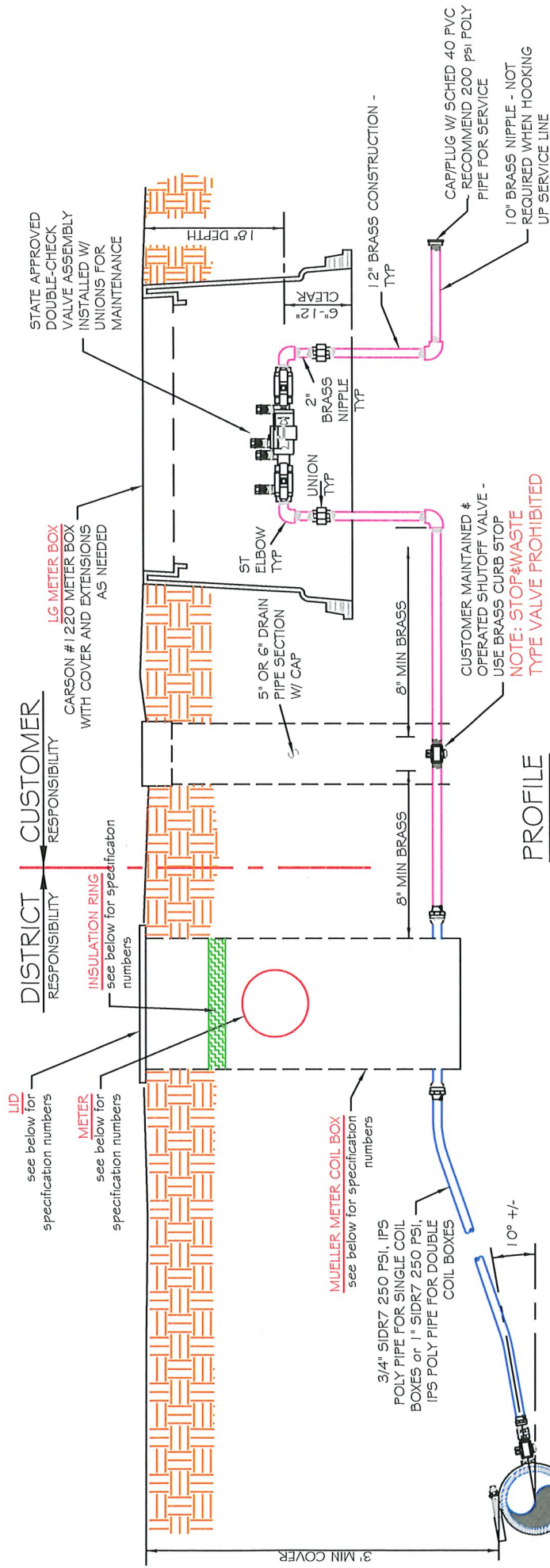


DEVELOPER/CONTRACTOR INSTALLATION RESPONSIBILITY



PROFILE

(DO NOT COVER UNTIL DISTRICT INSPECTS)

COIL BOX/METER SPECIFICATIONS:

SINGLE 3/4" METER INSTALLATION:

METER - 5/8" x 3/4" Badger Recordall Nutating Disc Flowmeter, LL Bronze External Thread Body, Noryl Chamber, Plastic Thrust Roller, Bronze Bottom, Meter Mounted Low Temp Register, No Connections, NSF 61, Cubic Feet Reader  
COIL BOX - Mueller No. 250 CS 15 36 LSBSN  
LID - Mueller No. 203 CS 15 36 FBBSN  
INSULATION RING - Mueller No. 790022

DOUBLE 3/4" METER INSTALLATION:

(2) METERS - see single 3/4" meter installation above  
COIL BOX - Mueller No. 203 CD 18 36 FBBSN  
LID - Mueller No. 780111  
INSULATION RING - Mueller No. 790153

SINGLE 1" METER INSTALLATION:

METER - 1" Badger Recordall Nutating Disc Flowmeter, LL Bronze External Thread Body, Noryl Chamber, Plastic Thrust Roller, Bronze Bottom, Meter Mounted Low Temp Register, No Connections, NSF 61, Cubic Feet Reader  
COIL BOX - Mueller No. 330 CS 18 36 LSBLN  
LID - Mueller No. 790018  
INSULATION RING - Mueller No. 790153



NOTES:

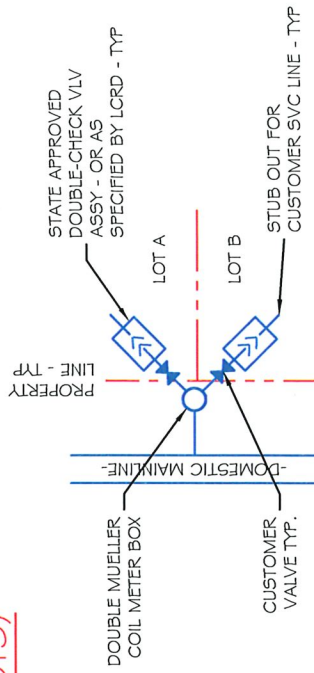
ALL DOMESTIC DEVICES AND FITTINGS MUST BE LEAD FREE.

MATERIAL SUBSTITUTIONS OR

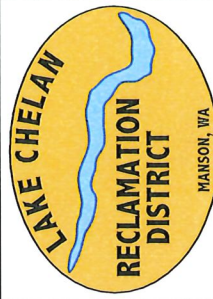
DETERMINATION OF EQUAL ARE AT THE SOLE DISCRETION OF LAKE CHELAN RECLAMATION DISTRICT.

SERVICE LINE TO BE 90° OFF MAIN LINE.

MAGNETIC TAPE TO BE BURIED OVER SERVICE LINE FOR LOCATION.



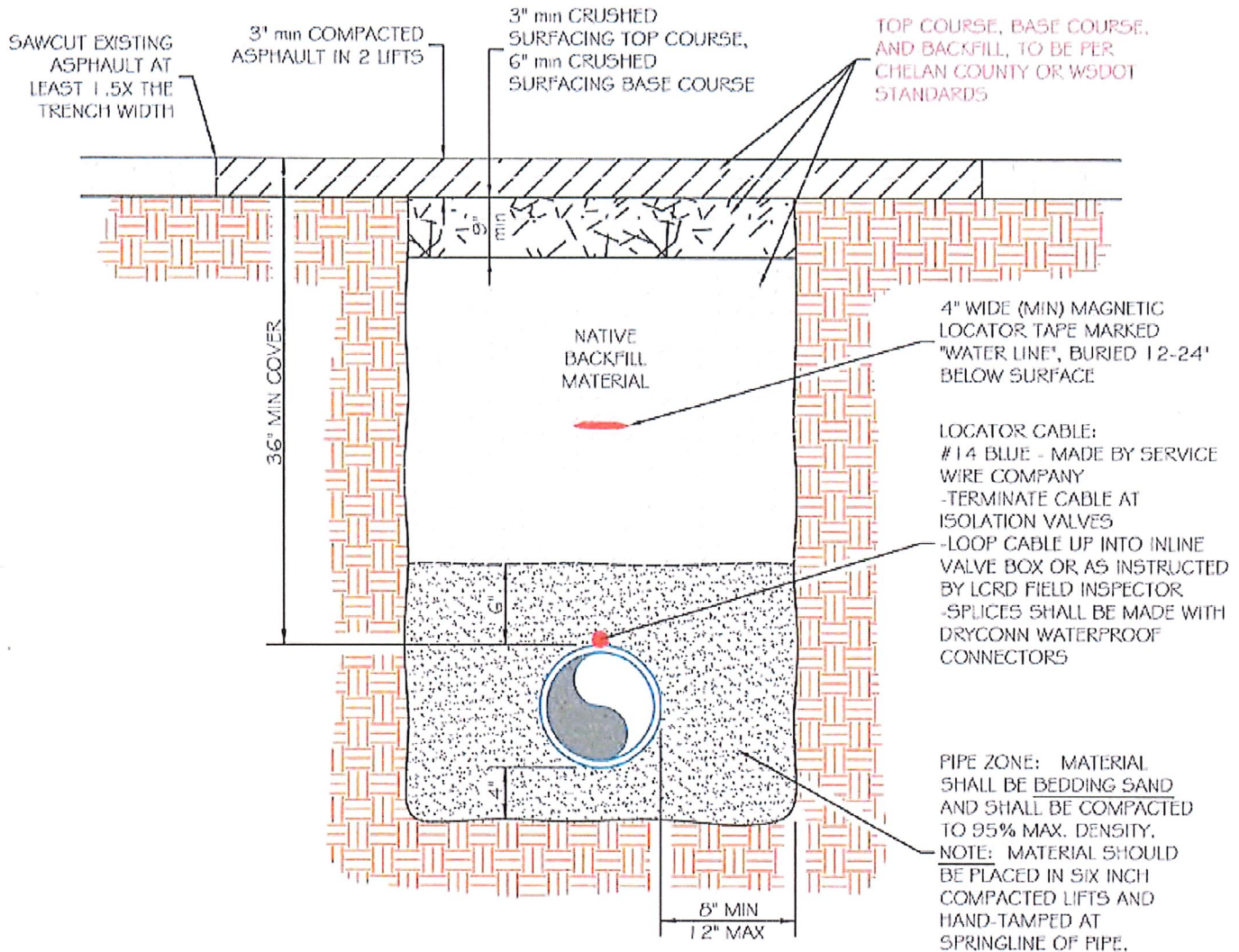
PLAN VIEW SKETCH  
DOUBLE SERVICE COIL BOX



TITLE		
WATER SERVICE CUSTOMER H/U W/ SCVA BACKFLOW STANDARD DOMESTIC DETAIL		
SHEET	1 OF SET	NO SCALE

CALL 48 HOURS  
BEFORE YOU DIG:

Northwest Utility Notification Center  
1-800-553-4344



PROFILE

NOTES:  
MATERIAL SUBSTITUTIONS OR DETERMINATION OF EQUAL ARE AT THE SOLE DISCRETION OF LAKE CHELAN RECLAMATION DISTRICT.

BACKFILL, SURFACE RESTORATION, AND MINIMUM PIPE DEPTH SHALL CONFORM TO THE REQUIREMENTS OF THE AGENCY HAVING JURISDICTION OVER THE ROAD RIGHT-OF-WAY.

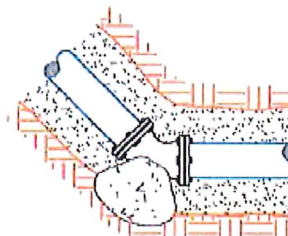
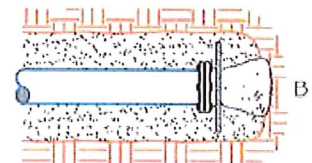
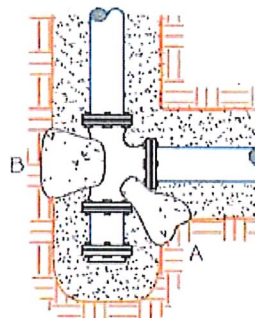
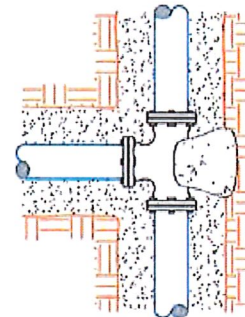
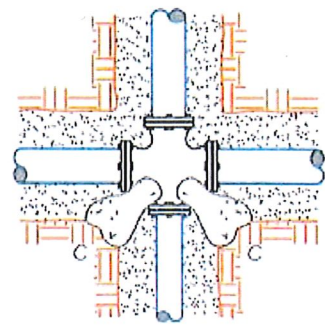
TITLE	
TYPICAL TRENCH SECTION	
STANDARD DOMESTIC DETAIL	
SHEET	DWG SCALE
2 OF SET	NO SCALE



DRAWN BY RIA

08.17.20 DomesticDetailTypical trench section.dwg (REV D)





PIPE SIZE	A	B	C	D	E	X
4"	3	1	1	1	1	NONE
6"	4	4	2	1	1	NONE
8"	7	6	4	2	1	4
10"	11	10	6	3	2	6
12"	16	14	9	5	3	9
14"	22	19	12	6	3	12
16"	29	25	16	8	4	16
18"	36	31	20	10	5	20
20"	45	39	24	13	6	24
22"	54	47	29	15	8	29
24"	64	56	35	18	9	35
28"	87	76	48	24	12	48
30"	101	87	55	28	14	55
36"	145	125	78	40	20	78
42"	197	171	107	55	27	107
48"	257	223	140	71	36	140

VERTICAL BLOCKING FOR 11-1/4°, 22-1/2°, 45° BENDS					
PIPE SIZE	VB	CU FT	S	d	L
4"	11-1/4°	8	2.0'	3/4"	1.5'
	22-1/2°	11	2.2'	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'
	45°	68	4.1'	3/4"	2.5'
8"	11-1/4°	16	2.5'	3/4"	2.0'
	22-1/2°	47	3.6'	3/4"	2.0'
	45°	123	5.0'	3/4"	2.0'
12"	11-1/4°	32	3.2'	3/4"	3.0'
	22-1/2°	88	4.5'	7/8"	3.0'
	45°	232	6.1'	3/4"	2.5'
16"	11-1/4°	70	4.1'	7/8"	3.0'
	22-1/2°	184	5.7'	1-1/8"	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'
	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"	5.5'
	45°	820	9.4'	1-3/8"	4.5'

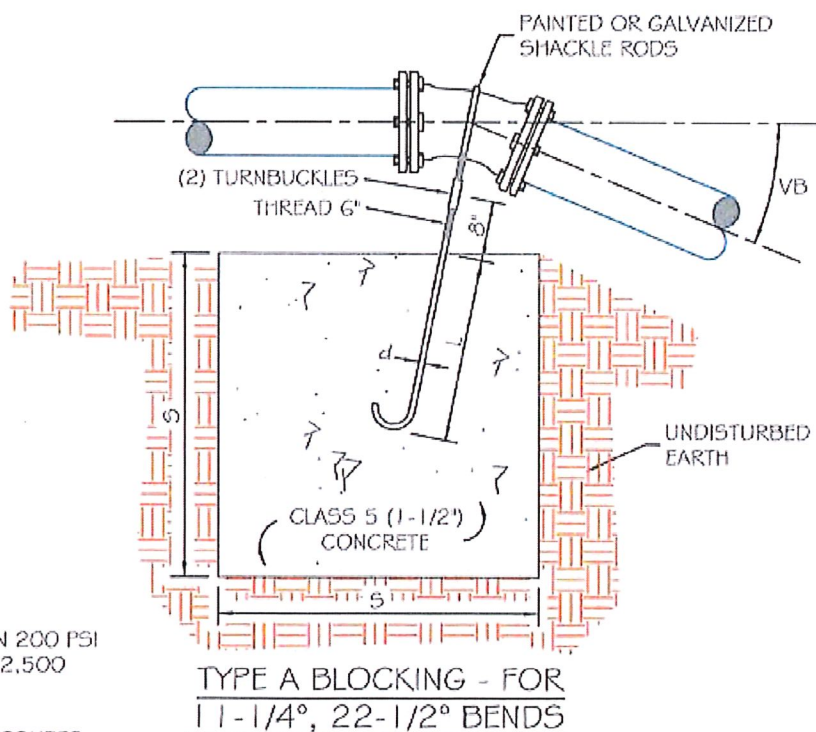
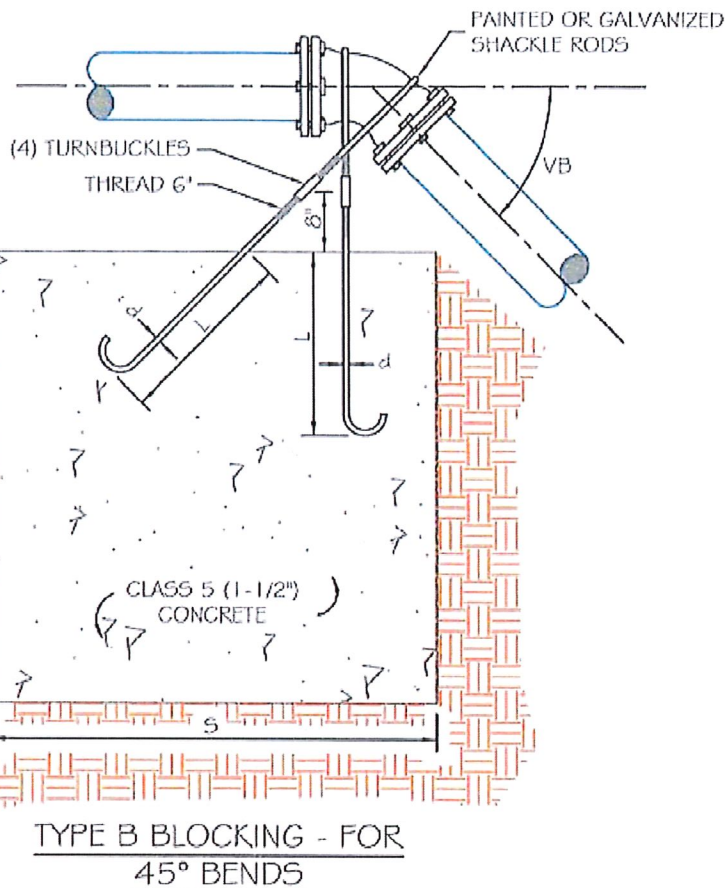
#### NOTES:

BEARING AREA OF CONCRETE THRUST-BLOCK BASED ON 200 PSI MAINLINE PRESSURE AND SAFE SOIL BEARING LOAD OF 2,500 POUNDS PER SQUARE FOOT.

AREAS MUST BE ADJUSTED FOR OTHER PIPE SIZES, PRESSURES AND SOIL CONDITIONS.

CONTRACTOR SHALL INSTALL BLOCKING ADEQUATE TO WITHSTAND FULL TEST PRESSURE AS WELL AS TO CONTINUOUSLY WITHSTAND OPERATION PRESSURE UNDER ALL CONDITIONS OF SERVICE.

MATERIAL SUBSTITUTIONS OR DETERMINATION OF EQUAL ARE AT THE SOLE DISCRETION OF LAKE CHELAN RECLAMATION DISTRICT.



TITLE

CONCRETE BLOCKING  
FOR VERTICAL BENDS

STANDARD DOMESTIC DETAIL

SHEET

4 OF SET

DWG SCALE

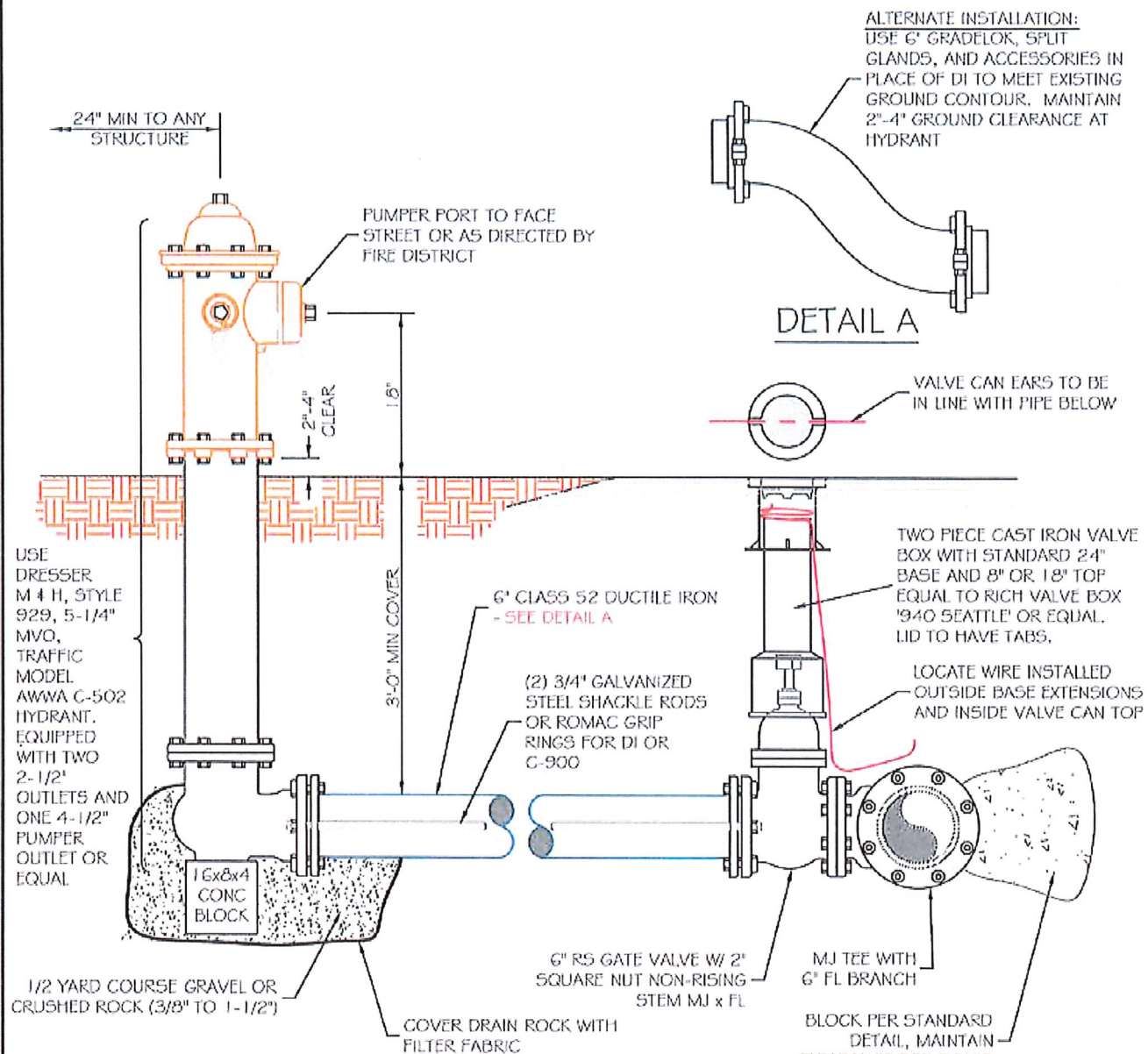
NO SCALE



DRAWN BY F1.A

08.17.20 Concrete/Utility/Concrete blocking for vertical bends.dwg (REV 5)





NOTES:  
MATERIAL SUBSTITUTIONS OR DETERMINATION OF EQUAL ARE AT THE SOLE DISCRETION OF LAKE CHELAN RECLAMATION DISTRICT.  
INSTALL HYDRANT GUARD POSTS PER STANDARD DETAIL.

## FIRE HYDRANT ASSEMBLY

STANDARD DOMESTIC DETAIL

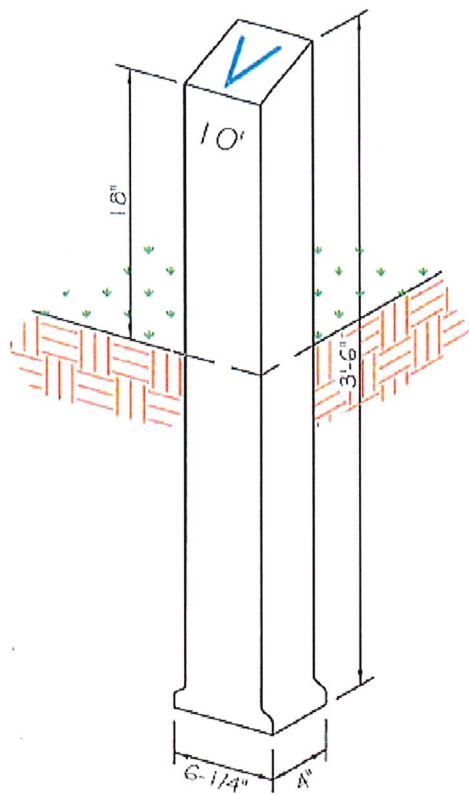
SHEET  
5 OF SET

DWG SCALE  
NO SCALE

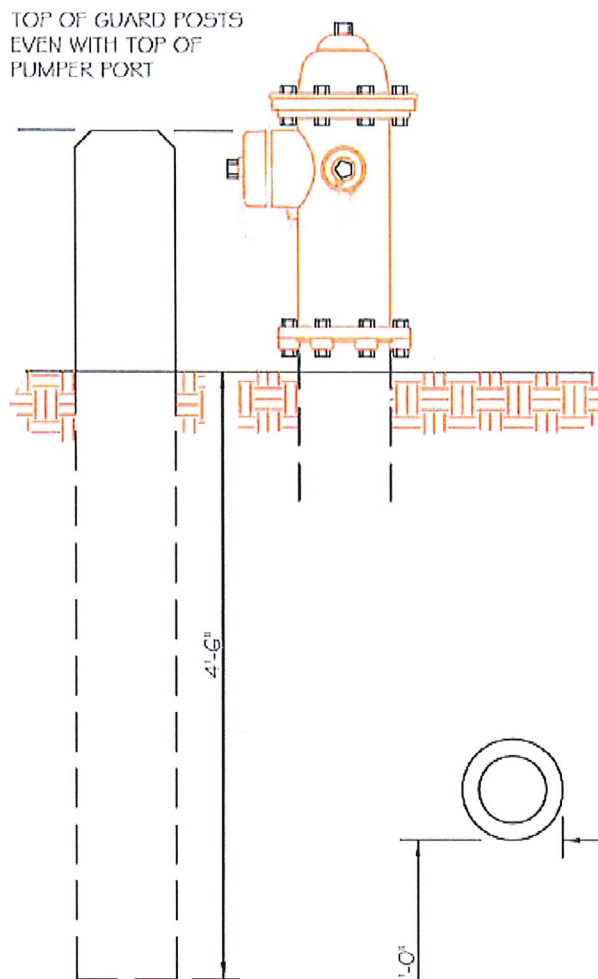


DRAWN BY RJA

12.17.20 DomesticDetailValveHydrant Assy.dwg [REV E]

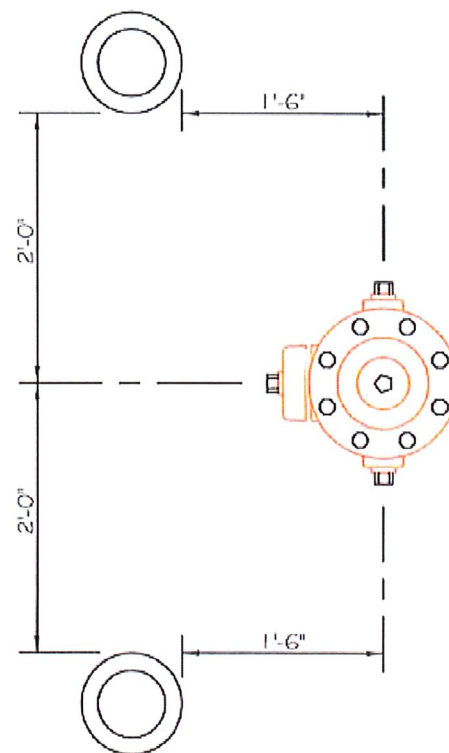


VALVE  
MARKER  
POST



ELEVATION

HYDRANT  
GUARD  
POSTS



PLAN

**NOTES:**

MATERIAL SUBSTITUTIONS OR DETERMINATION OF EQUAL ARE AT THE SOLE DISCRETION OF LAKE CHELAN RECLAMATION DISTRICT.

HYDRANT GUARD POST SHALL BE 6' LONG x 9" DIAMETER PRECAST CONCRETE POST OR 6' LONG x 6" DIAMETER FILLED DUCTILE IRON POSTS, PAINT WITH TWO COATS OF RUST-OLEUM NO. 2766-HI GLOSS WHITE PAINT.

VALVE MARKER POST SHALL BE EQUAL TO GREYSTONE PC 3.05 PAINT AS SPECIFIED FOR HYDRANT GUARD POST. PAINT DISTANCE FROM THE VALVE MARKER TO THE VALVE ON THE POST WITH BLACK ENAMEL PAINT.

VALVE MARKER POST TO BE USED FOR ALL MAINLINE VALVES OUTSIDE PAVED AREAS.

<p>TITLE</p> <p><b>FIRE HYDRANT GUARD POSTS &amp; VALVE MARKER</b></p> <p>STANDARD DOMESTIC DETAIL</p>	
<p>SHEET</p> <p>6 OF SET</p>	<p>DWG SCALE</p> <p>NO SCALE</p>



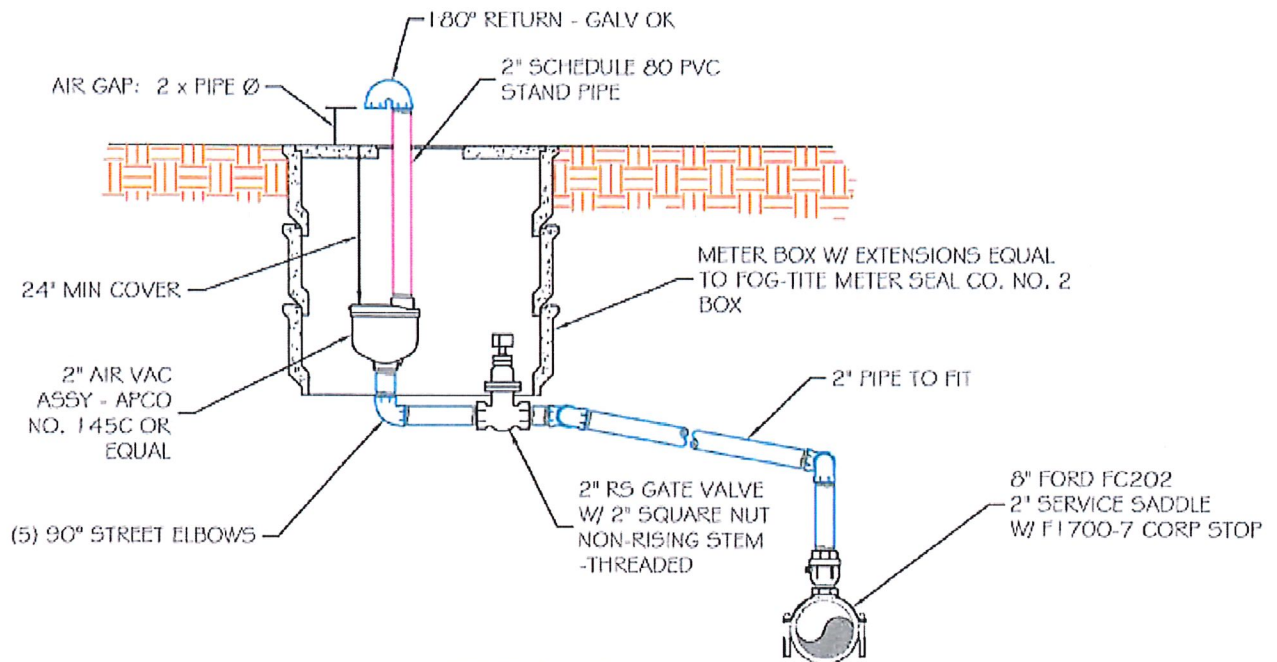
DRAWN BY RIA



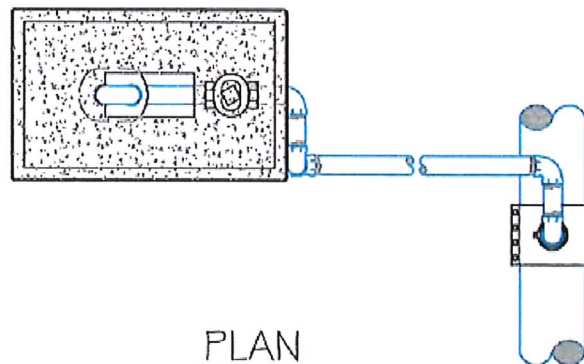


**NOTE:**

AIR & VACUUM VALVE ASSEMBLY MUST BE INSTALLED AT 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.



PROFILE



PLAN

**NOTES:**

MATERIAL SUBSTITUTIONS OR DETERMINATION OF EQUAL ARE AT THE SOLE DISCRETION OF LAKE CHELAN RECLAMATION DISTRICT.

ALTERNATE OF A TAPPED CAST IRON COUPLING MAY BE INSTALLED IN THE MAIN.

VACUUM VALVE ASSEMBLY LOCATED IN STREET REQUIRES SPECIAL VAULT.

ALL 2" PIPE AND FITTINGS TO BE GALVANIZED IRON UNLESS OTHERWISE SHOWN.

TITLE	
(2") AIR VACUUM VALVE ASSEMBLY	
STANDARD DOMESTIC DETAIL	
SHEET	DWG SCALE
8 OF SET	NO SCALE



DRAWN BY RL4

09.17.20 DomesticDetailAir Vacuum vlv provided (REV C)



REDUCED PRESSURE DEVICE - WATTS  
SERIES 909, FEBCO 825Y, OR EQUAL

LOCATED IN AN ABOVE GROUND AND  
APPROVED ENCLOSURE ACCESSIBLE  
FOR YEARLY TESTING BY A LICENCED  
BACKFLOW DEVICE PROFESSIONAL -  
SHALL NOT BE INSTALLED BELOW  
GRADE



DOMESTIC SERVICE  
BOOSTER PUMP

CUSTOMER  
SERVICE LINE

RPD

MINIMUM 30psi  
AT THE METER

LAKE CHELAN  
RECLAMATION DISTRICT  
DOMESTIC MAINLINE

MINIMUM 30psi  
AT THE METER

DOMESTIC SERVICE  
BOOSTER PUMP

RESIDENCE

REDUCED PRESSURE DEVICE  
- WATTS SERIES 909, FEBCO  
825Y, OR EQUAL

LOCATED IN AN ACCESSIBLE  
PLACE FOR YEARLY TESTING  
BY A LICENCED BACKFLOW  
DEVICE PROFESSIONAL

CUSTOMER  
SERVICE LINE

RPD

LAKE CHELAN  
RECLAMATION DISTRICT  
DOMESTIC MAINLINE

#### NOTES:

1. MATERIAL SUBSTITUTIONS OR DETERMINATION OF EQUAL ARE AT THE SOLE DISCRETION OF LAKE CHELAN RECLAMATION DISTRICT.
2. MAY BE INSTALLED IN A SEMI-BURIED PIT OR VAULT IF:
  - A. RELIEF VALVE IS INSTALLED ABOVE GROUND OR MAXIMUM FLOOD LEVEL
  - B. INSTALLED WITH APPROVED AIRGAP BETWEEN RELIEF VALVE VENT & TOP OF DAYLIGHT DRAIN
  - C. DRAIN MUST BE BORE SIGHTED TO THE DISCHARGE POINT ABOVE GROUND OR MAX FLOOD LEVEL - WHICHEVER IS HIGHER
  - D. DRAIN MUST BE ABLE TO HANDLE ALL WATER THAT COULD BE DISCHARGED FROM RELIEF VALVE
  - E. RPBA SHOULD NOT BE INSTALLED WHERE WATER DISCHARGED FROM ASSEMBLY WOULD BE OBJECTIONABLE

TITLE

## BOOSTER PUMP SERVICE CONNECTION

STANDARD DOMESTIC DETAIL

SHEET

9 OF SET

DWG SCALE

NO SCALE



DRAWN BY R1A

09.17.20 Domestic Booster pump service connection.dwg (REV A)

09.17.20 DomesticDetails\terminals radiolina station.dwg (REV B)



1. RESTRAINED JOINTS ARE PREFERRED IN MOST CASES, HOWEVER, THE DISTRICT WILL BE THE SOLE DETERMINER IF THE APPLICATION IS APPROPRIATE ON A GIVEN JOB. APPLICATIONS WHERE RESTRAINED JOINTS WOULD ALWAYS BE A REQUIREMENT WOULD INCLUDE:
  - 1.1. DEAD END MAINS THAT MAY BE EXTENDED IN THE FUTURE.
  - 1.2. SOILS NOT SUPPORTIVE OF THRUST BLOCKING OR INSUFFICIENT BEARING SOIL BEHIND FITTINGS (e.g. NEAR TOP OF A SLOPE).
2. MECHANICAL JOINT AND EXTERIOR BELL RESTRAINTS SHALL BE COATED WITH FUSION BONDED POLYESTER, OR ZINC & EPOXY COATING. EBAA MEGABOND, ROMAC ROMABOND, FORD ARMORGUARD E-COAT, OR APPROVED EQUAL.
3. TYLER TUFGRIP RESTRAINTS ARE NOT ALLOWED. SET-SCREW STYLE RESTRAINTS ARE NOT ALLOWED.
4. THE FOLLOWING TABLES ARE BASED ON EQUATIONS FROM THE DUCTILE IRON PIPE RESEARCH ASSOCIATIONS 2016 THRUST RESTRAINT DESIGN FOR DI AND PVC PIPE, WITH MODIFICATIONS OF SOIL PROPERTIES PER ASTM D2487. THE FOLLOWING CONDITIONS MUST BE MET FOR THESE RESULTS TO BE VALID. IF ANY OF THESE CONDITIONS CANNOT BE MET, PROJECT SPECIFIC CALCULATIONS MUST BE PROVIDED:
  - 4.1. PIPE LAYING CONDITION TYPE 4 or 5, DEFINED AS:
    - 4.1.1. SELECT GRANULAR BEDDING MATERIAL BELOW PIPE.
    - 4.1.2. PIPE ZONE MATERIAL EXTENDING TO TOP OF PIPE MECHANICALLY COMPACTED.
  - 4.2. PIPE RESTING DIRECTLY ON NATIVE TRENCH BOTTOM IS NOT ACCEPTABLE.
  - 4.3. BEDDING MATERIAL IS SANDY SILT. IF USING CLEAN SAND OR 5/8" MINUS CRUSHED SURFACING, LENGTHS MAY BE REDUCED BY 25%.
  - 4.4. DEPTH OF COVER IS 3.0 FEET MINIMUM. IF DEPTH IS 2.5 FEET AT TIME OF TESTING, MULTIPLY LENGTHS BY 120%.
  - 4.5. 200<sub>psi</sub> TEST PRESSURE MAXIMUM. FOR OTHER PRESSURE, TABLE LENGTHS ARE MULTIPLIED BY THE PROPORTIONAL DIFFERENCE.
5. VERTICAL BENDS WITH THE FORCE DIRECTION UPWARDS ARE NOT COVERED HERE. MUST BE DESIGNED BY ENGINEER FOR EACH CASE.

THE LENGTH "L" GIVEN BELOW IS THE DISTANCE THAT PIPE MUST BE RESTRAINED PAST THE FITTING JOINT. ALL JOINTS WITHIN THIS DISTANCE MUST BE RESTRAINED, INCLUDING THE FITTING.

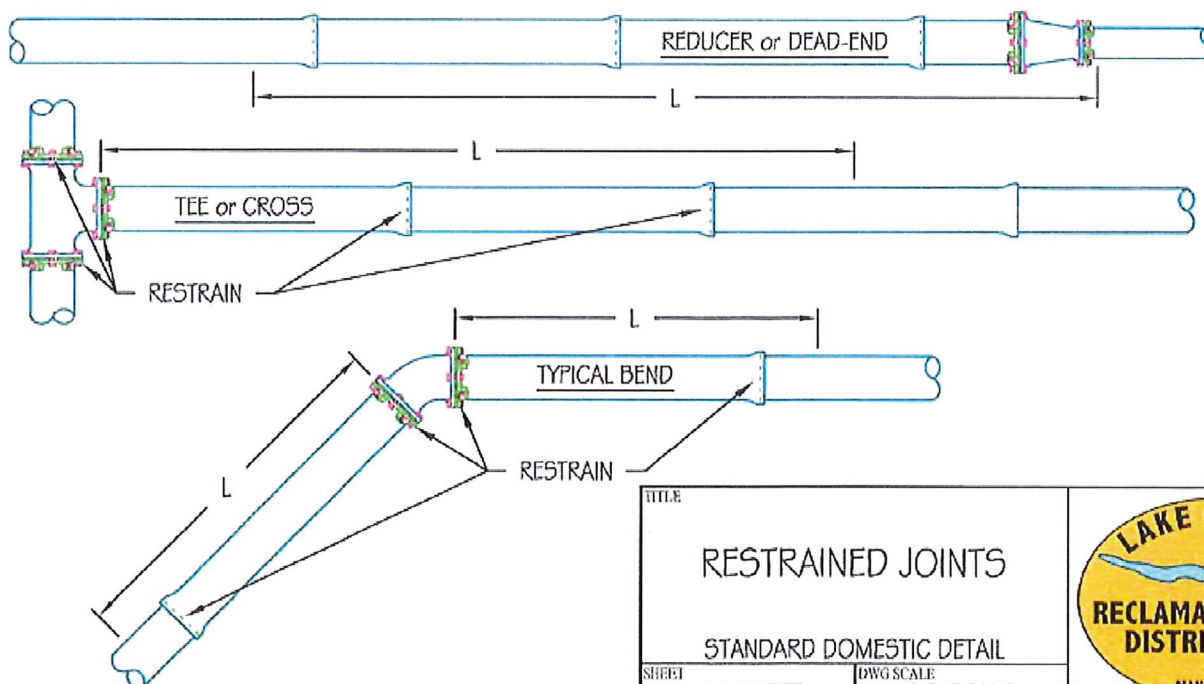
DIAMETER	1 1/4" BEND	2 1/2" BEND	45° BEND	90° BEND	DEAD END	REDUCER *
4"	3'	5'	10'	22'	65'	20'
6"	4'	7'	13'	32'	92'	62'
8"	5'	9'	17'	40'	119'	85'
10"	5'	10'	20'	48'	143'	88'
12"	6'	12'	23'	56'	168'	90'
16"	8'	14'	30'	70'	215'	92'
DI **	0.83x	0.83x	0.83x	0.83x	0.71x	0.71x

\* Assumes reducer down 2 sizes. (example 12"x8"). Larger reductions shall be treated as a tee equal to the larger size.

\*\* For Ductile Iron (DI) pipe, multiply the lengths by the value shown in the DI row.

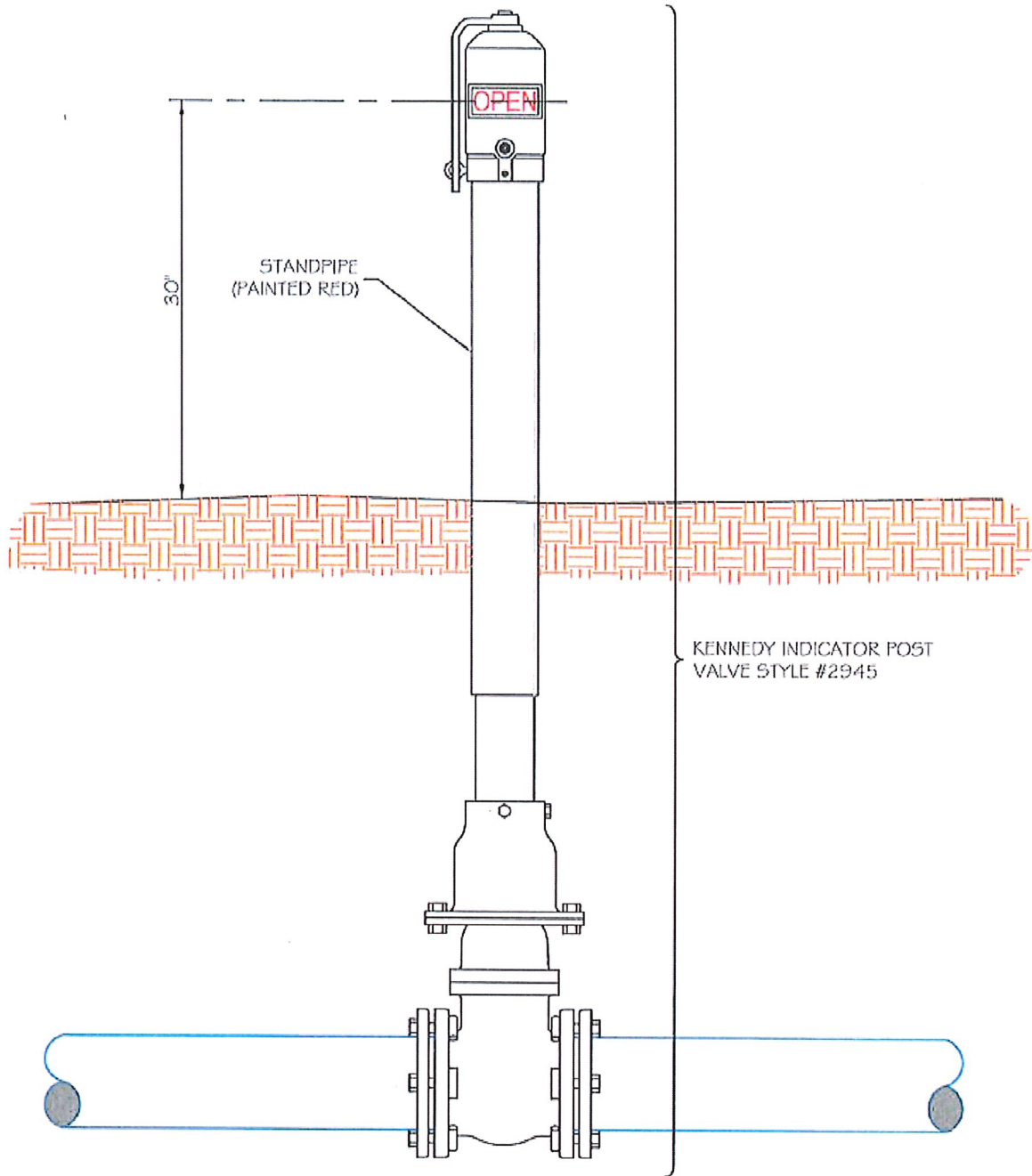
BRANCH REDUCING TEE TABLE (0.71x for DI)						
BRANCH DIAMETER	RUN DIAMETER					
	4"	6"	8"	10"	12"	16"
4"	48'	39'	31'	22'	13'	1'
6"	-	74'	68'	63'	56'	43'
8"	-	-	101'	96'	92'	82'
10"	-	-	-	125'	122'	118'
12"	-	-	-	-	150'	143'
16"	-	-	-	-	-	197'

Restrain all tee/cross legs with min 5' stick of pipe in each leg. "Bullhead" tees restrained per dead-end length for largest leg.



TITLE  
RESTRAINED JOINTS  
STANDARD DOMESTIC DETAIL  
SHEET 11 OF SET  
DWG SCALE NO SCALE





NOTES:  
MATERIAL SUBSTITUTIONS OR DETERMINATION OF EQUAL ARE AT  
THE SOLE DISCRETION OF LAKE CHELAN RECLAMATION DISTRICT.

TITLE	
POST INDICATOR VALVE	
STANDARD DOMESTIC DETAIL	
SHEET	DWG SCALE
12 OF SET	NO SCALE



DRAWN BY: RJA

03.29.01 Domestic Detail Indicator Valve (REV A)