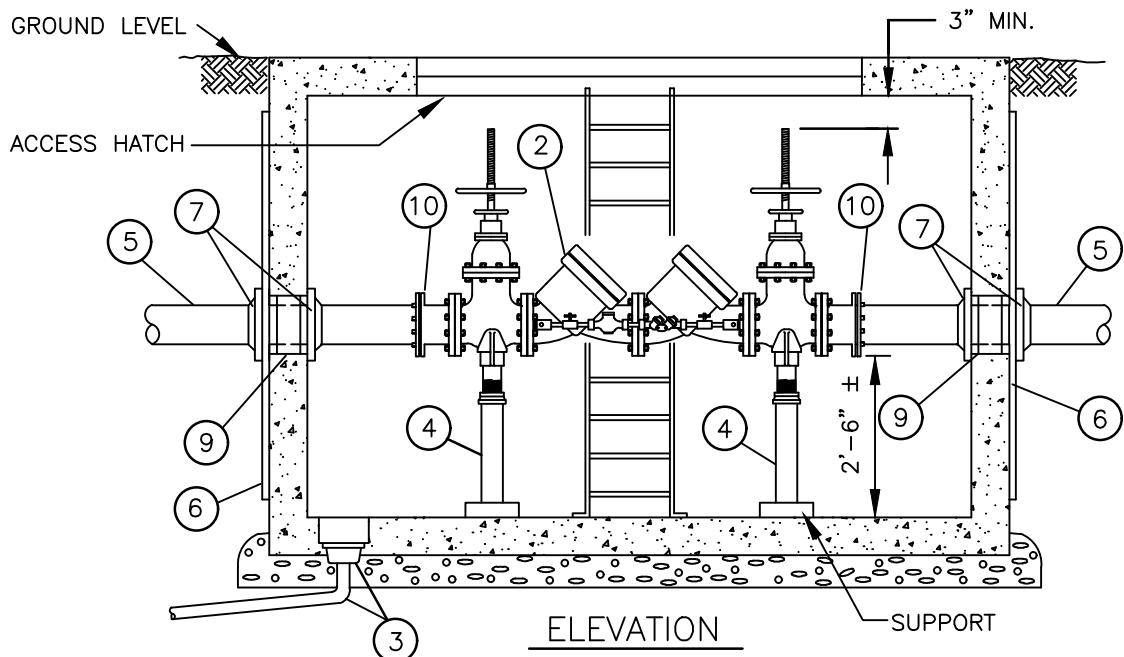
① 2" BEEHIVE STRAINER	⑯	⑯ 2" BRASS PIPE
② 2" OPEN PATTERN, RETURN BEND		⑯ 16"x8"x4" BRICK ON COMPACTED BEDDING GRAVEL
③ 2" GALVANIZED IRON PIPE FIELD LOCATE		⑯ 2" BRASS NIPPLE
④ CUT OPENING AS REQUIRED, AFTER INSTALLATION, GROUT AROUND PIPE		⑯ 2" BRASS SWING-JOINT ELBOW AS REQUIRED
⑤ 2" BRASS UNION		⑯ 2" BRASS PIPE TO FIT
⑥ BRASS SHORT NIPPLE		⑯ 2"-90° BRASS ELBOW
⑦ 2"-90° BRASS ELBOW		⑯ 2" BRASS CLOSE NIPPLE
⑧ 2" BRASS CLOSE NIPPLE		⑯ 2" AIR & VACUUM VALVE, SCREWED APCO NO. 1452C OR EQUAL
⑨ METER BOX: OLDCASTLE/CARSON HDPE 1730MSBC W/18" BODY PEDESTRIAN ONLY		⑯ WASHED GRAVEL, PASSING 1 1/2" AND RETAINED ON 1/4" MESH
⑩ TWO PIECE CAST IRON VALVE BOX 18" TOP, BOTTOM LENGTH AS REQUIRED, SEE DETAILS WD-11 AND WD-11A		⑯ 2" BRASS PIPE TO FIT
⑪ 2" CLASS B ASPHALT PAD		⑯ 2" BRASS PLUG
⑫ 2" MUELLER A-2362 RWGV, THD x THD, WITH 2" OPERATING NUT		⑯ 2"-90° BRASS ELBOW
⑬ ETHAFOAM PAD UNDER VALVE BOX		⑯ 2"x2"x2" TEE WITH CLOSE NIPPLE BETWEEN TEE & BEND
⑭ 2"-90° BRASS BEND		⑯ 2" BRASS 1/4 TURN BALL VALVE, SCREWED EQUAL TO RED-WHITE VALVE CORP. FIG. NO. 5044F
⑮ 2" BRASS NIPPLE, M.I.P.		⑯ 2-2" 90° BRASS BENDS WITH CLOSE NIPPLE BETWEEN BENDS
⑯ DOUBLE STRAP SERVICE STAINLESS STEEL CLAMP WITH 2" IPS TAP TO FIT. EQUAL TO ROMAC 202S		⑯ BRASS UNION
		⑯ 2" BRASS PIPE FOR PIPE LENGTHS UP TO 10 FEET.

#### NOTES:

1. AIR AND VACUUM RELEASE VALVE ASSEMBLY SHALL BE INSTALLED AT THE HIGHEST POINT OF LINE. IF HIGH POINT FALLS IN A LOCATION WHERE ASSEMBLY CANNOT BE INSTALLED, PROVIDE ADDITIONAL DEPTH OF LINE TO CREATE HIGH POINT AT A LOCATION WHERE ASSEMBLY CAN BE INSTALLED.
2. THE 2" STANDPIPE ABOVE GROUND SHALL BE COATED WITH TWO COATS OF RUST-OLEUM #7543 "SAFETY YELLOW" INDUSTRIAL ENAMEL.
3. THE 2" BRASS PIPING SHALL BE INSTALLED IN POLYETHYLENE WRAP FOR A MINIMUM OF 3 FEET FROM WATER MAIN.
4. ALL MATERIALS TO BE LEAD FREE.



PLAN



ELEVATION

DEVICE SIZE	INSIDE VAULT DIMENSIONS(1)	UTIL. VAULT CO. VAULT NO.(2)	BILCO HATCH
3"	6'-6" L x 4'-2" W x 6'-0" H	577-LA	3'-6" X 3'-6" SINGLE LEAF
4"	6'-6" L x 4'-2" W x 6'-0" H	577-LA	3'-6" X 3'-6" SINGLE LEAF
6"	8'-0" L x 6'-0" W x 7'-0" H	687-LA	4'-0" X 6'-0" DOUBLE LEAF
8"	8'-0" L x 6'-0" W x 7'-0" H	687-LA	4'-0" X 6'-0" DOUBLE LEAF

1. MINIMUM INSIDE HEIGHT. ACTUAL HEIGHT MAY VARY AS SITE CONDITIONS DICTATE. PROVIDE ADJUSTING RINGS AS REQUIRED.
2. PROVIDE VAULT WITHOUT CHANNELS AND WITH KNOCK-OUTS (CORE ONLY) FOR WATER PIPING ONLY
3. HATCH SHALL BE CAST-IN-PLACE AND OFFSET IN LID AS REQUIRED TO PROVIDE ACCESS TO LADDER. HATCH SHALL BE H2O TRAFFIC LOADING RATED, SHALL DRAIN TO VAULT SUMP AND SHALL BE BILCO CO. OR APPROVED EQUAL.

\*SEE PAGE 15A FOR MATERIAL LIST AND NOTES.

## **MATERIAL LIST:**

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1. PRECAST CONCRETE UNDERGROUND VAULT – "UTILITY VAULT COMPANY VAULT": SEE TABLE ON PAGE 14 FOR SIZE REQUIREMENTS.

LADDER: HOT DIPPED GALVANIZED BOLT-ON LADDER, #6 REBAR RUNGS ON 12" CENTERS, AND MOUNTING BRACKETS TOP AND BOTTOM. PROVIDE BILCO "LADDER-UP" SAFETY POST.

PAINTING: THE INTERIOR OF THE CONCRETE VAULT SHALL BE PAINTED AT THE VAULT MANUFACTURERS WITH ONE COAT OF STEEL COAT DAMP-TEX NO. 22 PRIMER AND TWO COATS STEEL COAT DAMP-TEX DX 110-WHITE. THE EXTERIOR BELOW GRADE SHALL BE PAINTED WITH TWO COATS OF KOOPERS BITUMASTIC BLACK SOLUTION OR EQUAL.
2. STATE APPROVED DOUBLE CHECK VALVE BACKFLOW PREVENTION ASSEMBLY.

EPOXY COATED CAST IRON MAINLINE CASE.  
STAINLESS STEEL SPRINGS.  
BRONZE AND STAINLESS STEEL WORKING PARTS.  
CENTER ASSEMBLY IN VAULT LONGITUDINALLY.
3. SUMP PUMP OR GRAVITY DRAIN AS REQUIRED BY SITE CONDITIONS, TO BE DETERMINED BY THE DEVELOPER AND CONTRACTOR AND REVIEWED AND APPROVED BY THE DISTRICT.

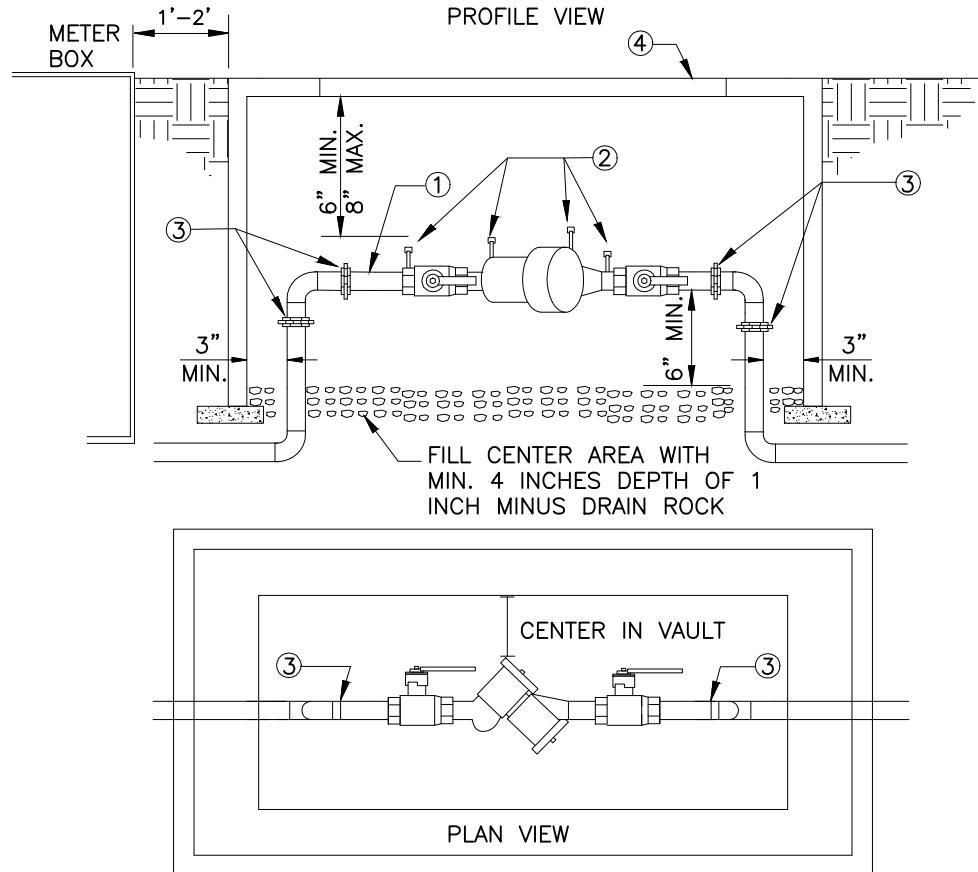
FOR SUMP PUMP: 16" DIAM. x 6" DEEP SUMP WITH HYDROMATIC OSP50 SUMP PUMP.  
PROVIDE ELECTRICAL POWER PER ALL APPLICABLE CODES. CONSTRUCT 1-1/4" DISCHARGE PIPING ENCASED IN G.I.P. TO NEAREST CATCH BASIN OR APPROVED LOCATION.

FOR GRAVITY DRAIN: SUMP DRAIN, ZURN Z-551, THREADED, WITH ZURN Z-1099 BACKWATER VALVE, THREADED X NO-HUB. 4" C.I. PIPE TO 12" MIN. BEYOND VAULT EXTERIOR WALL. 4" PVC D3034 SDR35, TO DAYLIGHT OR CATCH BASIN AS REQUIRED.
4. ADJUSTABLE STEEL PIPE PIPING SUPPORTS. "STANDON", FROM MATERIAL RESOURCE, HILLSBORO, OREGON, OR EQUAL.
5. DUCTILE IRON PIPE, CLASS 53 CEMENT LINED, FL.x P.E., 4'± LONG.
6. 2"x2"x1/4" MIN. WALL THICKNESS SQUARE STEEL TUBE, 6' MIN. LENGTH, SECURED TO VAULT WALL IN FOUR PLACES WITH STAINLESS STEEL ANCHOR BOLTS.
7. UNI-FLANGE ADAPTER.
8. DISTRICT WILL PROVIDE BADGER MODEL 25, HR-E, 1 CF, 5/8" METER WITH BEACON CELLULAR TRANSMITTER, AND WILL BILL OWNER. CONTRACTOR TO INSTALL METER.
9. LINK SEAL ASSEMBLY
10. ROMAC RESTRAINED FLANGE COUPLING ADAPTER (RFCA)

## **NOTES:**

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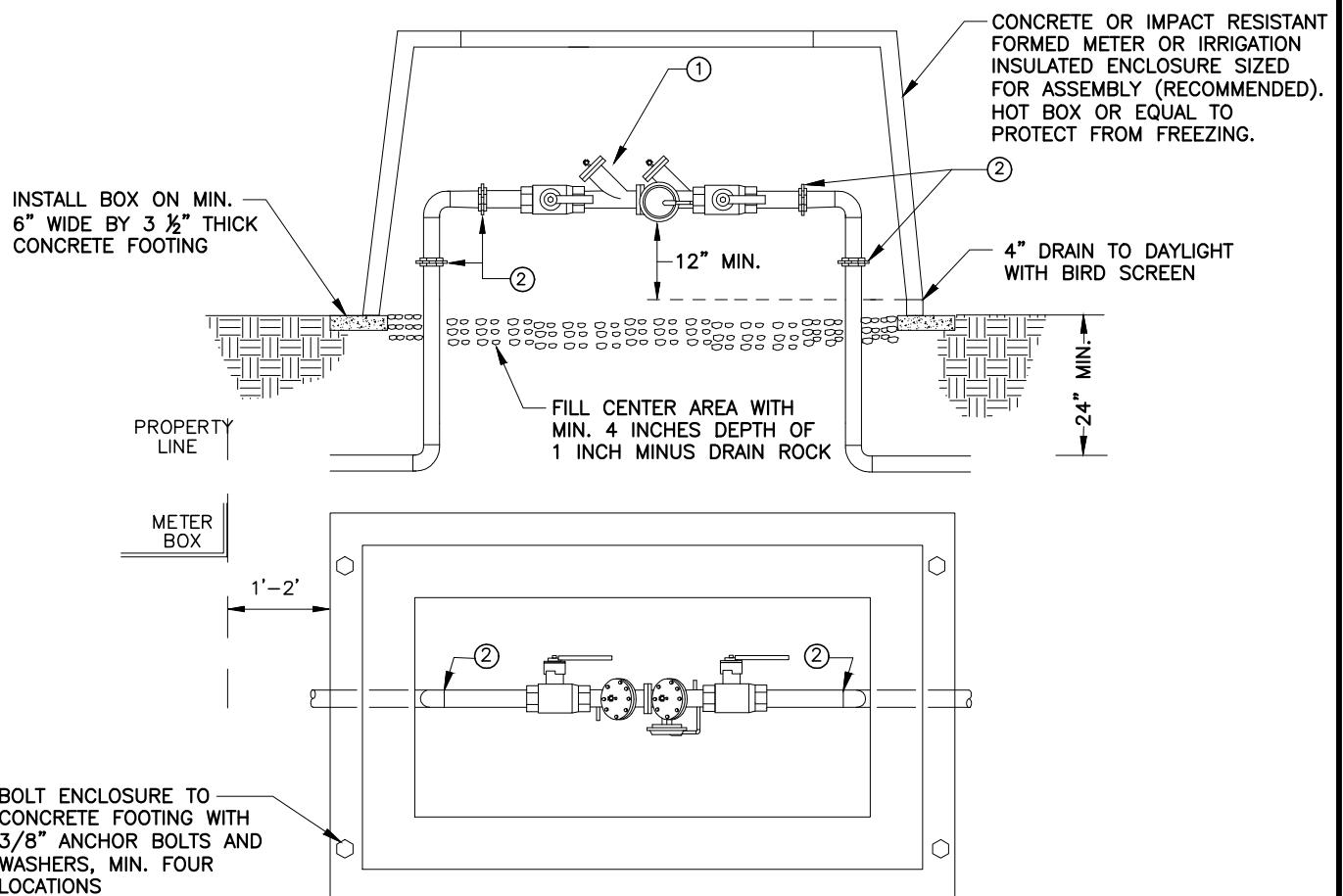
1. PROVIDE SHOP DRAWINGS AND SUBMITTALS FOR ALL MATERIALS AND EQUIPMENT TO CROSS VALLEY WATER DISTRICT FOR REVIEW AND APPROVAL PRIOR TO CONSTRUCTION.
2. SEE PAGE 15 FOR ELEVATION AND PLAN VIEWS.



\* DCVA-BOX SHALL BE LOCATED IMMEDIATELY DOWNSTREAM OF WATER METER BOX PRIOR TO AND BRANCH CONNECTIONS. WITH NO MORE THAN 1'-2' BETWEEN BOXES.

NOTES:

1. PIPING FROM METER TO DCVA SHALL BE COPPER, BRASS, OR POLY TUBING.
2. THE INSTALLER OR DEVELOPER MUST PROVIDE TEST COCK PROTECTION WITH PLUGS, CAPS OR COVERS. TEST COCKS MUST BE POINTED UP.
3. UNIONS MUST BE INSTALLED VERTICALLY OR HORIZONTALLY. DIELECTRIC UNIONS MUST BE USED TO SEPARATE DISSIMILAR MATERIALS.
4. PERMANENT ASSEMBLY SHALL BE INSTALLED BELOW GROUND WITH LID ADJUSTED TO FINISHED GRADE AND IN AN APPROVED BOX LARGE ENOUGH TO ACCOMMODATE BACKFLOW INSTALLATION AS ILLUSTRATED AND LARGE ENOUGH TO ACCESS, TEST AND MAINTAIN ASSEMBLY.
5. BACKFLOW ASSEMBLIES MUST BE SELECTED FROM WASHINGTON STATE DEPARTMENT OF HEALTH LIST OF BACKFLOW ASSEMBLIES APPROVED FOR INSTALLATION IN WASHINGTON STATE.
6. AFTER INSTALLATION OF THE BACKFLOW ASSEMBLY, THE DEVELOPER OR INSTALLER WILL CALL THE DISTRICT FOR AN INSPECTION BY A DISTRICT CROSS-CONNECTION CONTROL SPECIALIST.
7. FOLLOWING AN INSPECTION APPROVAL BY THE DISTRICT, THE BACKFLOW ASSEMBLY MUST BE SCHEDULED FOR AN INITIAL TEST BY A WASHINGTON STATE CERTIFIED BACKFLOW ASSEMBLY TESTER. THE INITIAL TEST OF THE BACKFLOW ASSEMBLY MAY BE OBSERVED BY A DISTRICT CROSS-CONNECTION CONTROL SPECIALIST. TEST RESULTS ARE TO BE SUBMITTED TO BSI ONLINE BACKFLOW SOLUTIONS, INC. THE METER MUST BE INSTALLED PRIOR TO THE INITIAL TEST.
8. DCVA MUST BE PURCHASED AND INSTALLED AS A UNIT. NO MODIFICATIONS TO ANY PART OF THE ASSEMBLY ARE ALLOWED.
9. FREEZE PROTECTION IS THE RESPONSIBILITY OF THE OWNER AND SHALL NOT INTERFERE WITH OPERATION OR TESTING OF THE ASSEMBLY.
10. BOX MUST BE LARGE ENOUGH FOR ASSEMBLY, UNIONS AND ALL REQUIRED CLEARANCES.

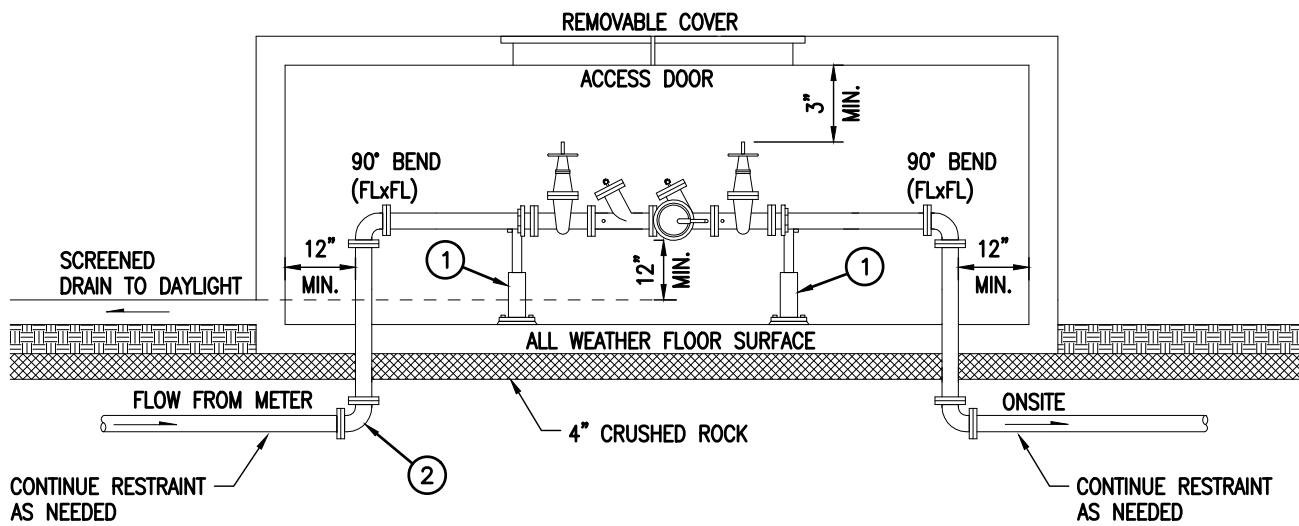
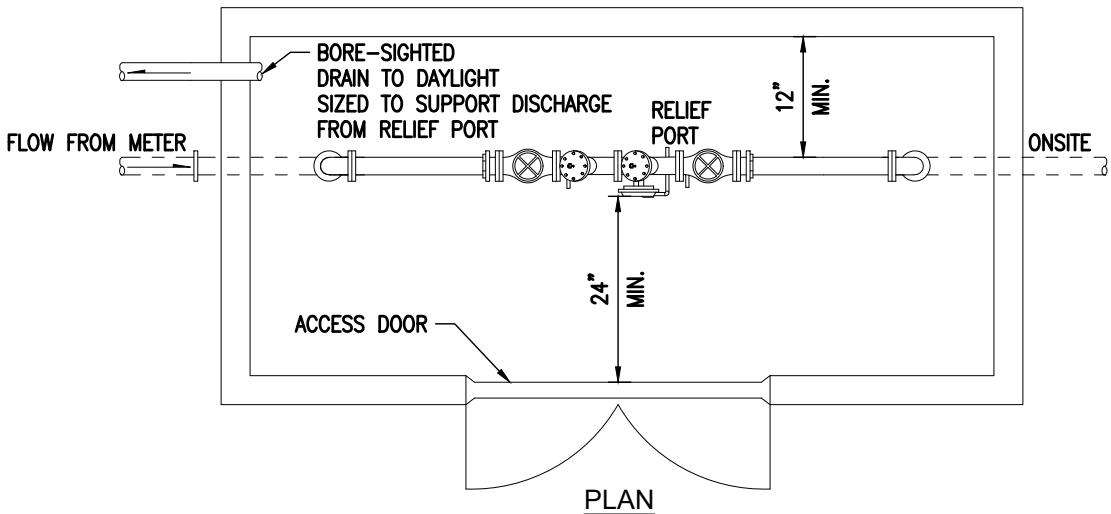


### RPBA ABOVE GROUND INSTALLATION

\* RPBA-ENCLOSURE SHALL BE LOCATED IMMEDIATELY DOWNSREAM OF WATER METER BOX PRIOR TO ANY BRANCH CONNECTIONS, WITH NO MORE THAN 1'-2' BETWEEN BOXES. HOT BOX OR EQUAL FOR FREEZE PROTECTION.

#### NOTES:

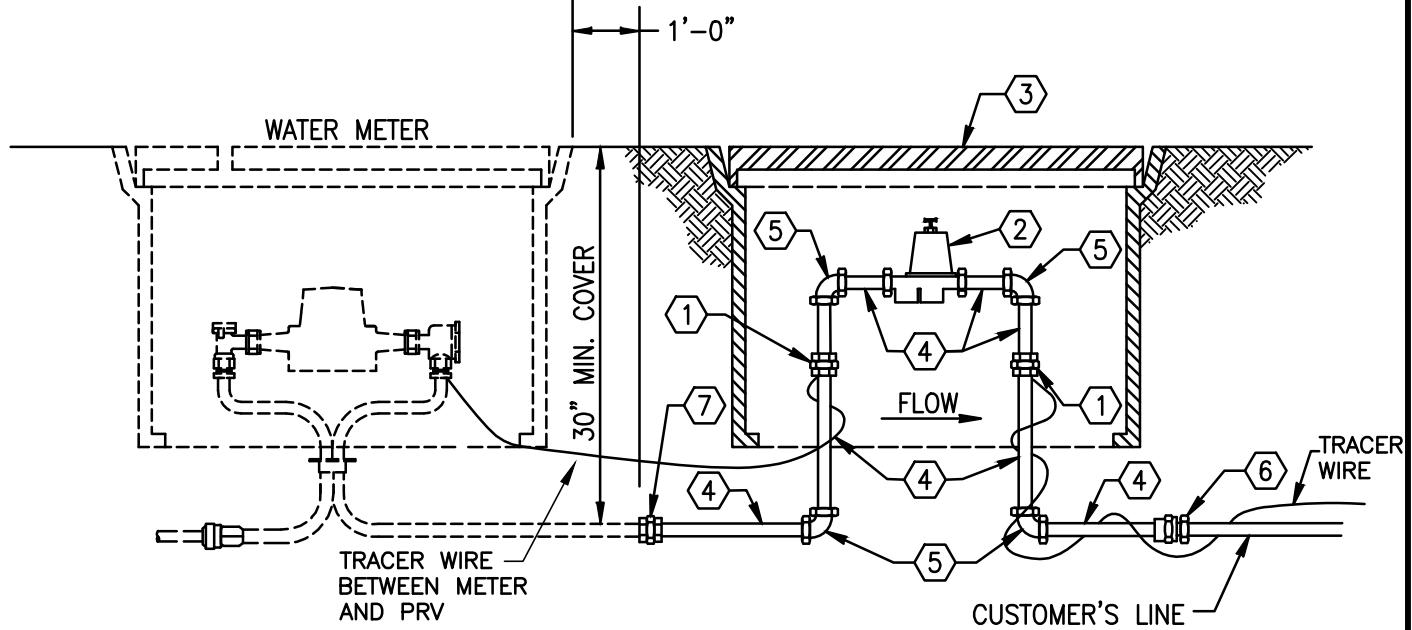
- ① BACKFLOW ASSEMBLIES MUST BE SELECTED FROM WASHINGTON STATE DEPARTMENT OF HEALTH LIST OF BACKFLOW ASSEMBLIES APPROVED FOR INSTALLATION IN WASHINGTON STATE.
- ② UNIONS MUST BE INSTALLED VERTICALLY OR HORIZONTALLY
- ③ DIELECTRIC UNIONS MUST BE USED TO SEPARATE DISSIMILAR MATERIALS.
- ④ AFTER INSTALLATION OF BACKFLOW ASSEMBLY, THE CONTRACTOR OR INSTALLER WILL CALL THE DISTRICT FOR AN INSPECTION BY A DISTRICT CROSS-CONNECTION CONTROL SPECIALIST.
- ⑤ RPBA MUST BE PURCHASED AND INSTALLED AS A UNIT. NO MODIFICATIONS TO ANY PART OF THE ASSEMBLY ARE ALLOWED.
- ⑥ FREEZE PROTECTION IS THE RESPONSIBILITY OF THE OWNER AND SHALL NOT INTERFERE WITH OPERATION OR TESTING OF THE ASSEMBLY.
- ⑦ FOLLOWING AN INSPECTION APPROVAL BY THE DISTRICT, THE BACKFLOW ASSEMBLY MUST BE SCHEDULED FOR AN INITIAL TEST BY A WASHINGTON STATE CERTIFIED BACKFLOW ASSEMBLY TESTER. TEST RESULTS ARE TO BE SUBMITTED TO BSI ONLINE BACKFLOW SOLUTIONS, INC. THE INITIAL TEST OF THE BACKFLOW ASSEMBLY MAY BE OBSERVED BY A DISTRICT CROSS-CONNECTION CONTROL SPECIALIST. METER MUST BE INSTALLED PRIOR TO TESTING.
- ⑧ PIPING FROM METER TO RPBA SHALL BE COPPER, BRASS, OR POLY TUBING.
- ⑨ THE INSTALLER /DEVELOPER MUST PROVIDE TEST COCK PROTECTION WITH PLUGS, CAPS OR COVERS.
- ⑩ MINIMUM 12" GAP FROM BOTTOM OF RELIEF PORT TO TOP OF DAYLIGHT DRAIN.



NOTES:

- ① ADJUSTABLE PIPE SUPPORT, STANDON MODEL S-89 OR EQUAL & SHALL BE BOLTED TO THE VALVE FLANGE.
- ② USING 90° ELBOWS ON BOTH SIDES OF RPBA, ALL FITTINGS SHALL BE FLANGED OR RESTRAINED.
- ③ AFTER INSTALLATION OF BACKFLOW ASSEMBLY, THE CONTRACTOR OR INSTALLER WILL CALL THE DISTRICT FOR AN INSPECTION BY A DISTRICT CROSS-CONNECTION CONTROL SPECIALIST.
- ④ FOLLOWING AN INSPECTION APPROVAL BY THE DISTRICT, THE BACKFLOW ASSEMBLY MUST BE SCHEDULED FOR AN INITIAL TEST BY A WASHINGTON STATE CERTIFIED BACKFLOW ASSEMBLY TESTER. TEST RESULTS ARE TO BE SUBMITTED TO BSI ONLINE BACKFLOW SOLUTIONS, INC. THE INITIAL TEST OF THE BACKFLOW ASSEMBLY MAY BE OBSERVED BY A CROSS-CONNECTION CONTROL SPECIALIST FROM THE DISTRICT. METER MUST BE INSTALLED PRIOR TO INITIAL TEST.
- ⑤ BACKFLOW ASSEMBLIES MUST BE SELECTED FROM WASHINGTON STATE DEPARTMENT OF HEALTH LIST OF BACKFLOW ASSEMBLIES APPROVED FOR INSTALLATION IN WASHINGTON STATE.
- ⑥ RPBA MUST BE PURCHASED AND INSTALLED AS A UNIT. NO MODIFICATIONS TO ANY PART OF THE ASSEMBLY ARE ALLOWED.
- ⑦ FREEZE PROTECTION IS THE RESPONSIBILITY OF THE OWNER AND SHALL NOT INTERFERE WITH OPERATION OR TESTING OF THE ASSEMBLY.
- ⑧ MUST MAINTAIN 12" MINIMUM AIR GAP FROM BOTTOM OF RELIEF PORT TO TOP OF DAYLIGHT DRAIN.

## PUBLIC RESPONSIBILITY | PRIVATE RESPONSIBILITY

KEYED NOTES FOR PRV

- ① 3/4" - 2" BRASS UNION.
- ② PRESSURE REDUCING VALVE W/ STRAINER - 3/4" - 2" WITH UNION COUPLING ON THE INLET; EQUAL TO: ZURN NR3XL (HRSC-HIGH RANGE 15-150PSI)
- ③ MID-STATES HDPE METER BOX SIZED TO FIT w/ FULL PLASTIC LID; OR TRAFFIC RATED BOX IN PAVED AREAS
- ④ 3/4" - 2" BRASS NIPPLE LENGTH AS REQ'D.
- ⑤ 3/4" - 2" 90° BEND (FIP) BRASS.
- ⑥ CONNECTION TO CUSTOMER'S LINE SHALL BE BRASS AND SIMILAR MATERIAL TO THAT ON CUSTOMER'S SIDE. NO NYLON, PLASTIC, OR GALVANIZED FITTINGS ALLOWED.
- ⑦ 3/4" - 2" BRASS DIELECTRIC UNION.
- ⑧ CONTRACTOR TO TAKE PRE & POST CONSTRUCTION PRESSURE AT CUSTOMER'S BUILDING AND SET PRESSURE TO PRE CONSTRUCTION LEVEL. CONTRACTOR TO DOCUMENT AND PROVIDE INFORMATION TO THE DISTRICT.

INSTALLATION

THE PRESSURE REDUCING VALVE SHALL BE LOCATED "DOWNSTREAM" OF THE METER. RESPONSIBILITY FOR PROPER INSTALLATION SHALL BE THAT OF THE CONTRACTOR, AND OPERATION OF THE VALVE SHALL BE THAT OF THE PROPERTY OWNER.

NOTE:

FOR PRESSURE REDUCING VALVES LARGER THAN 2" CONTACT THE DISTRICT  
FOR INFORMATION REGARDING APPROVED  
PACKAGED SYSTEMS.

