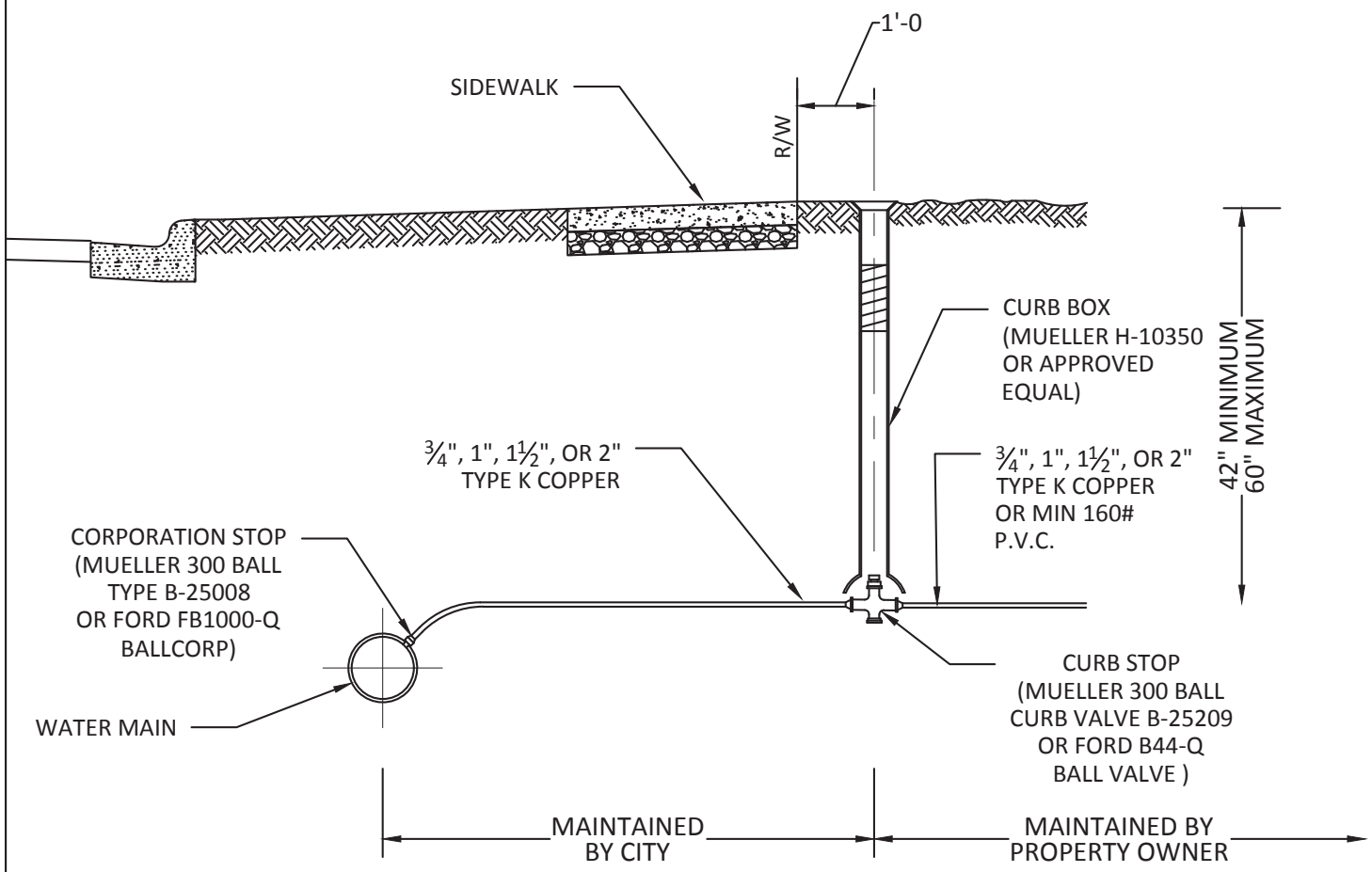
EST 1808

CITY OF DELAWARE OHIO

WATER
STANDARD CONSTRUCTION DRAWINGS

NOTES:

1. USE OF THIS DETAIL ONLY APPLIES TO PRIVATE WATER SYSTEMS NOT CONTAINING INDIVIDUAL METERS AT EACH SERVICE. FOR DOMESTIC WATER SERVICES ON PUBLIC WATER SYSTEMS, SEE WTRD-1.2.
2. THE CURB BOX SHALL BE PLACED 1'-0 FROM THE EDGE OF THE SIDEWALK OR 2'-0 INSIDE THE RIGHT-OF-WAY OR EASEMENT LINE WHEN NO SIDEWALK IS PRESENT OR PROPOSED.
3. THE CURB STOP SHALL BE INSTALLED WITH VALVE OPENING FACING THE STRUCTURE TO BE SERVED. THE CURB STOP SHALL TURN '¼ TURN' CLOCKWISE ON TO OFF POSITION (TYPICAL).
4. CURB BOXES SHALL BE PLACED A MINIMUM OF 20'-0 FROM ANY EXISTING OR PROPOSED FOUNDATION OR STRUCTURE.



EST 1808
CITY OF
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OHIO
Public Works Department

STANDARD DETAIL

DOMESTIC WATER SERVICE PRIVATE WATER MAINS

WATER

WTRD-1.1

Rev. 12/31/2018

CITY OF DELAWARE
EST 1808
OHIO
Public Works Department

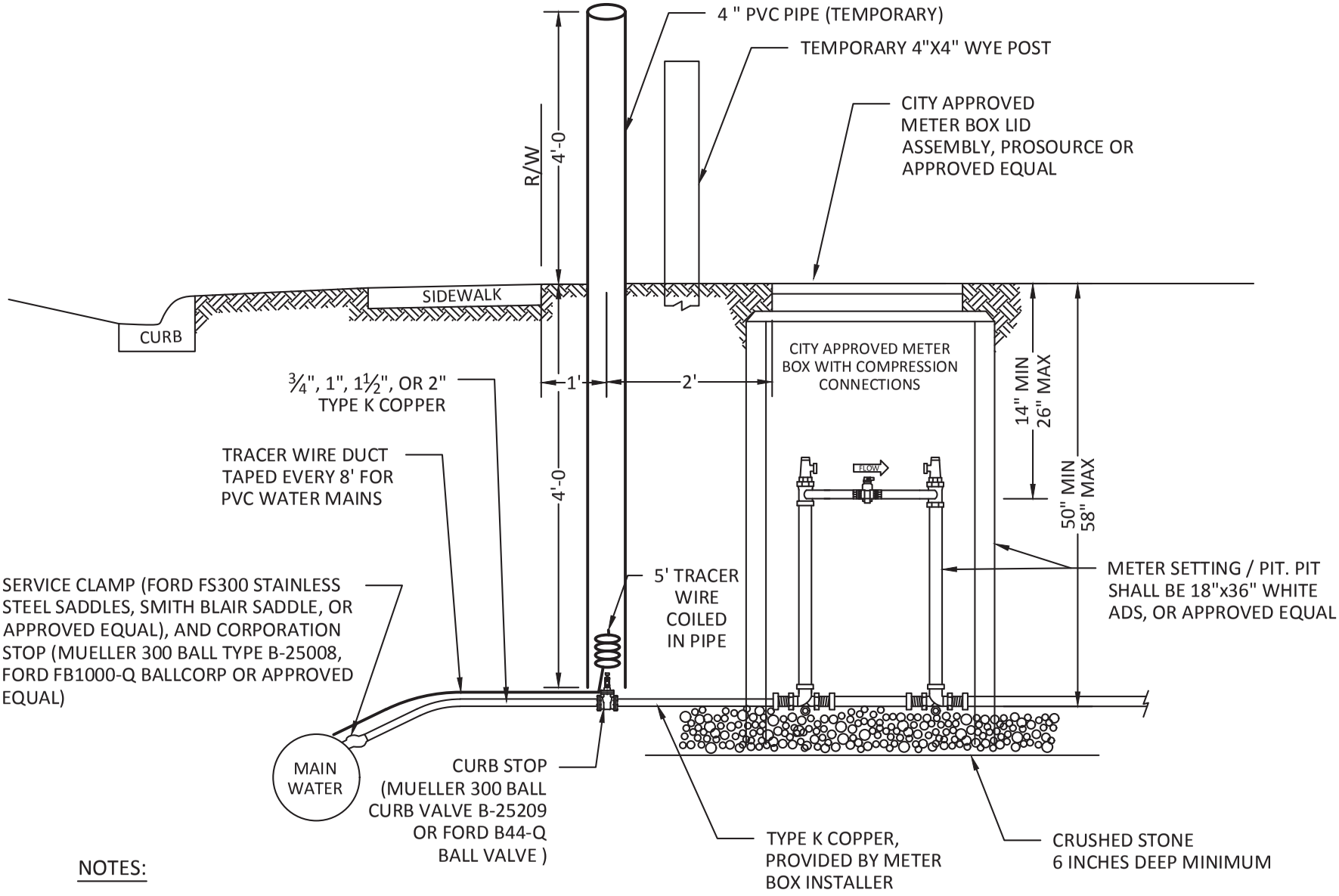
DOMESTIC WATER SERVICE PUBLIC WATER MAINS

STANDARD DETAIL

WATER

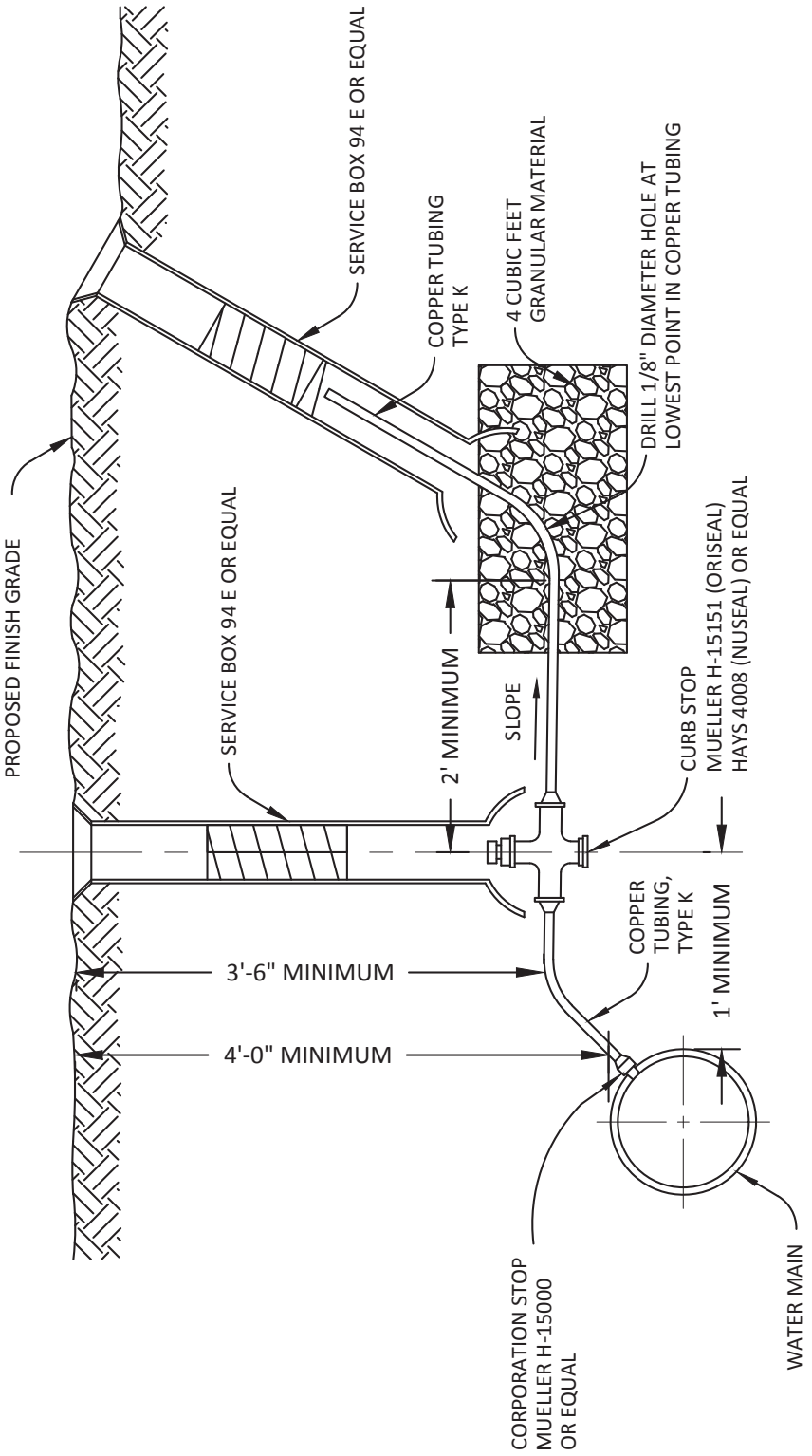
WTRD-1.2

Rev. 12/31/2018



NOTES:

1. THIS DETAIL APPLIES TO PUBLIC WATER SYSTEMS, ONLY.
2. THE METER BOX INSTALLATION MUST BE INSPECTED PRIOR TO BACKFILLING AND METER INSTALLATION.
3. TRACER WIRE IS TO BE EXTENDED TO METER PIT ONCE INSTALLED.
4. TRACER WIRE SHALL BE COPPERHEAD INDUSTRIES OR APPROVED EQUAL.
5. THE CURB STOP SHALL BE INSTALLED WITH VALVE FACING THE STRUCTURE TO BE SERVED. THE CURB STOP SHALL TURN '¼ TURN' CLOCKWISE ON TO OFF POSITION.



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Public Works Department

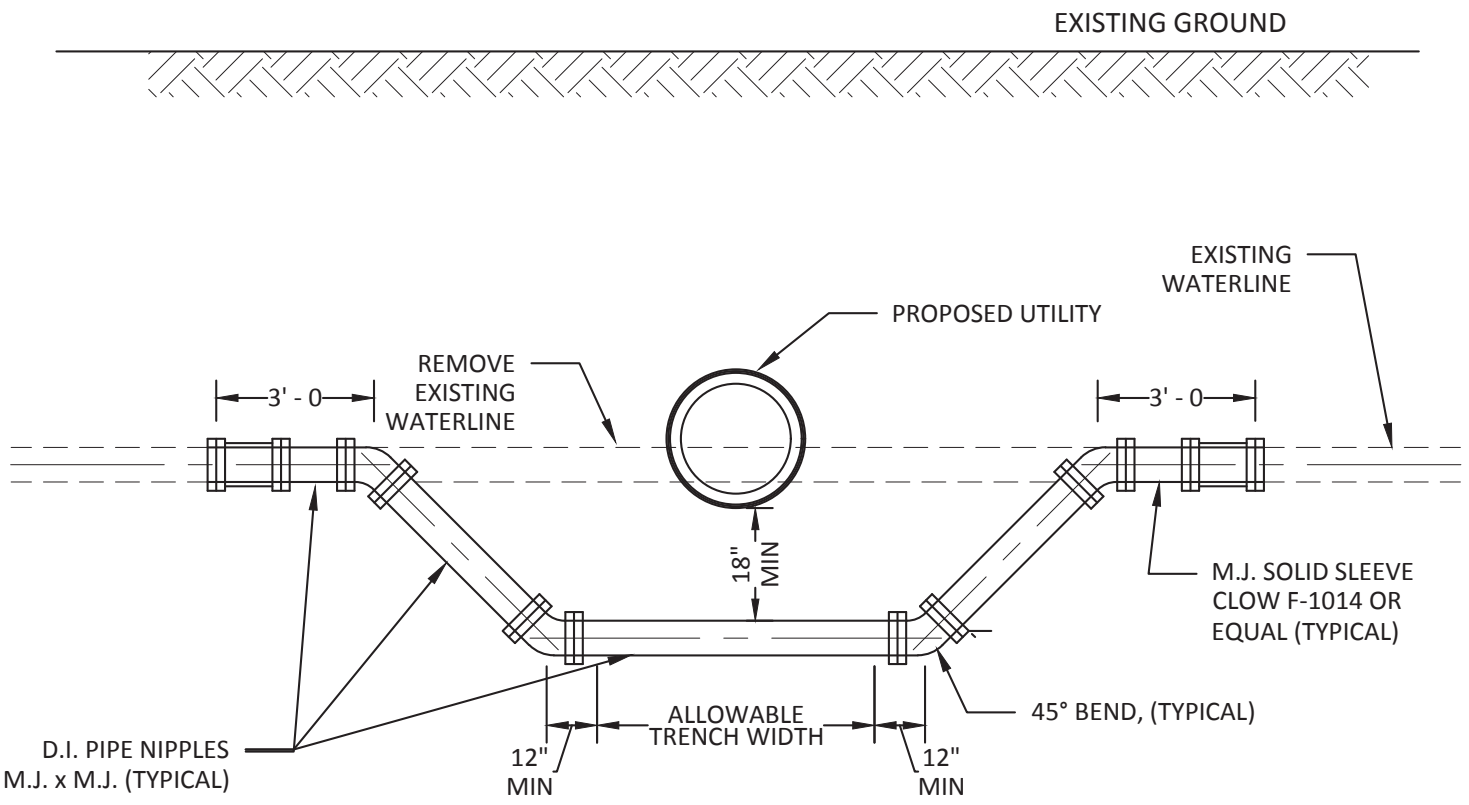
STANDARD DETAIL

TYPICAL AIR RELEASE

WATER

WTRD-2.0

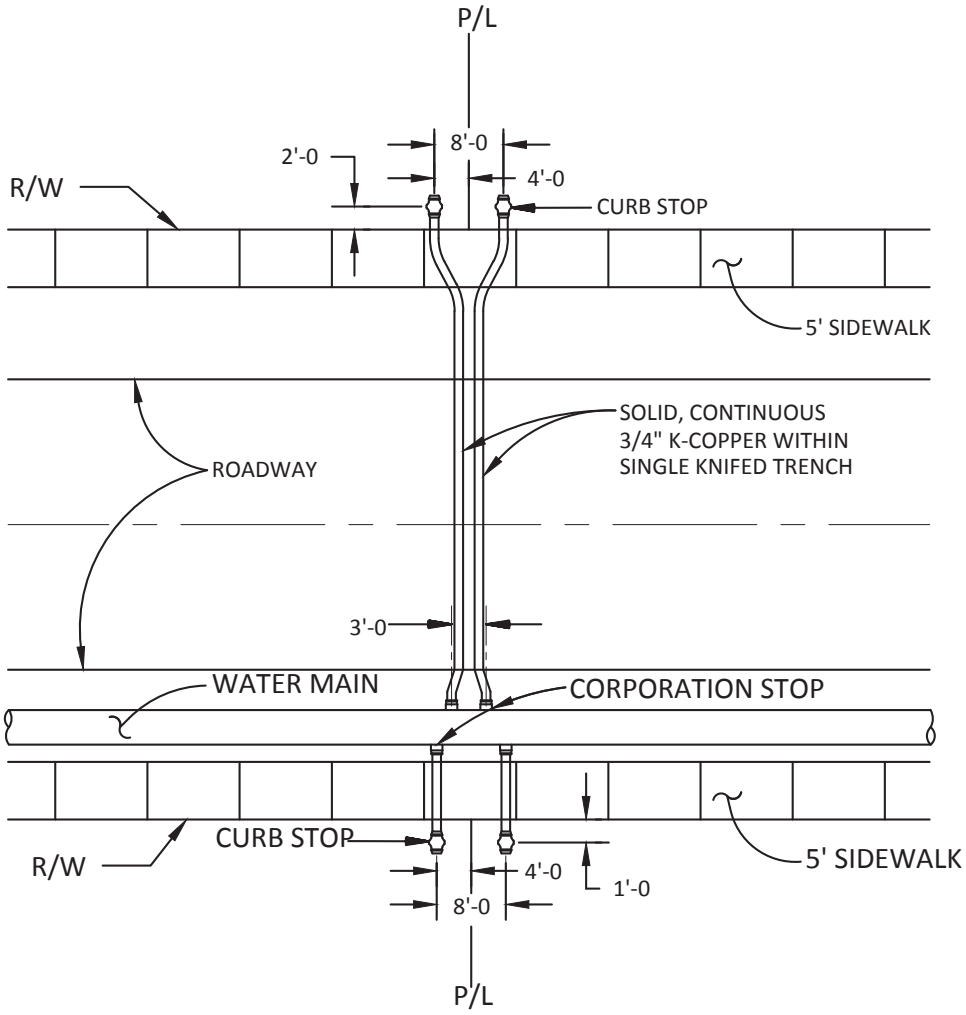
Rev. 12/31/2018



NOTES:

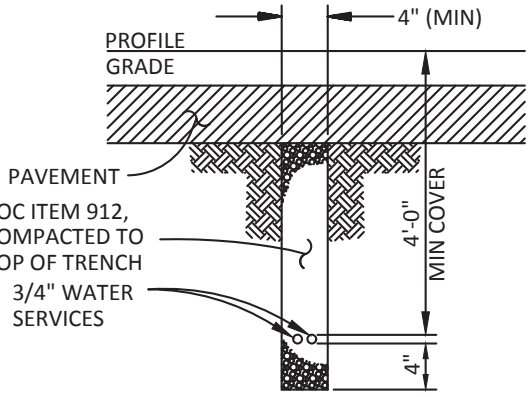
1. THIS DETAIL APPLIES TO LOWERING OF EXISTING WATER MAINS, NOT FOR US IN PROPOSED WATER MAIN PROFILES.
2. TIME AND DURATION OF SHUT DOWN SHALL BE DETERMINED BY THE CITY OF DELAWARE (COD).
3. NOTIFY THE COD - PUBLIC UTILITIES DEPARTMENT 48 HOURS PRIOR TO THE SHUT DOWN, SO THE COD CAN NOTIFY ALL WATER CUSTOMERS AFFECTED BY THE PROPOSED WORK AT LEAST 24 HOURS IN ADVANCE TO THE SHUTDOWN.
4. ALL BENDS SHALL BE SECURED BY RETAINING GLANDS, RODDING OR OTHER METHODS AS APPROVED BY THE COD TO RESTORE MAIN TO SERVICE AS SOON AS POSSIBLE. CONCRETE BACKING SHALL THEN BE PLACED IN ACCORDANCE WITH COD STANDARD DETAILS.
5. THE RELOCATED LINES SHALL BE LAID TO THE NEW LINE AND GRADE, TESTED AND DISINFECTED PRIOR TO SHUT DOWN OF EXISTING MAIN AND CONNECTION OF THE RELOCATED LINES TO THE EXISTING MAIN.
6. ALL WATER LINES SHALL BE DISINFECTED BY SWABBING WITH A 5 PERCENT HYPOCHLORITE SOLUTION IN ACCORDANCE WITH THE APPLICABLE SECTIONS OF THE AWWA C-601.

EST 1808 CITY OF DELAWARE OHIO Public Works Department	STANDARD DETAIL TYPICAL WATER LINE LOWERING	WATER WTRD-3.0 Rev. 12/31/2018



PLAN

NOT TO SCALE



WATER SERVICE TRENCH DETAIL

NOT TO SCALE

NOTE:
MINIMUM DEPTH - 4'-0"
BELOW FINISHED GRADE

NO SPLICES PERMITTED
IN COPPER LINE BETWEEN
CORPORATION AND CURB
STOPS

EST 1808
CITY OF
DELAWARE
OHIO
Public Works Department

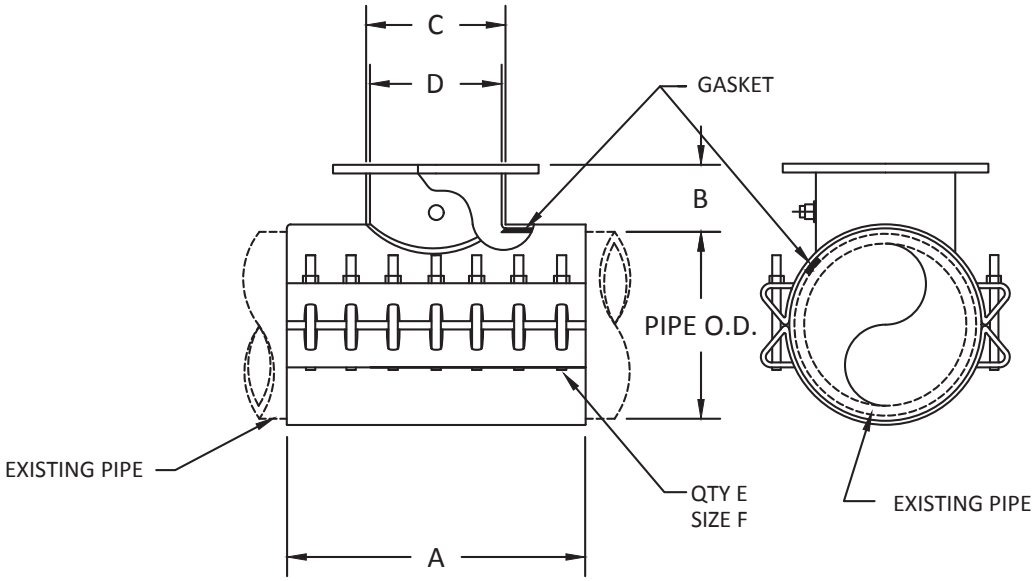
STANDARD DETAIL

WATER SERVICE STREET CROSSINGS
(2 SERVICES IN ONE TRENCH)

WATER

WTRD-4.0

Rev. 12/31/2018



FLANGE SIZE (in.)	A (in.)	B (in.)	C (in.)	D (in.)	E	F (in.)
3	12	5	4-1/32	3-1/2	6	3/4
4	12	5	5-1/32	4-1/2	6	3/4
6	12	5	7-1/32	6-1/2	6	3/4
8	16	5-1/8	9-1/32	8-1/8	8	3/4
10	20	5-1/2	11-1/16	10-1/4	10	3/4
12	24	5-3/4	13-1/16	12-1/4	12	3/4

FOR OUTLETS 14" AND LARGER THE MANUFACTURER OF THE TAPPING VALVE MUST BE SPECIFIED TO ASSURE PROPER ALIGNMENT RECESS DIMENSION.
SIZE ON SIZE TAPPING SLEEVE REQUIRES 1/2" UNDERSIZE CUTTER TO ASSURE PROPER CUTTER CLEARANCE AND COMPLETE SEVERANCE OF THE COUPON
ON NOMINAL PIPE SIZE 7.45 AND SMALLER DIMENSION D IS 6-1/8"

EST 1808
CITY OF
DELAWARE
OHIO
Public Works Department

STANDARD DETAIL

FULL BODY WATER TAP

WATER

WTRD-6.0

Rev. 12/31/2018

Length of Pipe (ft)	Allowable Leakage (gallons per hour)									
	Pipe Size (inches)									
	6	8	12	16	20	24	30	36	42	48
50	0.02	0.03	0.05	0.07	0.08	0.10	0.12	0.15	0.17	0.20
100	0.05	0.07	0.10	0.13	0.17	0.20	0.25	0.30	0.35	0.40
200	0.10	0.13	0.20	0.26	0.33	0.40	0.50	0.60	0.70	0.79
300	0.15	0.20	0.30	0.40	0.50	0.60	0.74	0.89	1.04	1.19
400	0.20	0.26	0.40	0.53	0.66	0.79	0.99	1.19	1.39	1.59
500	0.25	0.33	0.50	0.66	0.83	0.99	1.24	1.49	1.74	1.99
600	0.30	0.40	0.60	0.79	0.99	1.19	1.49	1.79	2.09	2.38
700	0.35	0.46	0.70	0.93	1.16	1.39	1.74	2.09	2.43	2.78
800	0.40	0.53	0.79	1.06	1.32	1.59	1.99	2.38	2.78	3.18
900	0.45	0.60	0.89	1.19	1.49	1.79	2.23	2.68	3.13	3.57
1,000	0.50	0.66	0.99	1.32	1.66	1.99	2.48	2.98	3.48	3.97
2,500	1.24	1.66	2.48	3.31	4.14	4.97	6.21	7.45	8.69	9.93
5,000	2.48	3.31	4.97	6.62	8.28	9.93	12.41	14.90	17.38	19.86
7,500	3.72	4.97	7.45	9.93	12.41	14.90	18.62	22.34	26.07	29.79
10,000	4.97	6.62	9.93	13.24	16.55	19.86	24.83	29.79	34.76	39.72

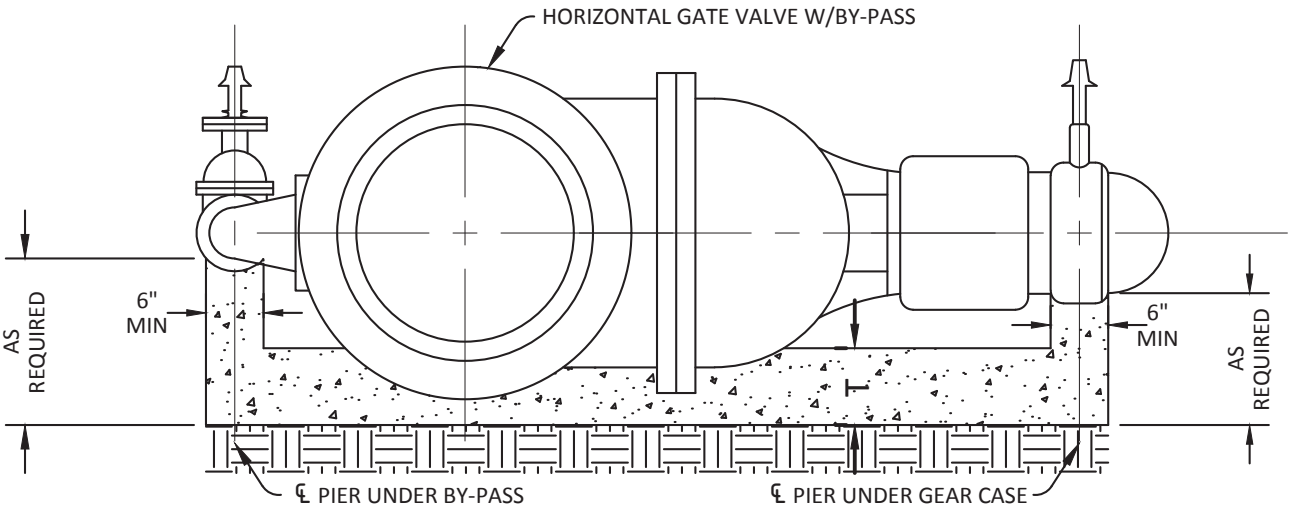
FORMULA: $L = \frac{SD\sqrt{P}}{148{,}000}$

WHERE:

L= ALLOWABLE LEAKAGE (GAL./HR.)
S= LENGTH OF PIPE TESTED IN FEET.
D= NOMINAL PIPE DIAMETER IN INCHES.
P= TEST PRESSURE (150 PSI)

NOTE:

1. THESE CALCULATIONS ARE BASED ON "AWWA C-600-10" SPECIFICATIONS, SECTION 4, HYDROSTATIC TESTING, DATED DECEMBER 1, 2005.
2. WHEN TESTING AGAINST CLOSED METAL-SEATED VALVES, AN ADDITIONAL LEAKAGE PER CLOSED VALVE OF 0.0078 GAL./HR./IN. OF NOMINAL VALVE SIZE WILL BE ALLOWED.



NOTES:

1. DIMENSIONS SHALL BE VARIED AS DIRECTED TO SUIT MAKE OF VALVE FURNISHED.
2. WIDTH SHALL BE AS REQUIRED TO ALLOW ACCESS TO BOLTS. (6" MIN.)
3. T = 6" MINIMUM
4. A LAYER OF POLYETHYLENE SHEETING REQUIRED BETWEEN CONCRETE AND WATERLINE, VALVES, ETC

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CITY OF
DELAWARE
OHIO
Public Works Department

STANDARD DETAIL

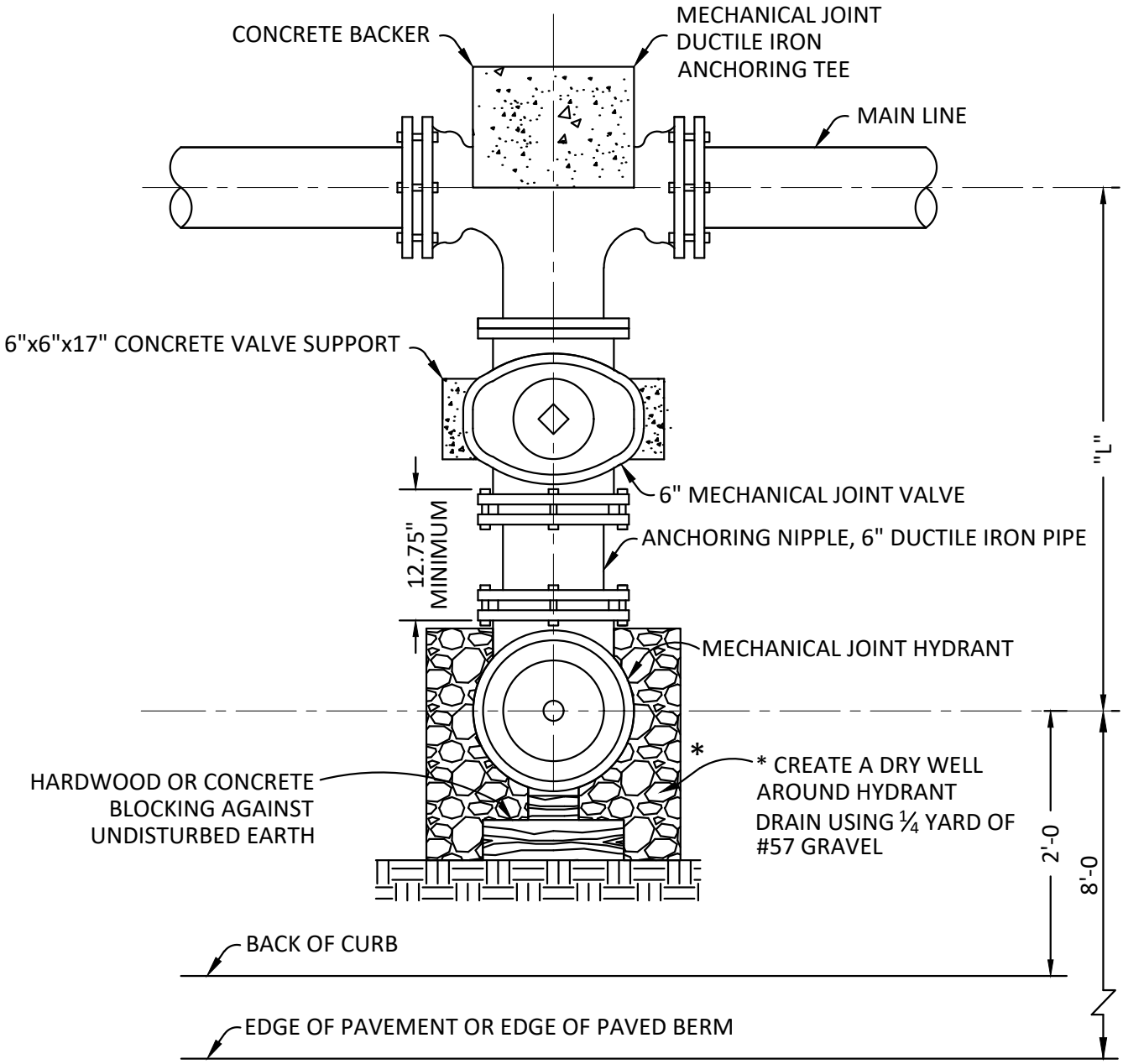
CONCRETE VALVE SUPPORT

HORIZONTAL GATE VALVER W/BY-PASS

WATER

WTRD-8.0

Rev. 12/31/2018



MAIN LINE	DIMENSION "L" (MINIMUM)
6"	35"
8"	36"
12"	39"
16"	42"

NOTES:

1. FIRE HYDRANT SHALL HAVE A MAXIMUM BURY DEPTH OF 7'-0.
2. MODIFICATION OF THE HYDRANT LEAD TO MEET THIS REQUIREMENT SHALL BE MADE IN THE SECTION FROM THE VALVE TO THE HYDRANT AS PER STANDARD DETAIL WTRD-10.
3. FIRE HYDRANTS SHALL BE SET A MINIMUM OF 6'-0 FROM ALL DRIVEWAY OPENINGS.
4. A LAYER OF POLYETHYLENE SHEETING REQUIRED BETWEEN CONCRETE AND WATERLINE, VALVES, ETC.
5. DEAD-END WATER LINES SHALL TERMINATE WITH A FIRE HYDRANT AND WATCH VALVE FOLLOWED BY A MAIN LINE VALVE, AN ADDITIONAL SECTION OF WATER LINE, AND THEN A PLUG & THRUST BLOCK.

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CITY OF
DELAWARE
OHIO
Public Works Department

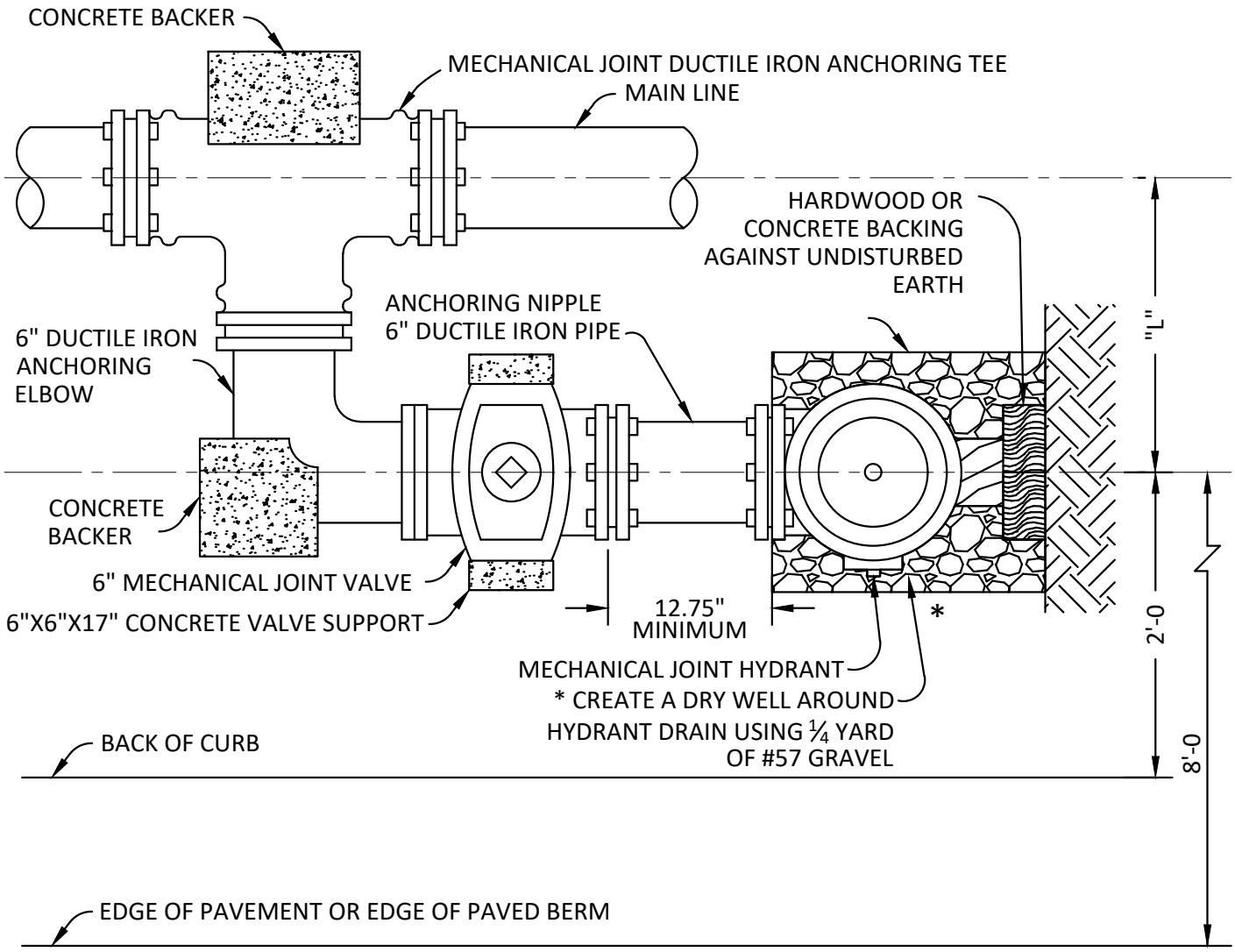
STANDARD DETAIL

TYPICAL HYDRANT SETTING TYPE "A"

WATER

WTRD-9.0

8/14/2025



MAIN LINE	DIMENSION "L"	
	TYPE "B"	TYPE "B" MOD.
6"	24"	19"
8"	25"	20"
12"	28"	23"
16"	31"	26"

TYPE"B": LONG SIDE BEND TO TEE
TYPE"B MODIFIED": SHORT SIDE BEND TO TEE (REQUIRES APPROVAL PRIOR TO SPECIFYING IN PLANS)

NOTES:

1. FIRE HYDRANTS SHALL BE SET A MINIMUM OF 6'-0 FROM ALL DRIVEWAY OPENINGS.
2. FIRE HYDRANT SHALL HAVE A MAXIMUM BURY OF 7'-0. MODIFICATION OF THE HYDRANT LEAD TO MEET THIS REQUIREMENT SHALL BE IN THAT SECTION FROM THE VALVE TO THE HYDRANT.
3. A LAYER OF POLYETHYLENE SHEETING REQUIRED BETWEEN CONCRETE AND WATERLINE, VALVES, ETC.
4. DEAD-END WATER LINES SHALL TERMINATE WITH A FIRE HYDRANT AND WATCH VALVE FOLLOWED BY A MAIN LINE VALVE, AN ADDITIONAL SECTION OF WATER LINE, AND THEN A PLUG & THRUST BLOCK.

EST 1808 CITY OF DELAWARE OHIO
Public Works Department

STANDARD DETAIL

SPECIAL HYDRANT SETTING

TYPE "B" AND "B" MODIFIED

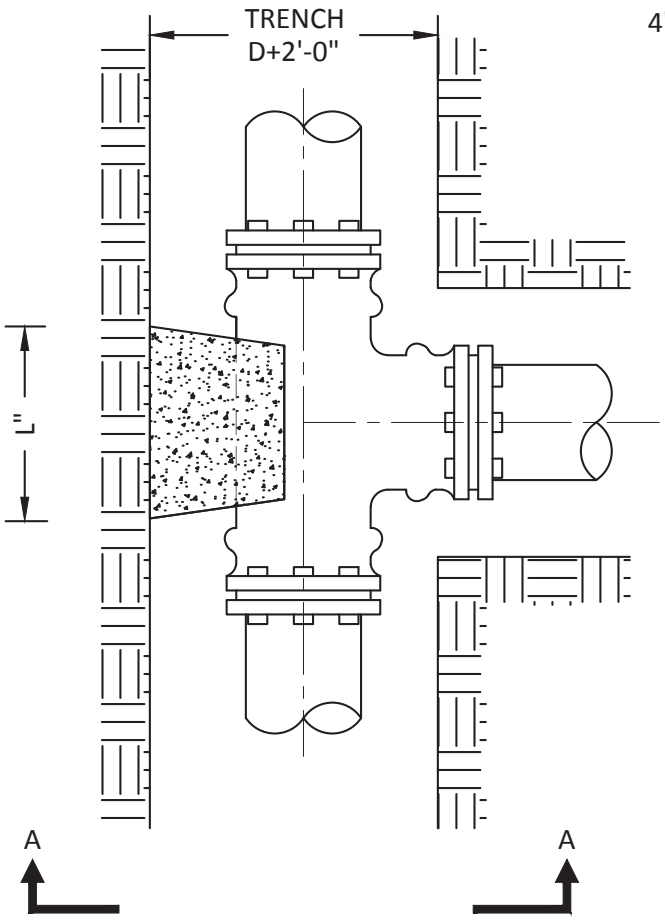
WATER

WTRD-10.0

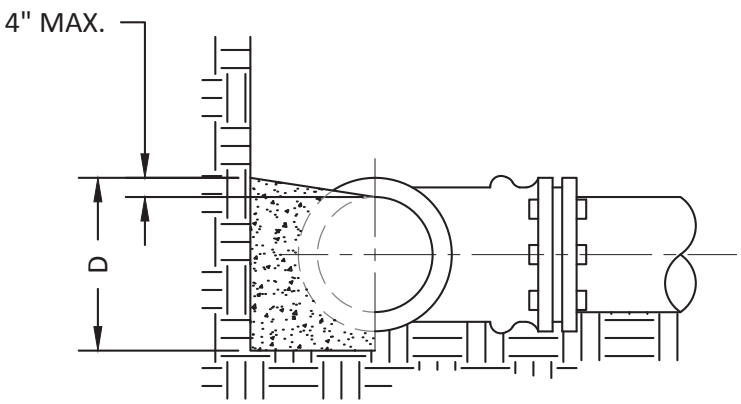
8/14/2025

RUN	BRANCH																							
	3"			4"			6"			8"			12"			16"			20"			24"		
	L	D	V	L	D	V	L	D	V	L	D	V	L	D	V	L	D	V	L	D	V	L	D	V
3"	12	5	0.5																					
4"	10	6	0.5	11	8	0.8																		
6"	9	7	0.5	11	8	0.8	18	12	1.9															
8"	8	8	0.5	10	9	0.7	18	12	1.9	23	16	3.5												
12"	6	12	0.6	8	12	0.8	18	12	1.9	23	16	3.5	38	22	8.7									
16"	6	16	0.8	6	16	0.8	14	16	2.0	20	18	3.3	36	23	8.7	49	30	13.6						
20"	6	20	1.0	6	20	1.0	11	20	1.9	18	20	3.3	35	24	8.7	46	32	13.6	60	38	26.5			
24"	6	24	1.2	6	24	1.2	9	24	1.9	15	24	3.3	30	28	8.7	42	36	14.0	54	42	26.3	68	48	45.4

NOTES:
1. REINFORCING STEEL WILL BE USED AS REQUIRED BY THE ENGINEER
2. DIMENSIONS "L" AND "D" ARE PROVIDED IN INCHES
3. THE APPROXIMATE VOLUME OF CONRCETE "V" IS IN CUBIC FEET.



PLAN VIEW



SECTION A-A

NOTES:

1. BACKER DESIGNED FOR 3000 PSF SOIL BEARING.
2. CONCRETE TO BE PLACED AGAINST UNDISTURBED EARTH.
3. PROVIDE CLEARANCE FOR REMOVAL OF BOLTS.
3. A LAYER OF POLYETHYLENE SHEETING REQUIRED BETWEEN CONCRETE AND WATERLINE, VALVES, ETC.

EST 1808
CITY OF DELAWARE OHIO
Public Works Department

STANDARD DETAIL

BACKING FOR TEES

WATER

WTRD-11.0

Rev.12/31/2018

CITY OF DELAWARE OHIO EST 1808

Public Works Department

BACKING FOR VERTICAL BENDS

(OVER BENDS ONLY)

STANDARD DETAIL

WATER

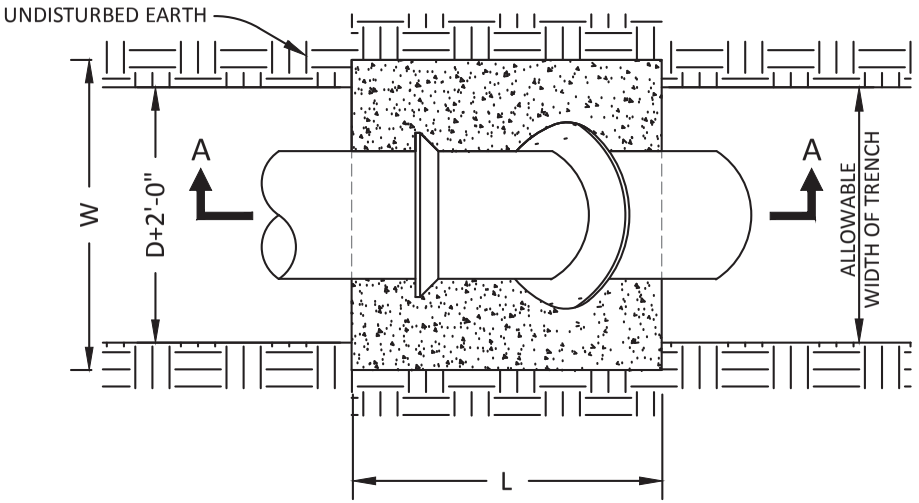
WTRD-12.0

Rev. 12/31/2018

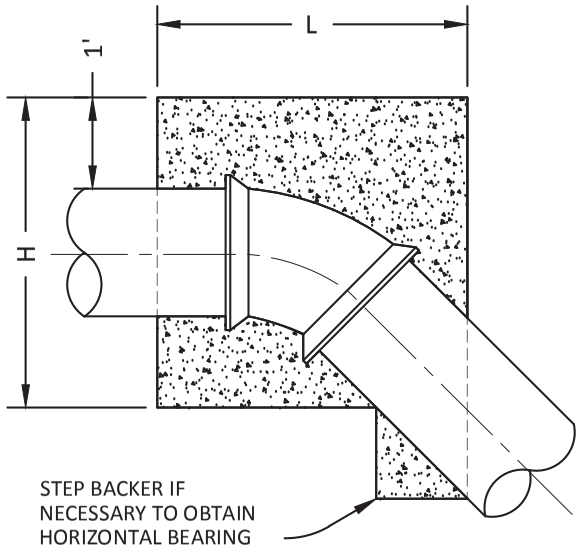
SIZE OF PIPE	DEGREE OF BEND											
	11 ¼°				22 ½°				45°			
	L"	W"	H"	V (c.f.)	L"	W"	H"	V (c.f.)	L"	W"	H"	V (c.f.)
3"	12	18	12	1.5	13	25	16	3.0	18	30	19	5.9
4"	12	24	16	2.6	16	30	18	5.0	22	36	24	11.0
6"	12	48	18	6.0	15	43	36	13.4	30	55	24	22.9
8"	12	63	24	10.5	18	57	34	20.2	36	57	33	39.2
12"	20	54	36	22.6	37	62	37	49.0	48	62	51	87.9
16"	31	65	38	44.3	60	65	39	88.1	65	65	65	159.2
20"	45	70	40	72.8	56	70	60	136.2	72	76	78	247.0
24"	41	72	54	92.3	67	74	69	198.0	88	84	84	359.1
REINFORCING STEEL WILL BE USED AS REQUIRED BY THE ENGINEER												

NOTES:

1. BACKER TO BE CENTERED HORIZONTALLY IN BEND.
2. A LAYER OF POLYETHYLENE SHEETING REQUIRED BETWEEN CONCRETE AND WATERLINE, VALVES, ETC.

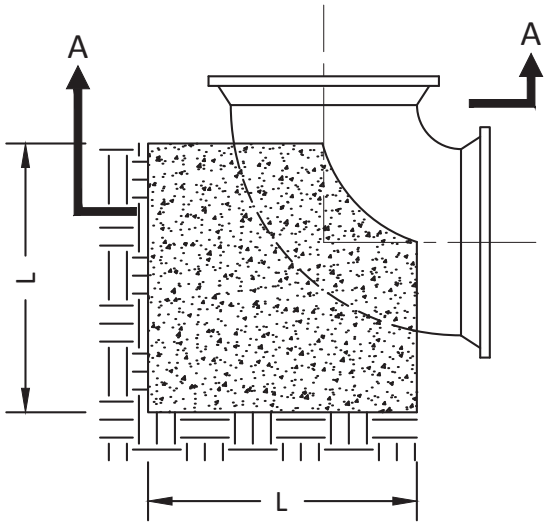


PLAN VIEW

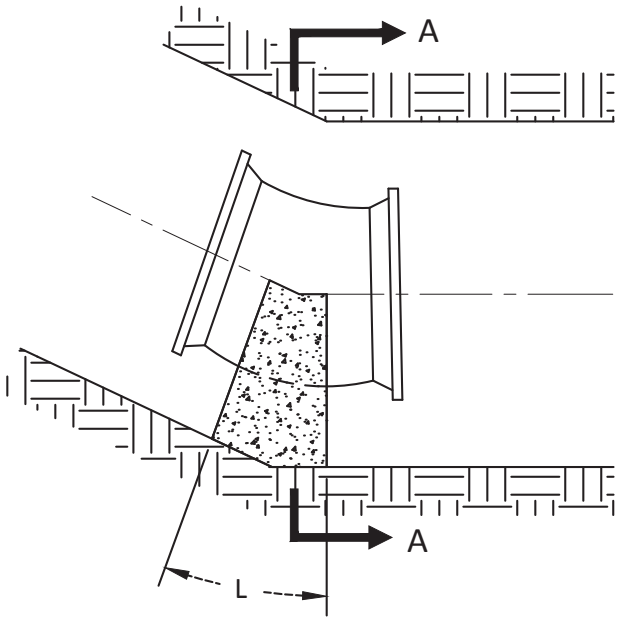


SECTION A-A

SIZE OF PIPE	DEGREE OF BEND											
	11 ¼°			22 ½°			45°			90°		
	L"	D"	V (c.f.)	L"	D"	V (c.f.)	L"	D"	V (c.f.)	L"	D"	V (c.f.)
3"	4	3	0.1	6	4	0.2	10	4	0.3	10	4	0.3
4"	5	4	0.2	9	5	0.4	14	5	0.6	14	5	0.6
6"	8	6	0.5	12	7	0.7	20	8	1.4	18	9	1.7
8"	9	8	0.7	16	9	1.4	24	12	2.7	25	11	4.0
12"	14	12	1.8	24	14	3.6	36	18	6.8	32	18	10.7
16"	18	16	3.4	32	18	6.7	36	32	13.4	41	26	25.4
20"	25	20	6.4	30	30	11.5	49	36	20.5	50	32	46.5
24"	27	24	9.0	39	34	18.4	60	42	35.0	58	40	77.7
REINFORCING STEEL WILL BE USED AS REQUIRED BY ENGINEER												

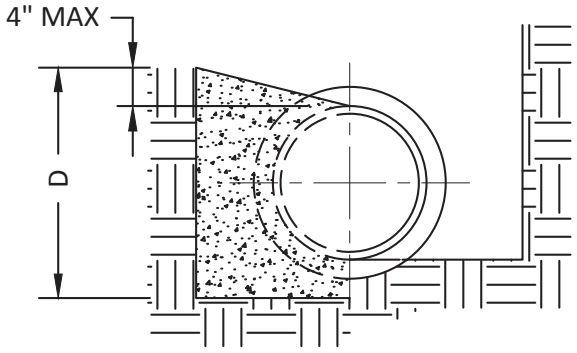


90° BENDS



BENDS LESS THAN 90°

NOTES:
1. BACKER DESIGNED FOR 3000 PSF SOIL BEARING.
2. CONCRETE TO BE PLACED AGAINST UNDISTURBED EARTH.
3. A LAYER OF POLYETHYLENE SHEETING REQUIRED BETWEEN CONCRETE AND WATERLINE, VALVES, ETC.



SECTION A-A

EST 1808
CITY OF DELAWARE OHIO
Public Works Department

STANDARD DETAIL

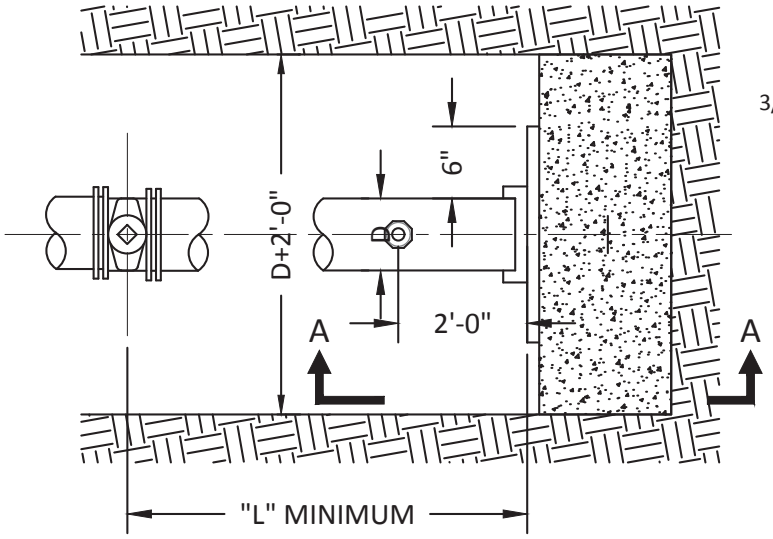
BACKING FOR BENDS

HORIZONTAL AND VERTICAL SAG

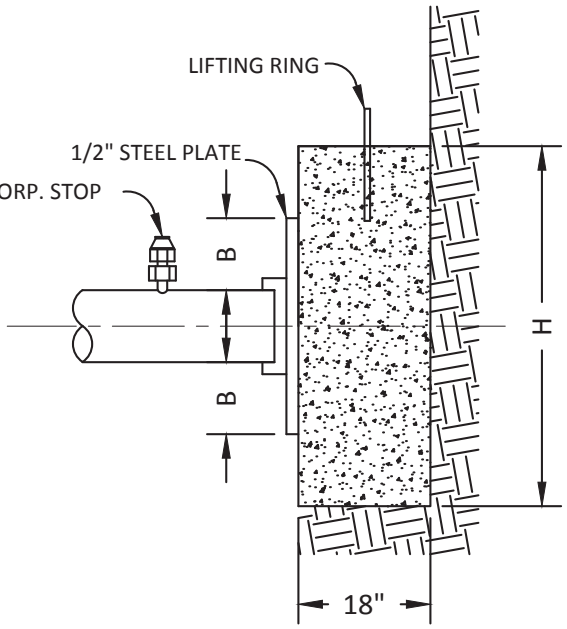
WATER

WTRD-13.0

Rev. 12/31/2018

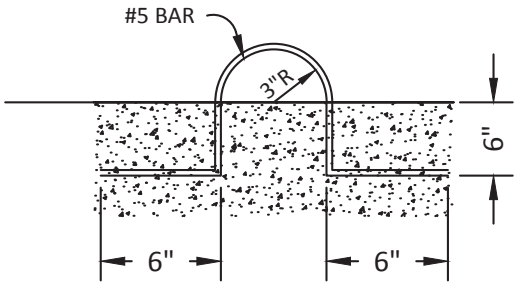


PLAN VIEW



SECTION A-A

PIPE DIAMETER	H	B	L	VOLUME CU. FT.
3"	5"	1"	10'	1.43
4"	6"	1"	10'	1.76
6"	8"	1"	10'	2.52
8"	12"	1"	10'	4.00
12"	23"	3"	18'	8.64
16"	37"	3"	18'	15.39



LIFT RING DETAIL

NOTES:

1. BACKER DESIGNED FOR 3000 PSF SOIL BEARING.
2. END OF PIPE CAPPED OR PLUGGED.
3. GREASE STEEL PLATE WHERE IN CONTACT WITH CONCRETE BACKER.
4. PLACE CONCRETE AGAINST UNDISTURBED SOIL.
5. THOROUGHLY COMPACT BACKFILL BETWEEN VALVE AND END OF PIPE.
6. A LAYER OF POLYETHYLENE SHEETING REQUIRED BETWEEN CONCRETE AND WATERLINE, VALVES, ETC.

EST 1808 CITY OF DELAWARE OHIO
Public Works Department

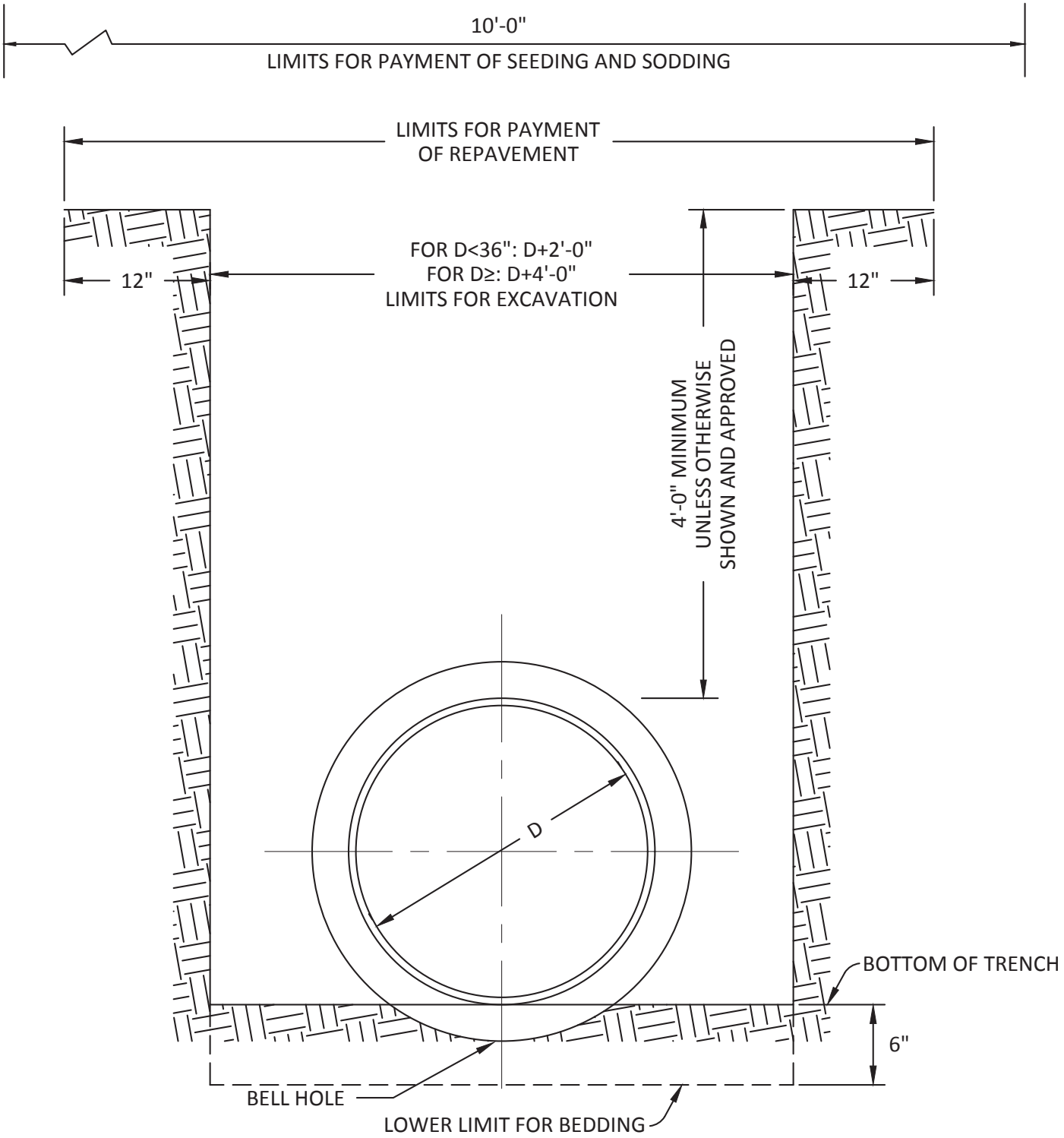
STANDARD DETAIL

THRUST BLOCK DETAIL

WATER

WTRD-14.0

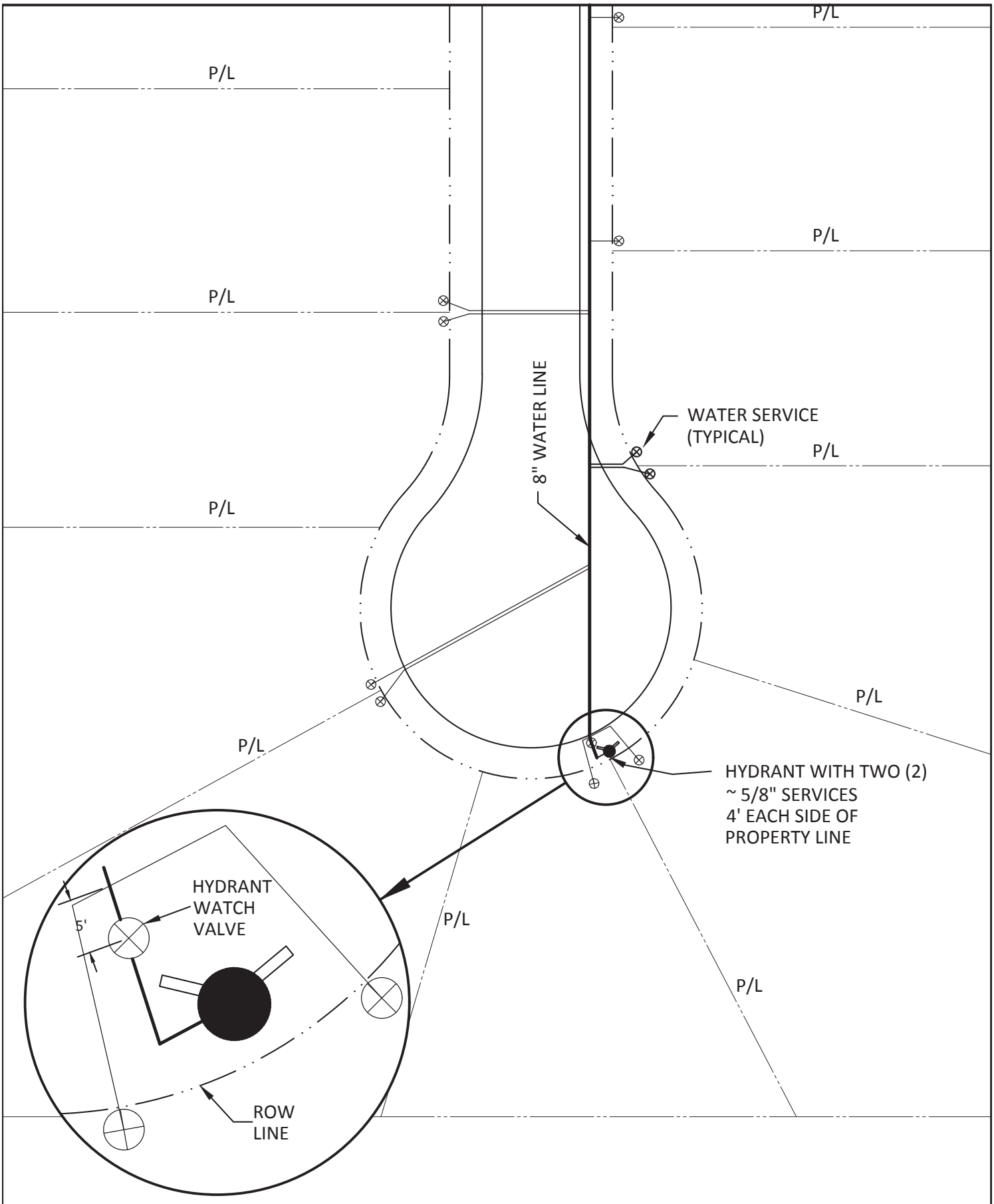
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NOTES:

1. FOR 16" DIAMETER AND SMALLER WITH 10' OR LESS DEPTH OF COVER, PROVIDE 6" BEDDING IF ROCK OR UNSUITABLE MATERIAL IS FOUND AT THE BOTTOM OF TRENCH EXCAVATION.
2. FOR 16" DIAMETER AND SMALLER WITH OVER 10' DEPTH OF COVER, PROVIDE 6" BEDDING.
3. FOR ALL PIPE LARGER THAN 16" DIAMETER, PROVIDE 6" BEDDING.
4. BEDDING SHALL BE NO. 57 STONE.

EST 1808 CITY OF DELAWARE OHIO Public Works Department	STANDARD DETAIL TYPICAL WATER TRENCH	WATER WTRD-15.0 Rev. 12/31/2018



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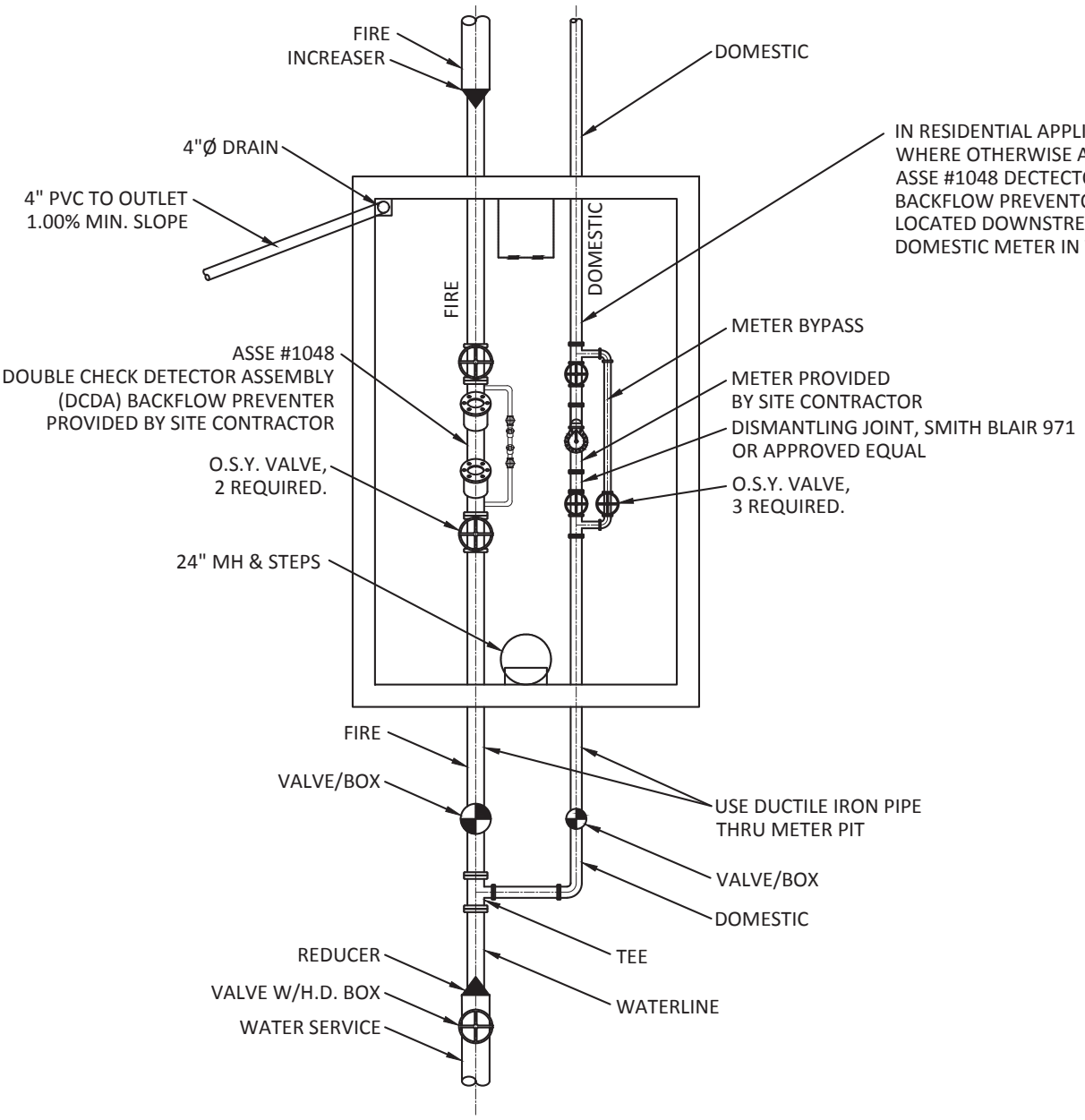
STANDARD DETAIL

WATER SERVICE DETAIL FOR CUL-DE-SAC

WATER

WTRD-16.0

Rev. 12/31/2018



METER VAULTS - 3" THROUGH 12"

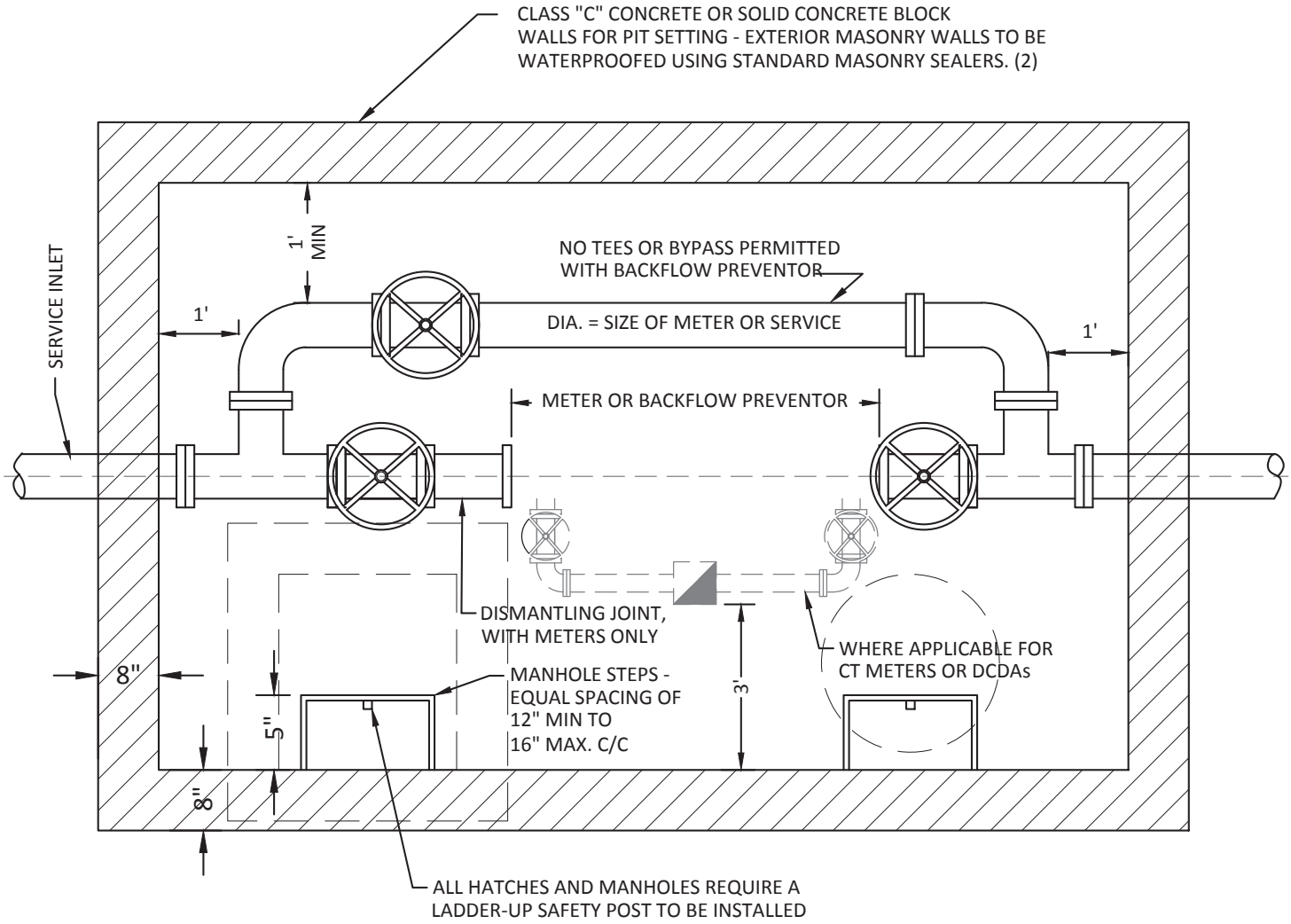
MATERIAL

1. THE ISOLATION VALVES SHALL BE FLANGED RESILIENT WEDGE OS & Y TYPE VALVES, AMERICAN FLOW CONTROL SERIES 2800 OR PRE-APPROVED EQUAL.
2. ALL 2" AND LARGER METERS SHALL HAVE A FLANGED Z-PLATE STRAINER DIRECTLY PRIOR TO THE WATER METER.
3. ALL VAULTS SHALL HAVE GRAVITY DRAIN.
4. BACKFILL FOR THE METER VAULT SHALL BE ODOT #57 STONE.
5. THE PROPERTY OWNER SHALL CONTACT THE CITY TO OBTAIN CURRENT INFORMATION ON WHERE TO PURCHASE 3" AND LARGER DOMESTIC WATER METERS. THE METER IS TO BE SENT TO THE CITY OF DELAWARE 2 DAYS PRIOR TO THE INTENDED INSTALLATION DATE: DEPARTMENT OF PUBLIC UTILITIES, WATER DISTRIBUTION DIVISION.

INSTALLATION

1. THE METER VAULT IS TO BE INSTALLED PER THE CITY OF DELAWARE DRAWINGS AND SPECIFICATIONS.
2. THE PROPERTY OWNER SHALL CONFIRM THAT THE ELEVATION OF THE GRAVITY DRAIN DISCHARGE POINT WILL DRAIN THE VAULT.
3. THE CITY OF DELAWARE WILL DELIVER THE WATER METER TO THE JOB SITE UPON REQUEST BY THE PROPERTY OWNER.
4. THE METER IS TO BE INSTALLED SUCH THAT THERE ARE 5 PIPE DIAMETERS OF STRAIGHT PIPE UPSTREAM OF THE METER STRAINER (INCLUDING THE VALVE) TO THE TEE AND 3 PIPE DIAMETERS OF STRAIGHT PIPE DOWNSTREAM OF THE METER (FROM THE METER TO THE VALVE).
5. ALL MECHANICAL JOINTS WITHIN THE METER VAULT SHALL BE FACTORY MANUFACTURED FLANGES; NO UNI-FLANGES ARE PERMITTED.
6. ALL JOINTS AND FITTINGS LOCATED ON THE SUPPLY SIDE WITH 20 FEET OF THE METER VAULT SHALL BE RESTRAINED USING AN APPROVED MECHANICAL JOINT RESTRAINT.

EST 1808 CITY OF DELAWARE OHIO Public Works Department	STANDARD DETAIL 3" TO 12" DUAL METER SETTING DETAIL	WATER WTRD-17.0 Rev. 12/31/2018

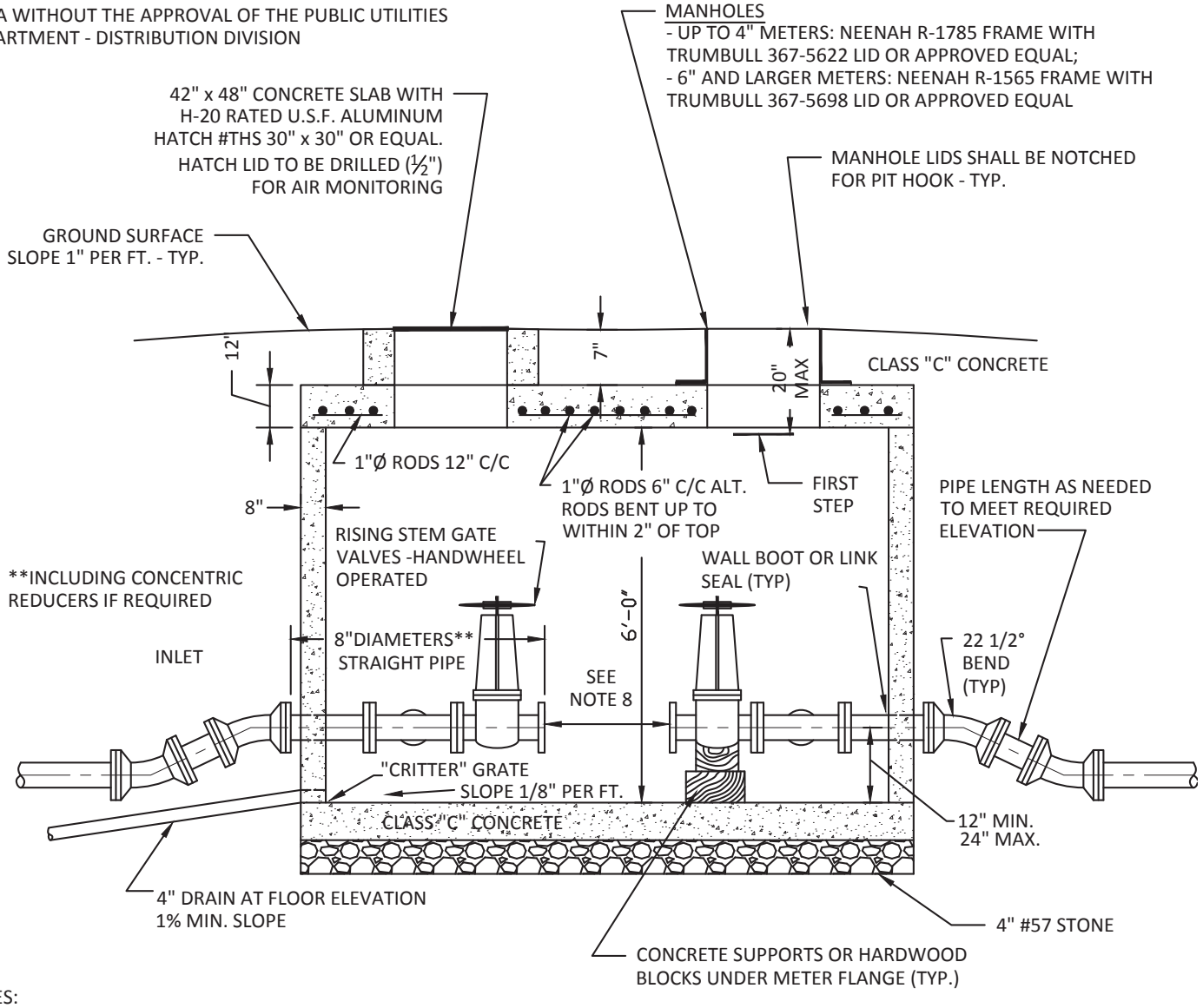


NOTES:

1. METERS SHALL BE EITHER A COMPOUND TURBINE (BADGER OR APPROVED EQUAL) OR ULTRASONIC (OCTAVE BY MASTER METER OR APPROVED EQUAL), AND SHALL BE APPROVED BY THE PUBLIC UTILITIES DEPARTMENT.
2. BACKFLOW PREVENTORS SHALL BE ASSE 1048 COMPLIANT DOUBLE CHECK DETECTOR ASSEMBLYS (DCDA) AND SHALL BE APPROVED BY THE PUBLIC UTILITIES DEPARTMENT.
3. AN APPROVED PRECAST METER PIT MAY BE USED IN LIEU OF A CONSTRUCTED PIT FOR OUTSIDE SETTINGS.
4. PROVIDE A DISMANTLING JOINT BETWEEN THE METER AND VALVE ON THE INLET SIDE, SMITH-BLAIR 971 OR APPROVED EQUAL.

EST 1808 CITY OF DELAWARE OHIO Public Works Department	STANDARD DETAIL METER VAULT 3" TO 12"	WATER WTRD-18.1 Rev. 12/31/2018

NOTE:
METER VAULTS SHALL NOT BE INSTALLED IN A PAVED AREA WITHOUT THE APPROVAL OF THE PUBLIC UTILITIES DEPARTMENT - DISTRIBUTION DIVISION



NOTES:

1. A SUMP PUMP WILL BE REQUIRED WHEREVER ADEQUATE DRAINAGE IS NOT AVAILABLE.
2. USE OF A PUMP MUST BE APPROVED BY THE PUBLIC UTILITIES DEPARTMENT
3. ALL VALVES 3" AND LARGER SHALL BE A RESILIENT WEDGE VALVE AND SHALL BE EQUIPPED WITH AN OUTSIDE SCREW AND YOKE ASSEMBLY (O.S. & Y.).
4. THE VAULT FLOOR SHALL BE A MIN. OF 18" ABOVE THE FLOW LINE OF THE DRAINAGE DITCH OR STORM SEWER.
5. THE OWNER OR AGENT SHALL PURCHASE THE WATER METER NEEDED AND DELIVER IT TO THE PUBLIC UTILITIES DEPT. 3080 US 23 NORTH, DELAWARE,OH. THE OWNER SHALL CONTACT THE PUBLIC UTILITIES DEPT. 48 HOURS PRIOR TO THEIR NEED FOR THE METER TO BE DELIVERED TO THE SITE.
6. ALL MECHANICAL JOINTS WITHIN THE METER VAULT SHALL BE FACTORY MANUFACTURED FLANGES; NO UNIFLANGES ARE PERMITTED.
7. ALL JOINTS AND FITTINGS LOCATED ON THE SUPPLY SIDE WITHIN 20 FEET OF THE METER VAULT SHALL BE RESTRAINED USING AN APPROVED MECHANICAL JOINT RESTRAINT.
8. THE LENGTH BETWEEN VALVES SHALL BE AS NEEDED TO ACCOMODATE BACKFLOW PREVENTOR OR METER AND DISMANTLING JOINT, SEE STANDARD DETAIL WTRD-18.1.

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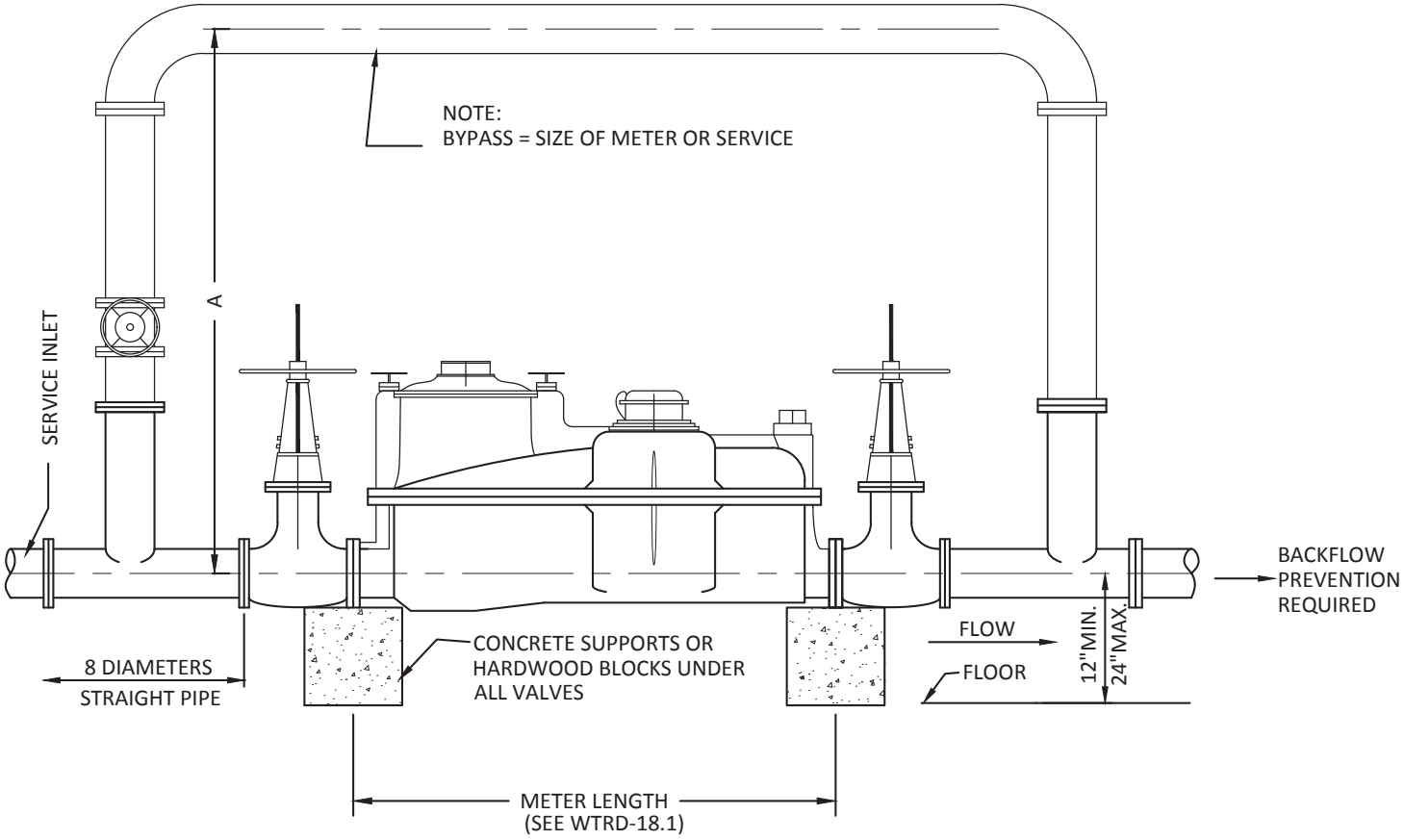
STANDARD DETAIL

METER SETTING 3" THROUGH 12" METERS

WATER

WTRD-18.2

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NOTES:

1. TEES AND BYPASS NOT REQUIRED FOR DCDA OR METERS LESS THAN 2"
2. BYPASS MUST BE INSTALLED IN VERTICAL POSITION
3. WALL CLEARANCE: THERE SHALL BE A MINIMUM SIDE CLEARANCE OF 24" FOR ALL METER TYPES AND SIZES FROM THE NEAREST PIPE EXTERIOR TO THE NEAREST BUILDING WALL AND/OR OBSTRUCTION. THIS MINIMUM SIDE CLEARANCE SHALL BE MAINTAINED FROM INLET VALVE TO OUTLET VALVE.
4. VALVING: 3" AND LARGER SHALL BE GATE VALVES WITH OUTSIDE STEMS AND YOKES (O.S.& Y.).

CLEARANCE REQUIRED "A"		
METER SIZE	CT	FMCT
3"	42"	48"
4"	45"	52"
6"	54"	60"
8"	N/A	70"
10"	N/A	78"
12"	N/A	86"

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STANDARD DETAIL

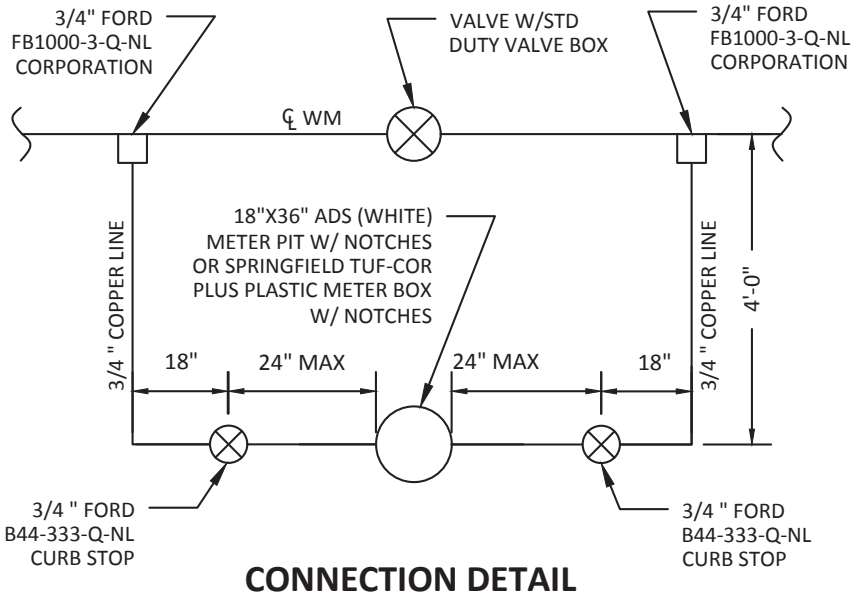
METER SETTING FOR INSIDE BUILDINGS

3" THROUGH 12" (DOMESTIC OR PROCESS)

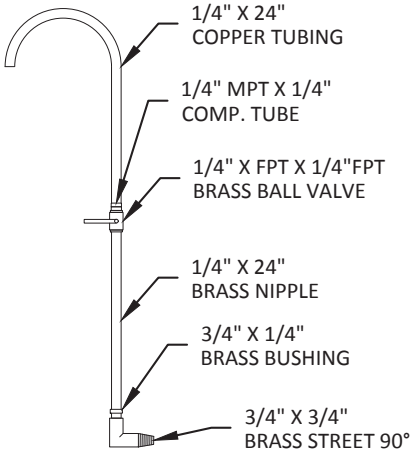
WATER

WTRD-18.3

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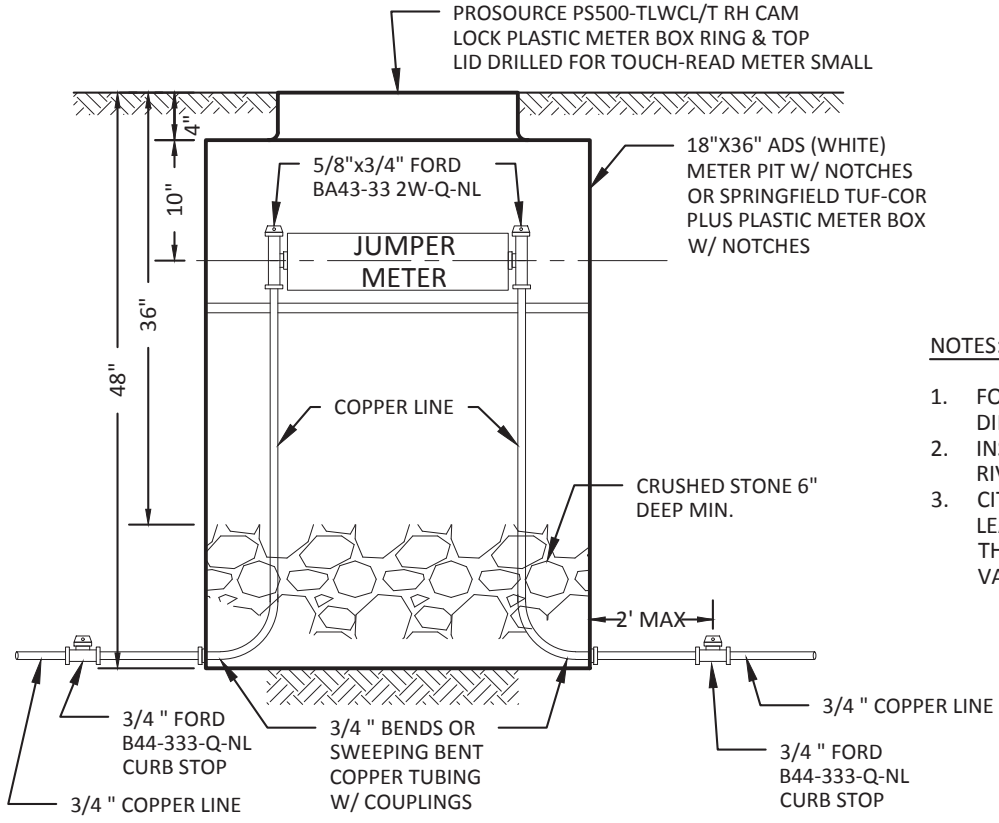


CONNECTION DETAIL



REMOVABLE SAMPLING FIXTURE FOR INSPECTION

CONTRACTOR SHALL PROVIDE TO CITY, DO NOT INSTALL IN PIT.



NOTES:

1. FOR USE AT RIVER CROSSINGS OR WHERE DIRECTED BY THE CITY.
2. INSTALLATON TO BE ON SUPPLY SIDE OF RIVER CROSSING.
3. CITY TO PROVIDE METER WHEN TESTING FOR LEAKGE. CONTRACTOR SHALL INSTALL THREADED PLUGS INTO THE METER ANGLE VALVES AT TIME OF CONSTRUCTION.

INSPECTION METER PIT DETAIL

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STANDARD DETAIL

INSPECTION METER PIT DETAILS

WATER

WTRD-19.0

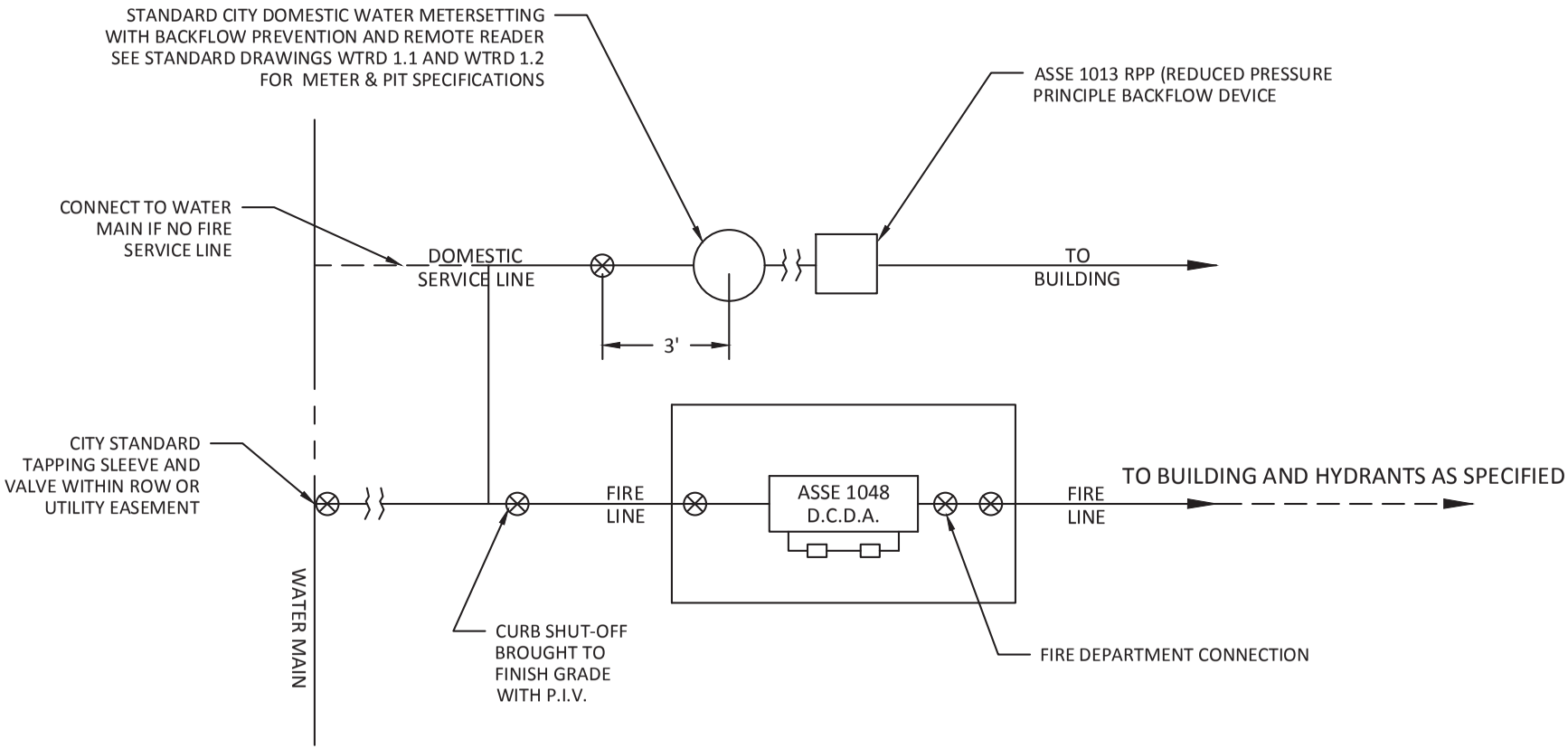
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CITY OF DELAWARE OHIO EST 1808

DOMESTIC AND FIRE SERVICE METER CONFIGURATION

NO SCALE



NOTE: THE CITY PROVIDES 5/8" METERS ONLY

STANDARD DETAIL

5/8" TO 2" METERS FOR DOMESTIC AND FIRE SERVICE

WATER

WTRD-20.0

Rev. 12/31/2018