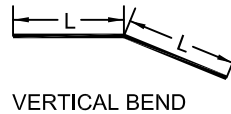
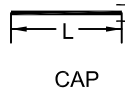
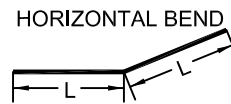
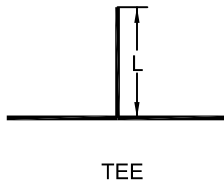
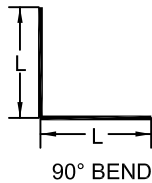


## LENGTH OF HORIZONTAL RESTRAINED PIPE

	PIPE SIZE	4"	6"	8"	12"	16"	18"	24"
FITTING TYPE								
TEE/ CROSS		10'	10'	31'	72'	113'	131'	188'
90° BEND		24'	34'	44'	60'	75'	82'	102'
45° BEND		10'	14'	18'	25'	32'	34'	43'
22 1/2° BEND		5'	7'	9'	12'	15'	17'	21'
11 1/4° BEND		5'	5'	5'	6'	8'	9'	11'
CAP		68'	95'	124'	175'	223'	246'	313'



**NOTE:**

1. ALL FITTINGS SHALL BE RESTRAINED.
2. ALL T-BOLTS SHALL BE COR-BLUE. ALL OTHER BOLTS SHALL BE STAINLESS STEEL.
3. WHEN REDUCERS ARE USED AT FITTINGS, THE LENGTH OF RESTRAINED PIPE SHALL BE BASED ON THE LARGER PIPE SIZE.
4. BASED ON PVC @ 200 PSI S.F. =2, SOIL TYPE GW. TYPE 4 TRENCH.
5. DESIGN ENGINEER MAY SUBMIT CALCULATIONS FOR VARYING CONDITIONS.

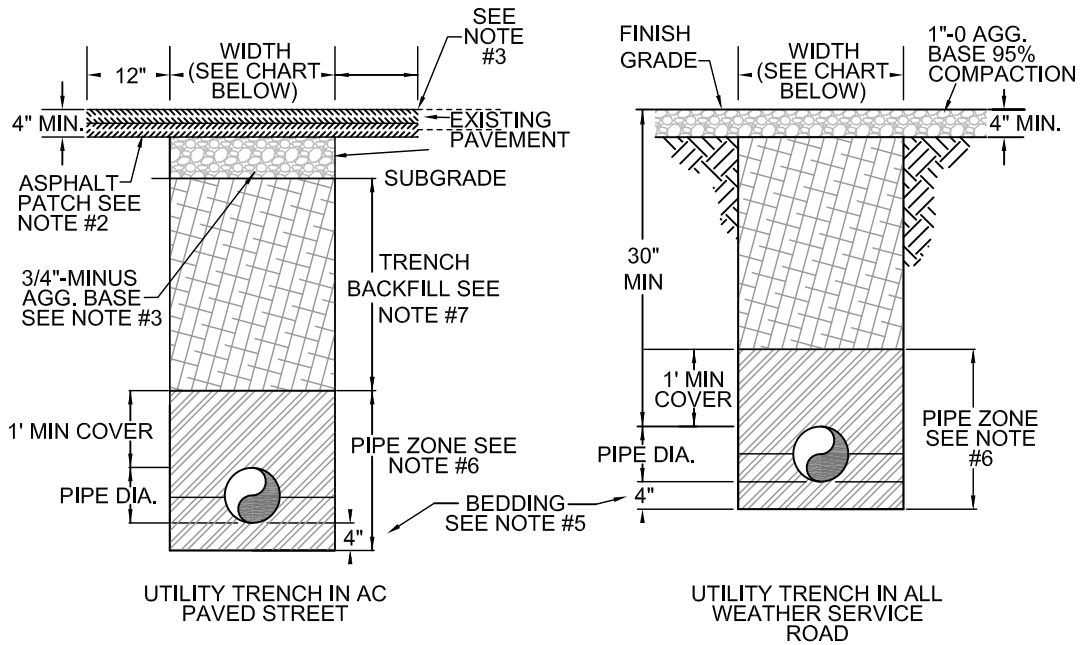


**DESCHUTES VALLEY WATER DISTRICT  
STANDARD DETAIL**

GENERAL NOTES

SCALE: NTS
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REVISION DATE: 03/22/2023

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**1-1**



TRENCH WIDTH & DEPTH

PIPE SIZE I.D.	DEPTH MIN.	WIDTH MIN.
LESS THAN 6"	38"	24"
6"	40"	24"
8"	42"	26"
10"	44"	26"
12"	46"	26"
15"	49"	30"
18"	52"	34"

**NOTE:**

1. SAW CUT JOINTS SHALL BE TACKED AND SAND SEALED.
2. ASPHALT PATCH SECTION SHALL BE NOT LESS THAN 4" THICK, PLACED IN TWO LIFTS NOT TO EXCEED 2".
3. BASE MATERIAL SHALL MEET APPLICABLE JURISDICTIONAL STANDARDS.
4. TRENCHES LESS THAN 24" IN WIDTH UNDER PAVEMENT, CURB AND/OR SIDEWALK AREAS SHALL BE BACKFILLED PER APPLICABLE JURISDICTIONAL STANDARDS. TRENCHES IN HIGH TRAFFIC AREAS MAY BE REQUIRED TO BE BACKFILLED WITH CONTROLLED LOW STRENGTH MATERIAL AS REQUIRED PER APPLICABLE JURISDICTIONAL STANDARDS.
5. PIPE BEDDING SHALL BE 4" MINIMUM DEPTH.
6. PIPE ZONE MATERIAL SHALL BE CLASS "B" BACKFILL , COMPACTED TO 95% OF MAXIMUM DENSITY AASHTO T-99. FOR PIPES LARGER THAN 3" PLACE FIRST LIFT TO PIPE CENTERLINE.
7. CLASS "A" TRENCH BACKFILL MATERIAL IS ALLOWED FROM 2' ABOVE PIPE TO SUBGRADE FOR TRENCHES DEEPER THAN 6 FEET (FINISH GRADE TO TOP OF PIPE).



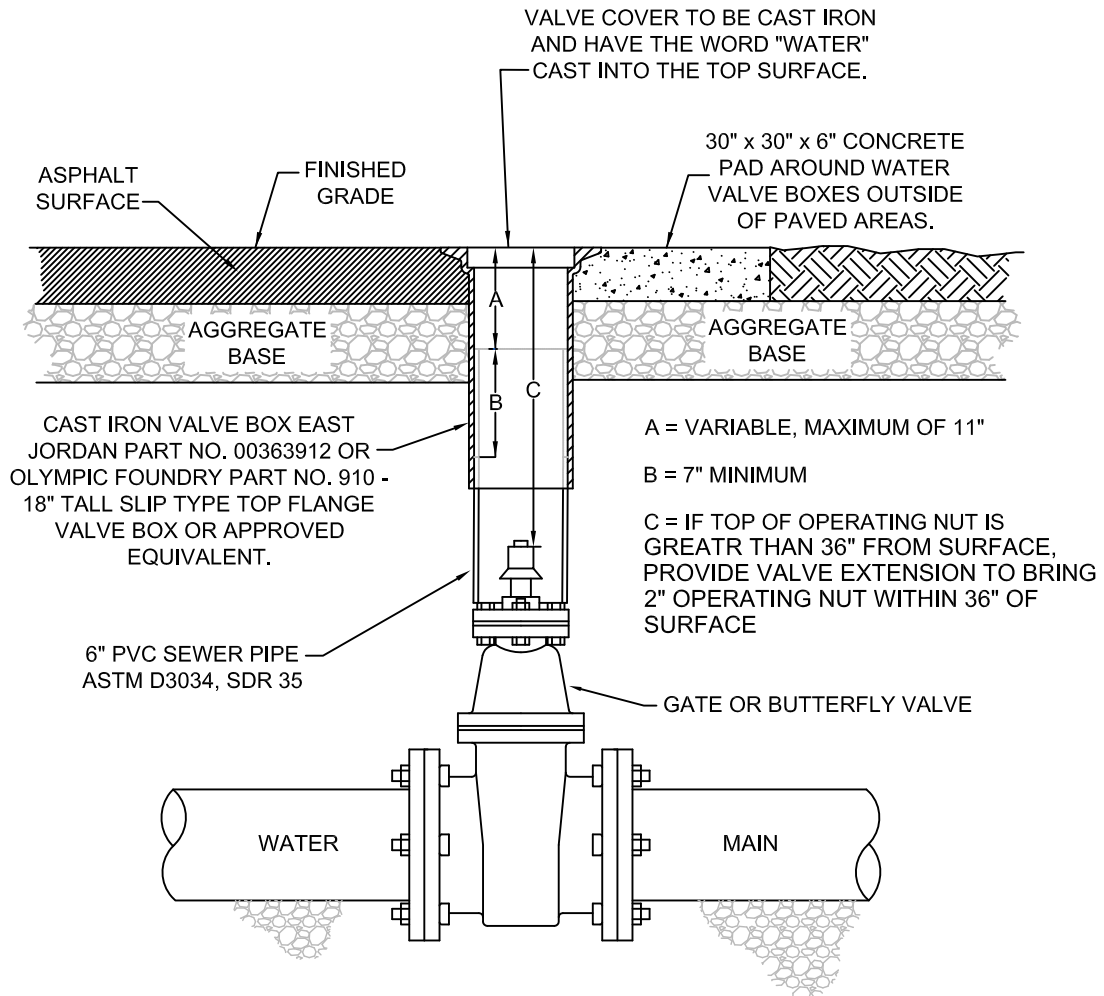
DESCHUTES VALLEY WATER DISTRICT  
STANDARD DETAIL

UTILITY TRENCH

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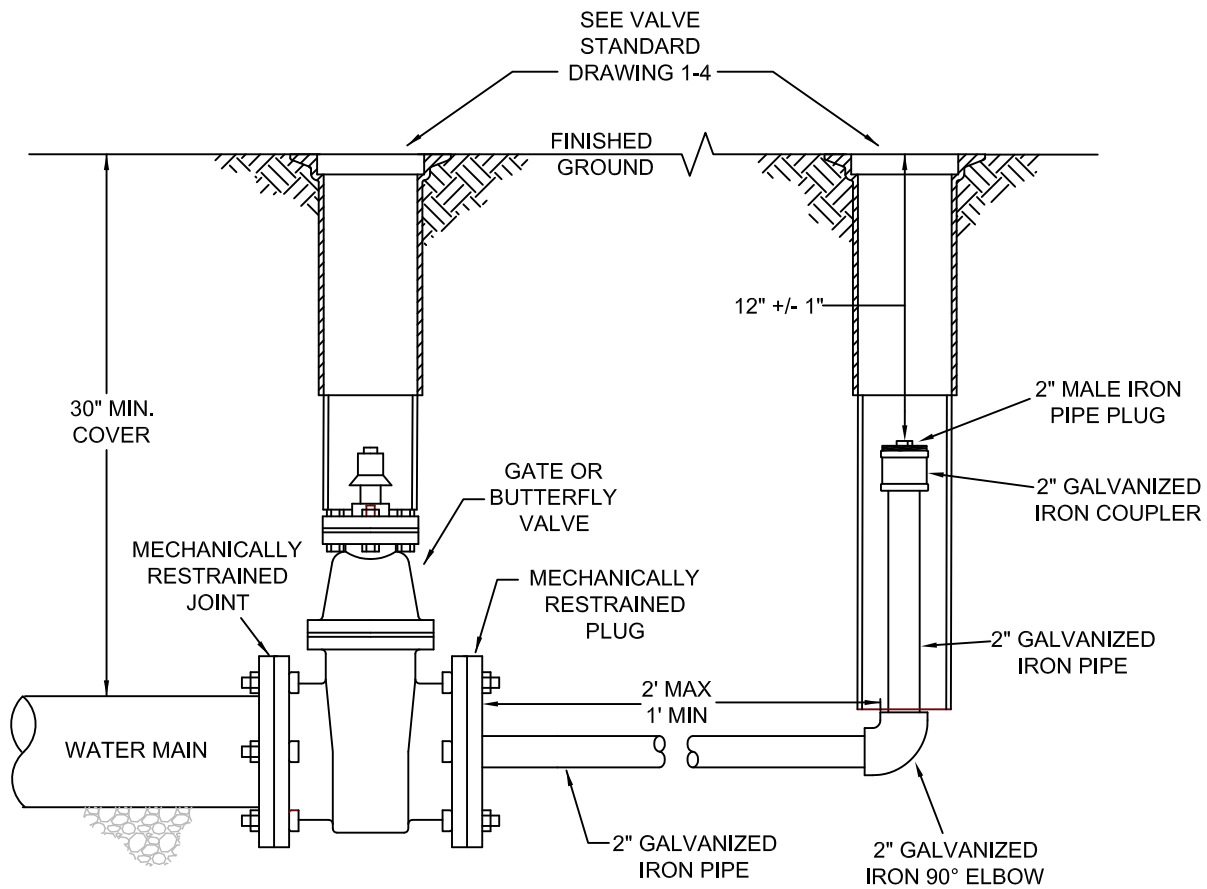


DESCHUTES VALLEY WATER DISTRICT  
STANDARD DETAIL

TYPICAL VALVE AND BOX INSTALL

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REVISION DATE: 03/22/2023

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1-4



**NOTE:**

- IF MAIN IS 6" OR SMALLER USE 2" GALVANIZED FOR BLOW/OFF INSTALLATION.
- IF MAIN IS 8" OR LARGER USE 4" GALVANIZED FOR BLOW OFF INSTALLATION

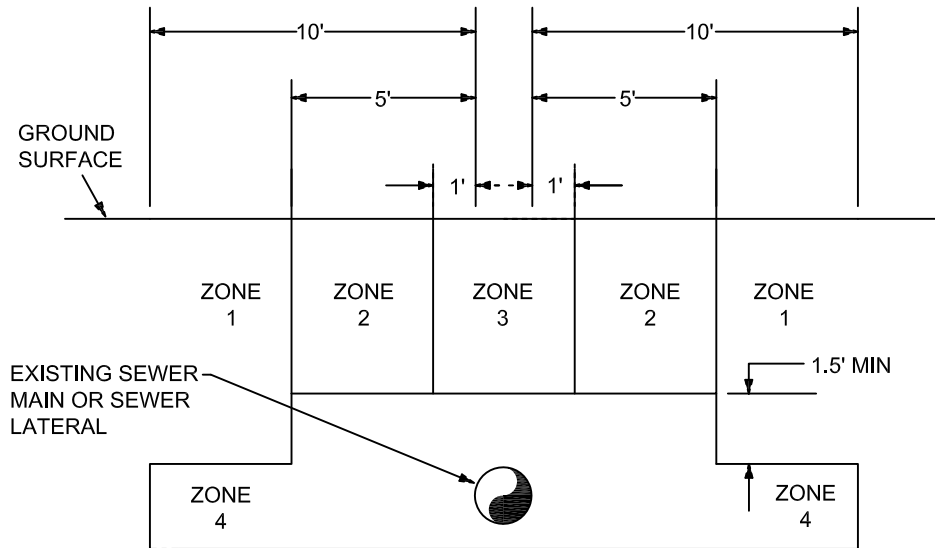


DESCHUTES VALLEY WATER DISTRICT  
STANDARD DETAIL

TYPICAL 2" BLOW OFF INSTALLATION

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REVISION DATE: 3/22/2023

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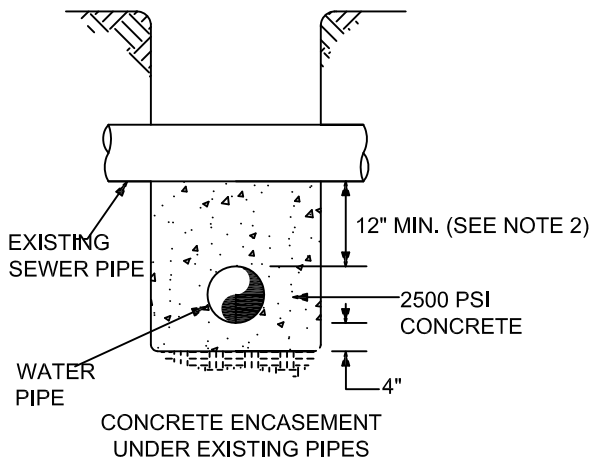


**WATER & SEWER LINE IN PARALLEL CONDITIONS**

ZONE	VERTICAL SEPARATION	HORIZONTAL SEPARATION	RESTRICTIONS
1	WATER LINE HIGHER THAN SEWER	5'	ONLY CROSSING RESTRICTIONS APPLY
1	WATER LINE LEVEL OR LOWER THAN SEWER	10'	ONLY CROSSING RESTRICTIONS APPLY
2	WATER LINE 1.5' HIGHER THAN SEWER	GREATER THAN 1', LESS THAN 5'	CASE BY CASE DETERMINATION
3	WATER LINE 1.5' HIGHER THAN SEWER	LESS THAN 1'	PARALLEL WATER LINE PROHIBITED
4	WATER LINE LESS THAN 1.5' ABOVE SEWER	LESS THAN 5'	PARALLEL WATER LINE PROHIBITED
4	WATER LINE LEVEL OR LOWER THAN SEWER	LESS THAN 10'	PARALLEL WATER LINE PROHIBITED

**NOTE:**

1. WATER & SEWER LINE CROSSINGS SHALL COMPLY WITH DESIGN STANDARDS, 11C. SEWER OR O.A.R. 333-61-050 FOR SEPARATION AND PIPE MATERIAL REQUIREMENTS.
2. SEPARATION LESS THAN 12" FOR WATER & SEWER LINE CROSSINGS MUST BE APPROVED BY THE CITY ENGINEER.
3. CONCRETE ENCASEMENT TO BE USED IN CASES WHERE A CITY WATER MAIN CROSSES UNDER AN EXISTING SEWER MAIN, WITH CITY APPROVAL. MINIMUM ENCASEMENT LENGTH SHALL BE 3' EACH SIDE.
4. UNDERGROUND UTILITIES SHALL NOT BE LOCATED CLOSER THAN 10' HORIZONTALLY FROM ANY WATER AND SEWER MAIN. UNDER SPECIAL PERMISSION FROM THE DISTRICT ENGINEER, SEPARATION MAY BE REDUCED TO 5'.



**DESCHUTES VALLEY WATER DISTRICT  
STANDARD DETAIL**

WATER LINE AND SEWER LINE SEPARATION

SCALE: NTS

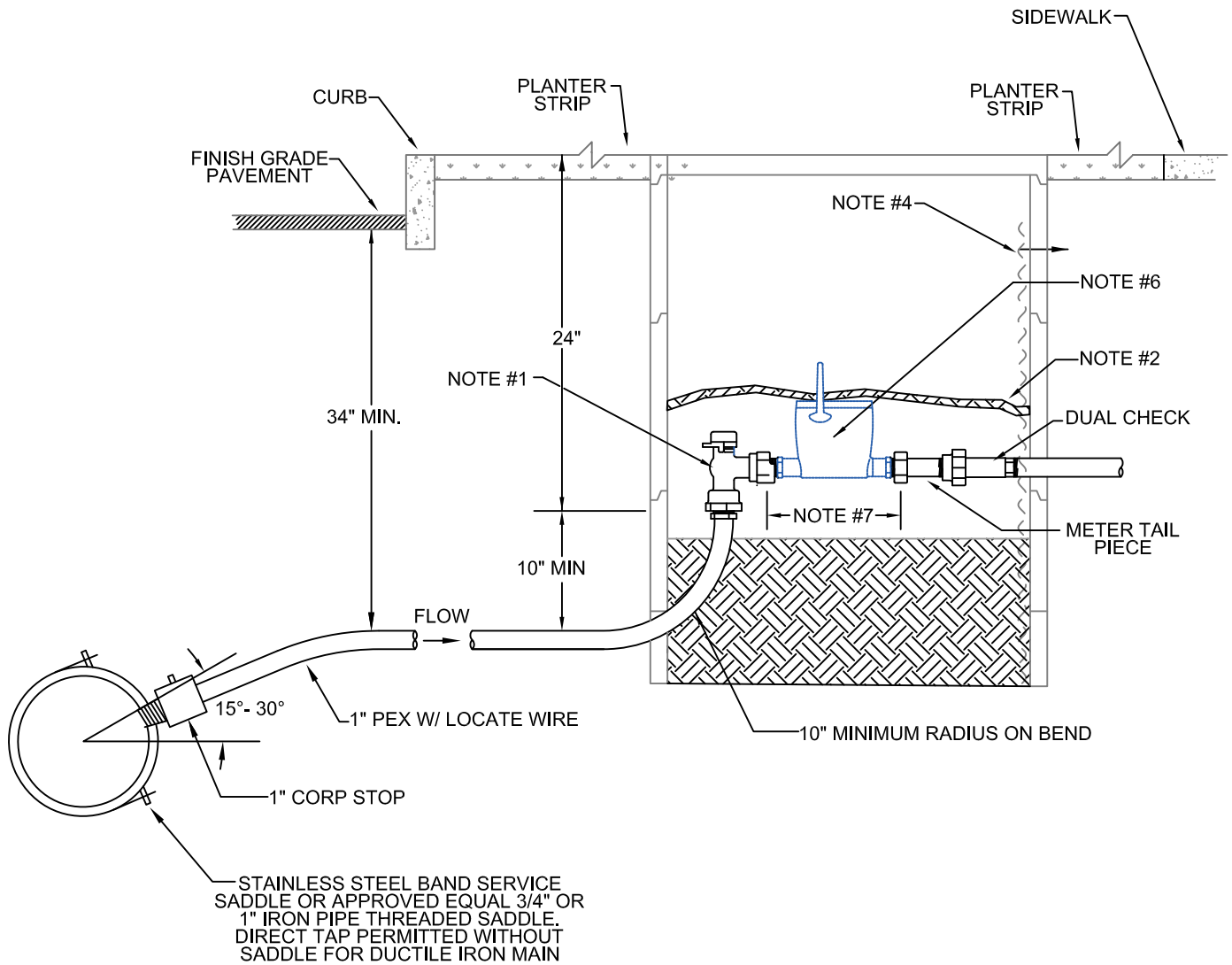
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REVISION DATE: 3/22/2023

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1-6



LANDSCAPE AREAS				SIDEWALK / TRAFFIC AREAS	
METER SIZE	BOX SIZE	BOX TYPE	LID TYPE	BOX TYPE	LID TYPE
5/8" -1"	13x24	HDPE	HDPE W/CAST IRON READER OPENING	POLYMER CONCRETE 20,000 LBS RATING	POLYMER CONCRETE - 20,000 LBS RATING W/CAST IRON READER OPENING
1.5"-2"	17x30	HPDE	HDPE W/CAST IRON READER OPENING	POLYMER CONCRETE 20,000 LBS RATING	POLYMER CONCRETE - 20,000 LBS RATING W/CAST IRON READER OPENING
OVER 2"	*TO BE APPROVED BY DVWD			*TO BE APPROVED BY DVWD	

**NOTE:**

1. ANGLE METER VALVE 1" X 3/4" X 1" (COMPRESSION OR PIPE THREAD)
2. 1/2" CROSSLINK CLOSED CELL NATURAL T20 INSULATION, CUT TO FIT METER BOX - ANTENNA MUST STAY EXPOSED
3. IF SIDEWALK IS CURB-TIGHT THEN BOX CAN BE SET ON CUSTOMER SIDE
4. CUSTOMER SIDE OF METER. CUSTOMER RESPONSIBLE FOR MAINTENANCE & REPAIR AFTER DUAL CHECK
5. PRV IS REQUIRED ON CUSTOMER SIDE OF METER
6. RESIDENTIAL METER SUPPLIED & INSTALLED BY DVWD. 5/8" AND 3/4" UP TO 1-1/2"
7. 10-3/4" FOR 1" METER, 7-1/2" FOR 3/4" METER



DESCHUTES VALLEY WATER DISTRICT  
STANDARD DETAIL

STANDARD DUCTILE IRON PIPE RESTRAINED LENGTH TABLES

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APPROVED BY: JSG  
REVISION DATE: 7/10/2023

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