

**LANCASTER COUNTY WATER AND SEWER DISTRICT WATER GENERAL NOTES**

1. THESE NOTES ARE NOT INCLUSIVE OF ALL WATER & SEWER SPECIFICATIONS; PLEASE REFER TO LANCASTER COUNTY WATER AND SEWER DISTRICTS STANDARD WATER & SEWER SPECIFICATIONS FOR DETAILED INFORMATION. ALL OF THE FOLLOWING WILL BE AT CONTRACTOR'S EXPENSE ALONG WITH ANY OTHER REQUIRED INFRASTRUCTURE AS DETERMINED BY LANCASTER COUNTY WATER AND SEWER DISTRICT (LCWSD).
2. FOR ADDITIONAL INFORMATION ON MOST RECENT LCWSD WATER SPECIFICATIONS AND/OR DEVELOPER POLICY, PLEASE VISIT OUR WEB SITE [WWW.LCWASD.ORG](http://WWW.LCWASD.ORG) OR CONTACT LCWSD WATER SUPERINTENDENT OR INSPECTOR.
3. CONSTRUCTION OF WATER SYSTEMS SHALL COMPLY WITH ALL APPLICABLE STATE AND LOCAL REGULATIONS AND THE STANDARD SPECIFICATIONS OF LCWSD. ALL MATERIAL SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS OF THE LCWSD.
4. SANITARY SEWER MAINS AND WATER MAINS SHALL BE LAID AT LEAST 10' (TEN FEET) APART. IF SITE CONDITIONS PRECLUDE THIS HORIZONTAL SEPARATION, THEN THE WATER MAIN SHALL BE LAID IN A SEPARATE TRENCH WITH AT LEAST 18" VERTICAL SEPARATION.
5. WHERE WATER MAINS CROSS OVER SANITARY SEWER MAINS, A MINIMUM VERTICAL SEPARATION OF 18" SHALL BE MAINTAINED.
6. THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR CONTACTING ALL APPROPRIATE PARTIES AND ASSURING THAT EXISTING UTILITIES ARE LOCATED PRIOR TO CONSTRUCTION.
7. THE CONTRACTOR IS FULLY RESPONSIBLE FOR VERIFYING THE SIZE AND LOCATION OF ALL DRAINAGE PIPES AND/OR STRUCTURES, OR OTHER UNDERGROUND UTILITIES, AFFECTED BY INSTALLATION OF THE WATER.
8. EACH LOT SHALL BE SERVED BY AN INDIVIDUAL 3/4" WATER SERVICE, LOCATED APPROXIMATELY ON LOT LINES. THE WATER SERVICE LINE SHALL BE LOCATED SUCH THAT THE WATER METER IS NOT LOCATED WITHIN THE DRIVEWAY. WATER METERS WILL NOT BE SET IF WATER METER BOXES, VALVE BOXES OR THEIR APPURTENANCES ARE DAMAGED OR IMPROPERLY POSITIONED. ALL WATER METER BOXES SHALL BE AS APPROVED BY LCWSD AND SHALL BE INSTALLED PER THE STANDARD DETAIL.
9. LCWSD APPROVED 12GA STRANDED COATED TRACER WIRE SHALL BE INSTALLED ON ALL WATER MAINS AND SERVICE CONNECTIONS. THE WIRE SHALL EXTEND INTO AND TO THE TOP OF THE METER OR VALVE BOX AT ALL LOCATIONS WITHOUT EXCEPTION.
10. THE CONTRACTOR SHALL SUBMIT AS-BUILT DRAWINGS OF THE WATER AND SANITARY SEWER IMPROVEMENTS SPECIFIED IN THESE PLANS UPON COMPLETION OF THE RESPECTIVE PHASES OF WORK.
11. THE CONTRACTOR SHALL AT ALL TIMES PROVIDE AND MAINTAIN AMPLE MEANS AND EQUIPMENT WITH WHICH TO REMOVE AND PROPERLY DISPOSE OF ANY AND ALL WATER ENTERING THE EXCAVATION OR OTHER PARTS OF THE WORK, AND KEEP ALL EXCAVATIONS DRY UNTIL SUCH TIME AS PIPE LAYING AND GRADING IS COMPLETED AND STRUCTURES AROUND THE PIPE IN UN-BACKFILLED TRENCHES OR OVER MASONRY TO BE BUILT ARE COMPLETED. NO WATER SHALL BE ALLOWED TO RISE UNTIL THE CONCRETE OR MORTAR HAS SET (24 HOURS MIN.). ALL WATER PUMPED OR DRAINED FROM THE WORK SHALL BE DISPOSED OF IN SUCH A MANNER AS TO PREVENT SILTATION AND/OR EROSION TO ADJACENT PROPERTY OR OTHER CONSTRUCTION.
12. TREES ARE NOT TO BE PLANTED OVER WATER MAINS, SEWER MAINS OR WITHIN THEIR EASEMENTS.
13. NO PROPOSED OR FUTURE SIDEWALKS SHALL BE INSTALLED OVER ANY WATER MAIN WITHIN THE PROJECT UNLESS APPROVED BY LCWSD. WATER METERS AND SEWER SERVICE CONNECTIONS SHALL BE LOCATED OUTSIDE OF ANY SIDEWALK.
14. THE CONTRACTOR IS TO PROVIDE A MINIMUM OF 48 HOUR NOTICE TO OWNER OR REPRESENTATIVE PRIOR TO INTERRUPTION OF ANY EXISTING UTILITY, IF BEING UTILIZED ALSO LANCASTER COUNTY WATER AND SEWER DISTRICT.
15. THE CONTRACTOR IS RESPONSIBLE FOR REPAIR AND/OR REPLACEMENT OF ANY UTILITIES DAMAGED DURING CONSTRUCTION.
16. THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT ALL NECESSARY PERMITS AND APPROVALS HAVE BEEN OBTAINED PRIOR TO CONSTRUCTION. THESE PERMITS AND APPROVALS MAY INCLUDE BUT ARE NOT LIMITED TO GRADING, DEMOLITION, ZONING, BUILDING, DRIVEWAY, DETENTION, SUBDIVISION, SPECIAL USE, SEWER AND WATER.
17. WATER LINES UNDER ROADS WILL HAVE CONNECTIONS STUBBED OUT BEFORE ROAD IS SURFACED.
18. FIRE HYDRANTS SHALL HAVE A CLEAR SPACE OF 3 FEET FROM ANY PERMANENT STRUCTURES. HYDRANTS SHALL BE ORDERED FROM THE MANUFACTURER COLOR CODED TO MEET THE REQUIREMENTS OF LCWSD'S FIRE HYDRANT FLOW GUIDELINES.
19. REFER TO LCWSD SPECIFICATIONS AND LCWSD DEVELOPER POLICY FOR ADDITIONAL REQUIREMENTS.

20. UTILITY EASEMENTS ARE PROVIDED TO LCWSD EITHER PRIOR TO OR CONCLUDING CONSTRUCTION. ALL WATER METERS SHALL BE PLACED WITHIN THIS EASEMENT AND NOT IN THE SIDEWALK REGARDLESS OF HOW SHOWN ON THE PLAN. AT FIRE HYDRANTS THE EASEMENT SHALL BE 10 FEET IN ALL DIRECTIONS MEASURED FROM THE CENTER OF THE HYDRANT PER LCWSD STANDARD DETAILS REGARDLESS OF HOW SHOWN ON THIS PLAN.
21. CONTRACTOR IS RESPONSIBLE FOR SUBMITTING THREE SEPARATE SETS OF WATER AND SEWER MATERIALS APPROVAL LIST TO ENGINEER AND LCWSD'S ENGINEERING DEPARTMENT PRIOR TO PRE-CONSTRUCTION MEETING.
22. CONTRACTOR TO CONTACT LCWSD INSPECTORS, JOHN HUDSON (803) 804-1452, MICHAEL BILLINGS (803) 577-2819 AND/OR MATTHEW WHITLEY (803) 577-9252 48 HOURS PRIOR TO STARTING CONSTRUCTION AND PUPS (PALMETTO UTILITY PROTECTIONS SERVICE; 1-888-721-7877 FOR ASSISTANCE IN LOCATING ANY EXISTING WATER AND SEWER LINES.
23. CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR LOCATION AND PROTECTION OF EXISTING ABOVE AND BELOW GROUND UTILITIES AND STRUCTURES. ANY AND ALL MAINS, LINES, OR INDIVIDUAL SERVICES DAMAGED DURING CONSTRUCTION SHALL BE REPAIRED IMMEDIATELY AT NO ADDITIONAL EXPENSE TO THE OWNER.
24. IT IS THE CONTRACTOR'S RESPONSIBILITY TO ENSURE THAT ALL LOCAL, STATE AND FEDERAL CONSTRUCTION SAFETY REGULATIONS ARE FOLLOWED DURING THE CONSTRUCTION ACTIVITIES ASSOCIATED WITH THIS PROJECT.
25. EXACT LOCATIONS OF WATER SERVICE CONNECTIONS, MANHOLES, VALVES, AND ALL OTHER APPURTENANCES ARE REQUIRED FOR AS-BUILT RECORDS AS WELL AS DISTANCES FROM DOWNSTREAM MANHOLES TO ANY TEES, WYES, OR STUB-OUTS, AND THE DISTANCE OF THE SEWER SERVICE LINE STUBBED OFF OF MAIN.
26. MINIMUM COVER OF 36 INCHES IS REQUIRED FOR WATER MAINS.
27. DUCTILE IRON PIPE IS REQUIRED FOR WATER MAINS IF THE FOLLOWING CONDITIONS OCCUR:
  - LESS THAN 12 INCH CLEARANCE FROM STORM DRAINS, GAS MAINS, TELEPHONE DUCT BANKS AND UNDERGROUND CABLES.
  - LESS THAN 18 INCH VERTICAL CLEARANCE FOR WATER LINE INSTALLED ABOVE SEWER LINE.
  - WATER LINE CROSSING UNDER SEWER LINE.
  - LESS THAN 10 FEET HORIZONTAL SEPARATION FOR WATER PARALLEL TO SEWER LINE.
28. SIZE AND LOCATION OF EXISTING WATER AND SEWER LINES IS TO BE VERIFIED BY THE CONTRACTOR.
29. CONTRACTOR SHALL COORDINATE THE PROPOSED WATER AND SEWER LINE WORK WITH LCWSD.
30. MATERIAL AND WORKMANSHIP REQUIREMENTS TO BE IN ACCORDANCE WITH LCWSD POLICIES, PROCEDURES, STANDARDS, AND SPECIFICATIONS.
31. CONTRACTOR SHALL REPAIR ALL FENCES, MAILBOXES, OR SIMILAR STRUCTURES OWNED BY OTHERS WHICH ARE DISTURBED DURING CONSTRUCTION.
32. ANY EXISTING WATER OR SEWER INFRASTRUCTURE THAT WILL BE LOCATED UNDER PAVEMENT WITHIN SCOT'S RIGHT-OF-WAY, AS A RESULT OF ANY ROAD IMPROVEMENTS ASSOCIATED WITH A DEVELOPMENT MUST BE RELOCATED AT THE DEVELOPER'S EXPENSE. LCWSD SHALL APPROVE THE RELOCATION PLAN PRIOR TO IMPLEMENTATION.

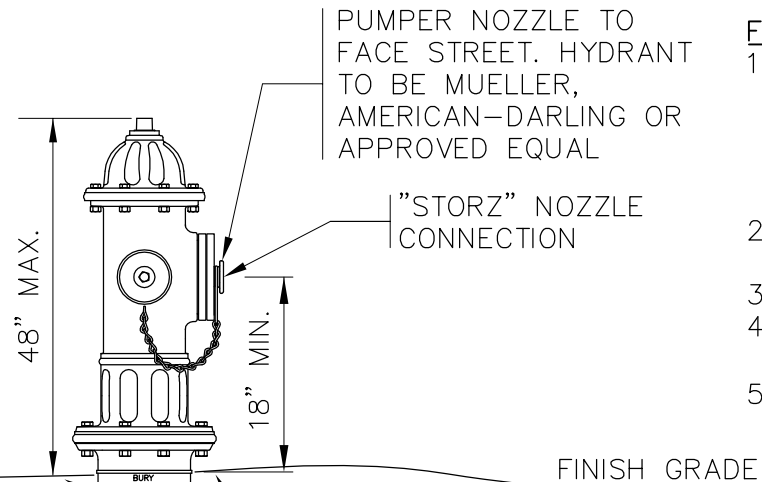
**CONSTRUCTION SEQUENCE:**

1. RECEIVE ALL STATE AND LOCAL PERMITS.
2. CLEAR ONLY AS NEEDED FOR INSTALLATION OF WATERLINE AND EROSION CONTROL DEVICES. MAXIMUM DISTURBED AREA 10' EACH SIDE OF 2.5" WATERLINE.
3. INSTALL WATERLINES.
4. PROVIDE FINAL STABILIZATION AS SOON AS CONSTRUCTION ALLOWS.
5. FLUSH AND PRESSURE TEST PRIOR TO MAKING FINAL CONNECTIONS.
6. PROVIDE ENGINEER BACTERIAL TEST RESULTS, PRESSURE TEST RESULTS, AND AS-BUILT DATA.
7. TIE EXISTING SERVICES TO NEW 2.5" MAIN UPON APPROVAL OF ENGINEER.

**LIMITS OF CONSTRUCTION:**

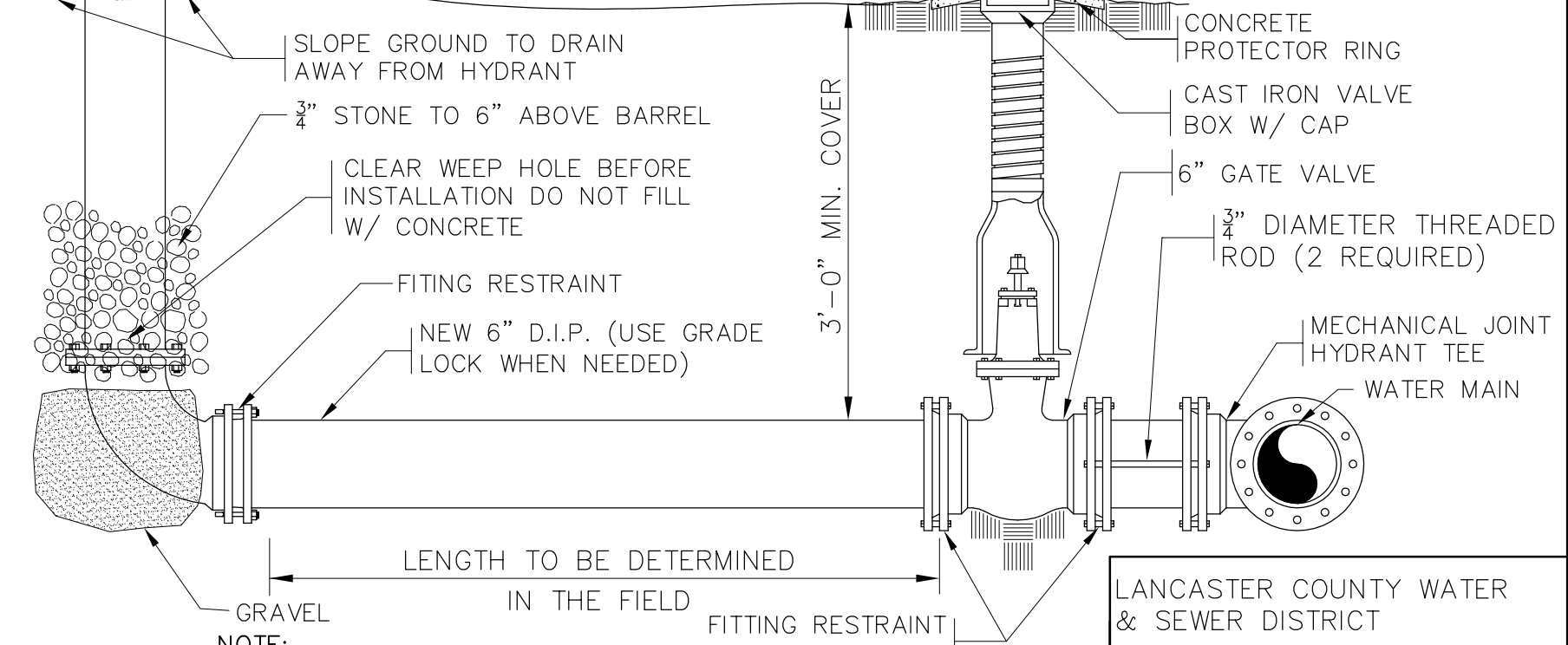
10' EACH SIDE OF 2.5" WATERLINE

LANCASTER COUNTY WATER & SEWER DISTRICT	
LAYOUT TITLE: GENERAL WATER NOTES	
CATEGORY: WATER	
DATE: 06/2023	SCALE: N.T.S.
DETAIL SHORTNAME: WATER NOTES	SHEET W0



**FIRE HYDRANT NOTES:**

1. FIRE HYDRANTS SHALL BE INSTALLED PER PLANS AND FIELD VERIFICATION WITH LCWASD INSPECTOR. THE DISTANCE FROM THE WATER MAIN TO THE FIRE HYDRANT VARIES. THE CONTRACTOR'S BID PRICE FOR FIRE HYDRANT ASSEMBLIES SHALL BE BASED ON AVERAGE DISTANCE OF 15' FEET.
2. COSTS TO INSTALL THE FIRE HYDRANT TO GRADE SHALL BE PAID BY THE CONTRACTOR.
3. ALL FITTINGS SHALL BE MECHANICALLY RESTRAINED.
4. TOP OF VALVE BOX AND COLLAR SHALL BE PAINTED AS DIRECTED BY ENGINEER.
5. ALL NEW HYDRANTS SHALL BE FURNISHED WITH "STORZ" NOZZLES IN ACCORDANCE WITH SPECS.



**NOTE:**

- 1) DISTANCE AND DIRECTION TO VALVE TO BE STAMPED INTO METAL ON THE BONNET
- 2) HYDRANT TO BE RODDED TO THE VALVE IF THE DISTANCE IS LESS THAN 10'

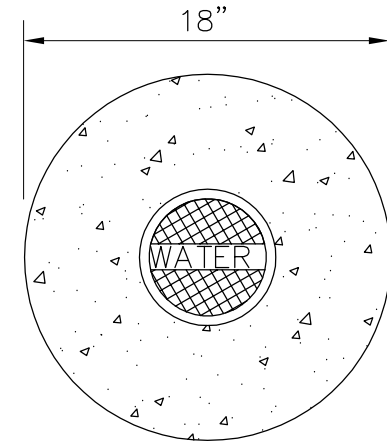
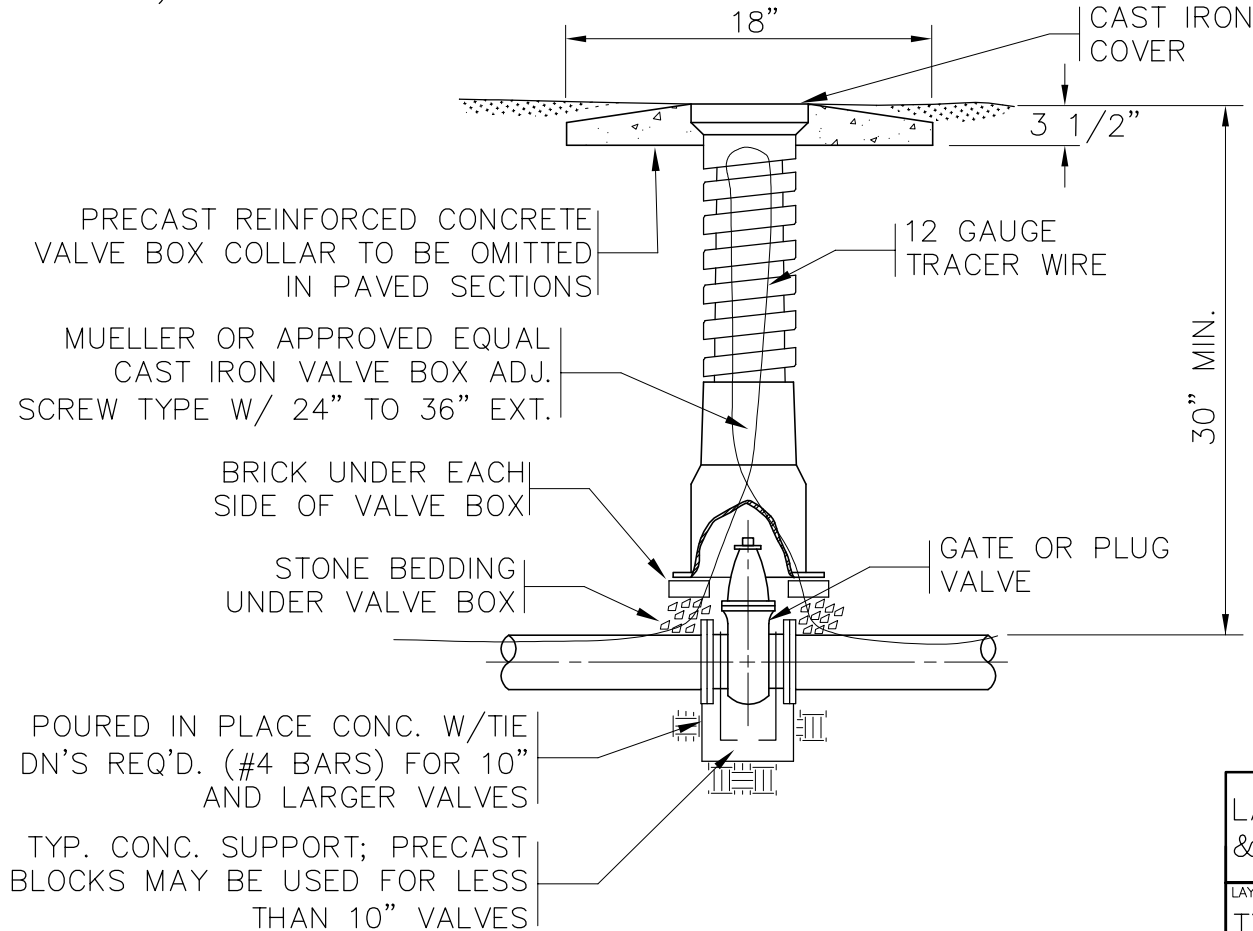
**FIRE HYDRANT AND VALVE DETAIL**  
N.T.S.

LANCASTER COUNTY WATER & SEWER DISTRICT

LAYOUT TITLE: FIRE HYDRANT AND VALVE	
CATEGORY: WATER	
DATE: 06/2023	SCALE: N.T.S.
DETAIL SHORTNAME: FHYD	SHEET W1

NOTE:

1. EXTENSION STEM WILL BE REQ'D. TO BE WITHIN 2' OF THE SURFACE IF OPERATING NUT IS OVER 5' BELOW GRADE. EXTENSION SHALL BE PERMANENTLY ATTACHED TO VALVE NUT AND SHALL BE PROVIDED WITH HORIZONTAL SPACERS FOR VERTICAL ALIGNMENT WITHIN THE VALVE BOX.
2. TOP OF VALVE BOX AND COLLAR SHALL BE PAINTED BLUE FOR MAIN LINE VALVES, RED FOR HYDRANT VALVES.
3. 12 GAUGE TRACER WIRE TO BE ACCESSIBLE. (STRANDED COPPER COATED)



NOTE:

SEE TYPICAL FITTING AND JOINT RESTRAINT DETAILS FOR VALVE RESTRAINTS.

## TYPICAL VALVE AND VALVE BOX

N.T.S.

LANCASTER COUNTY WATER & SEWER DISTRICT

LAYOUT TITLE:

TYP. VALVE AND VALVE BOX

CATEGORY:

WATER

DATE:

06/2023

SCALE:

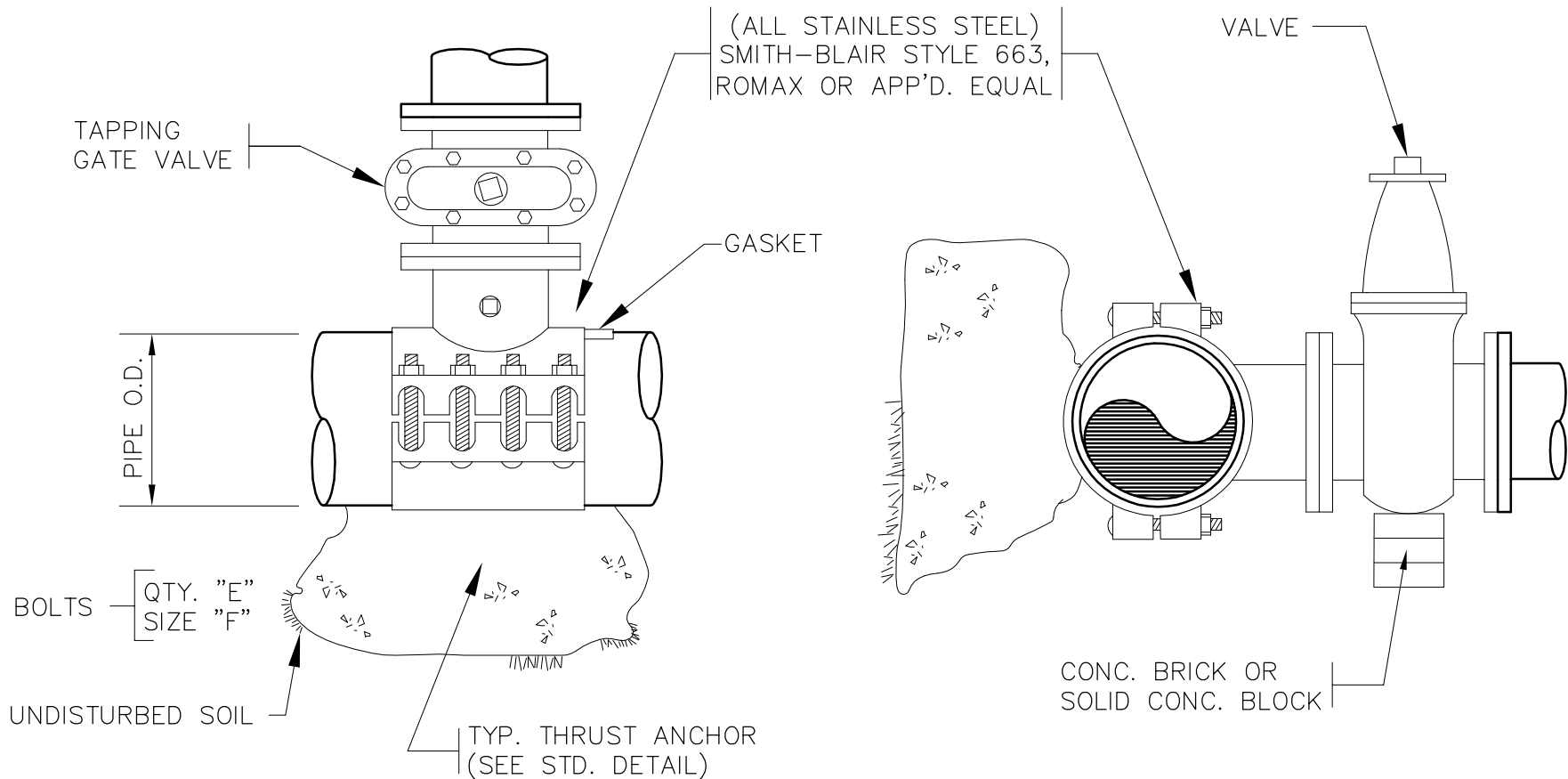
N.T.S.

DETAIL SHORTNAME:

VALBX

SHEET

W2



**NOTE:**

1. WRAP TAPPING SLEEVE/VALVE IN PLASTIC PRIOR TO BLOCKING INSTALLATION.
2. LCWSD INSPECTOR TO WITNESS ALL TAPS INSTALLED.
3. HYDROSTATIC TEST AT 150 PSI PRIOR TO TAPPING MAIN.

LANCASTER COUNTY WATER  
& SEWER DISTRICT

LAYOUT TITLE:

TYPICAL TAPPING SLEEVE

CATEGORY:

WATER

DATE:

06/2023

SCALE:

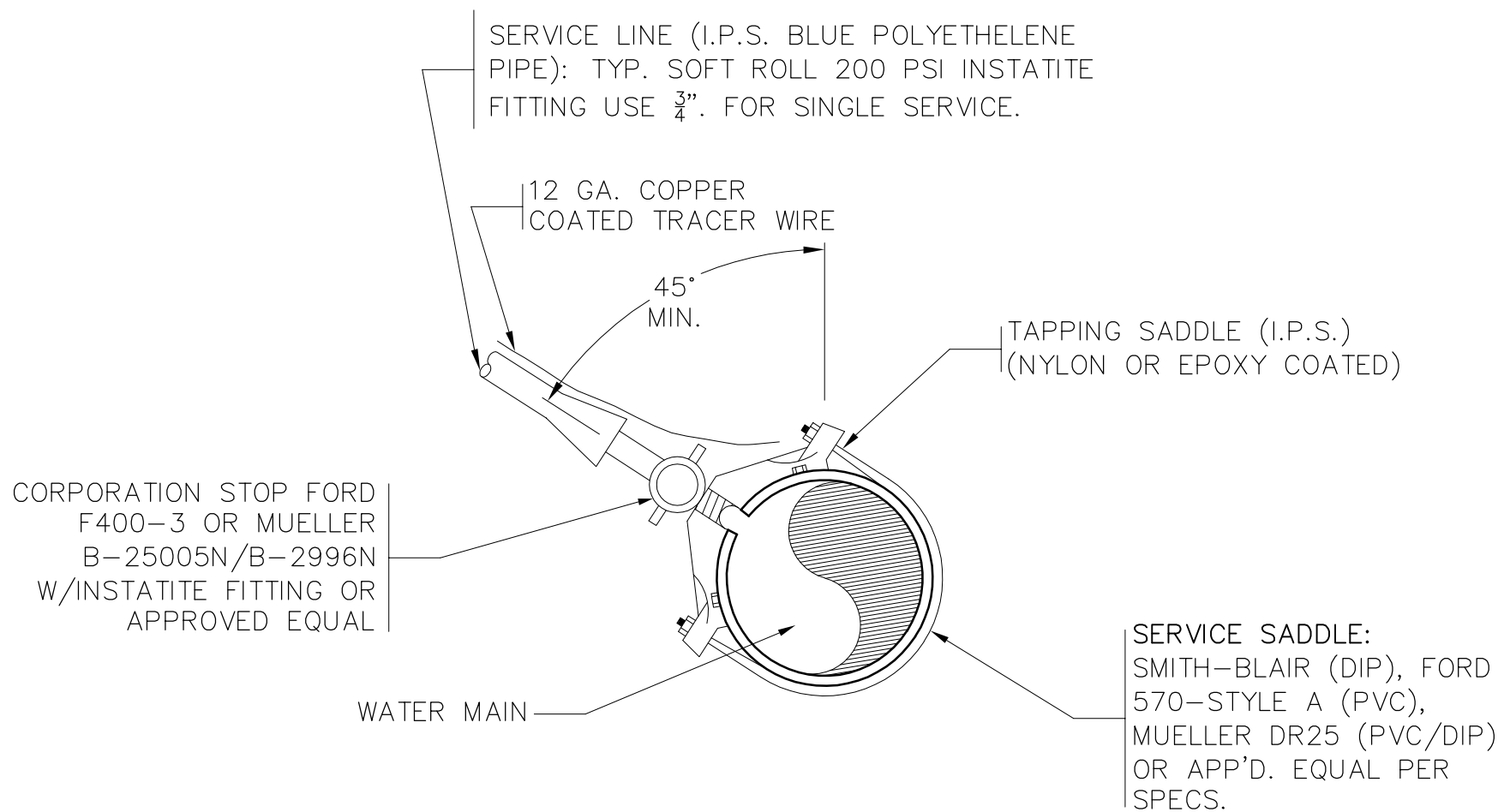
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DETAIL SHORTNAME:

TSVLV

SHEET

W3



## TYPICAL SERVICE TAP

N.T.S.

NOTE:  
SINGLE SST STRAP SADDLE FOR  
WATER MAINS 4" & LESS. DBL.  
SST STRAP SADDLE FOR WATER  
MAINS LARGER THAN 4".

LANCASTER COUNTY WATER  
& SEWER DISTRICT

LAYOUT TITLE:

TYPICAL SERVICE TAP

CATEGORY:

WATER

DATE:

06/2023

SCALE:

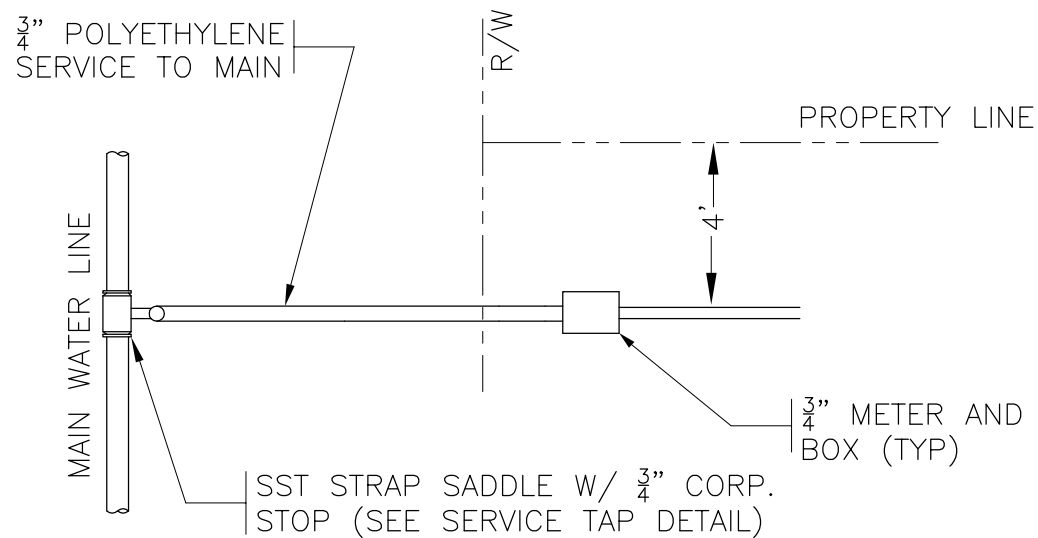
N.T.S.

DETAIL SHORTNAME:

SERV TAP

SHEET

W4



## TYPICAL SINGLE SERVICE CONNECTION

N.T.S.

### NOTE:

1. INSTALL 12 GAUGE STRANDED TRACER WIRE INSIDE METER BOX.
2. USE NYLON OR EPOXY COATED SADDLE.

LANCASTER COUNTY WATER  
& SEWER DISTRICT

LAYOUT TITLE:

TYPICAL SERVICE CONNECTION

CATEGORY:

WATER

DATE:

06/2023

SCALE:

N.T.S.

DETAIL SHORTNAME:

SERCON

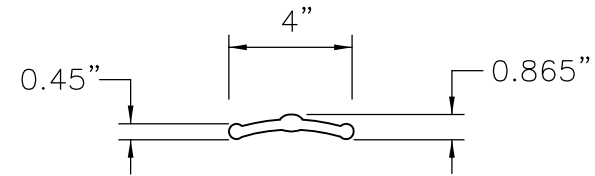
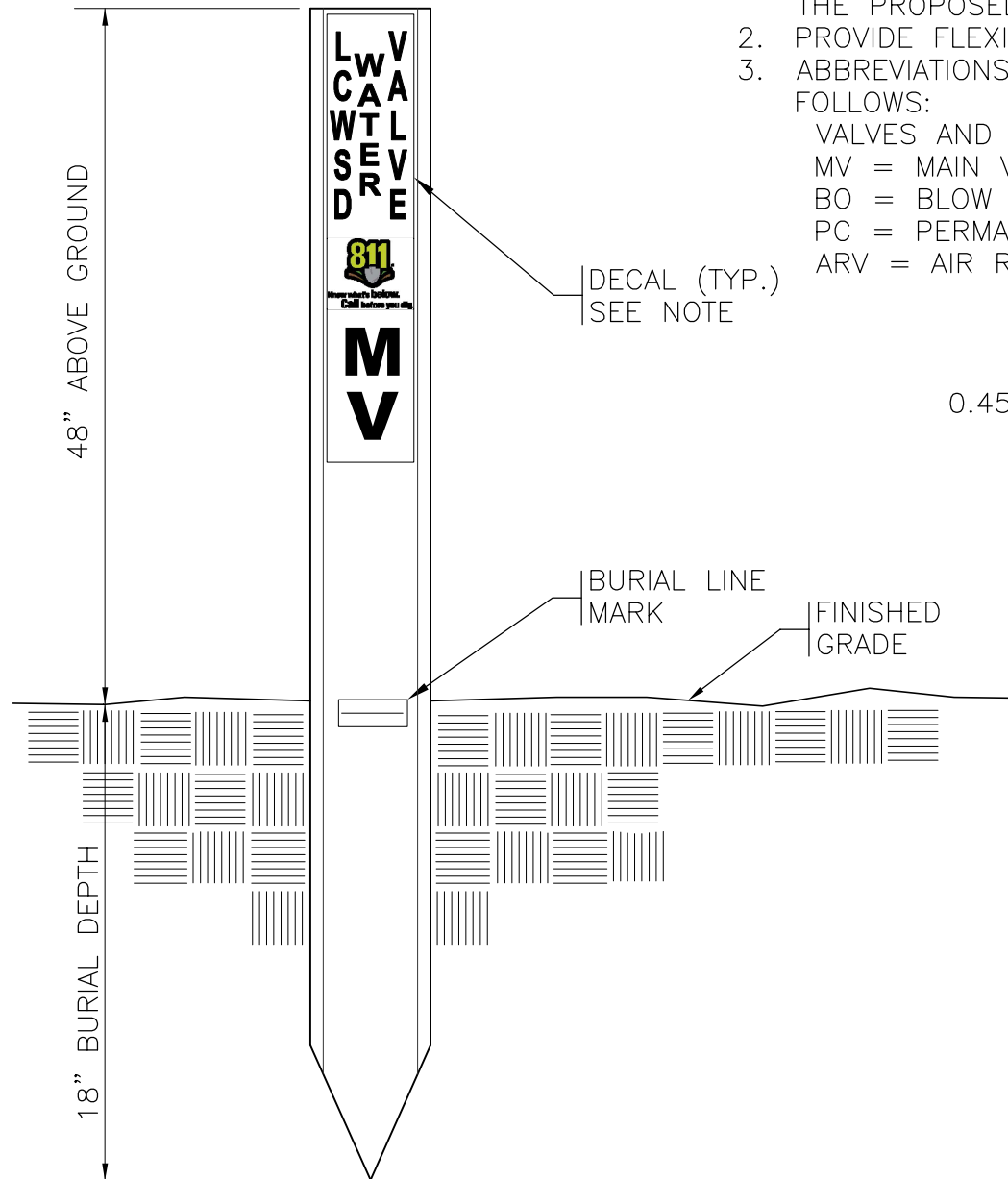
SHEET

W5

NOTES:

1. INSTALL FLEXIBLE UTILITY MARKER ON EDGE OF THE PROPOSED WATER MAIN EASEMENT.
2. PROVIDE FLEXIBLE UTILITY MARKER AT ALL VALVES.
3. ABBREVIATIONS DECAL PLACED ON MARK AS FOLLOWS:

VALVES AND BLOWOFF ASSEMBLIES, FACING VALVE  
 MV = MAIN VALVE  
 BO = BLOW OFF VALVE  
 PC = PERMANENTLY CLOSED  
 ARV = AIR RELIEF VALVE



TOP VIEW

VALVE MARKER POST DETAIL  
 N.T.S.

LANCASTER COUNTY WATER  
 & SEWER DISTRICT

LAYOUT TITLE:

TYPICAL VALVE MARKER POST

CATEGORY:

WATER

DATE:

06/2023

SCALE:

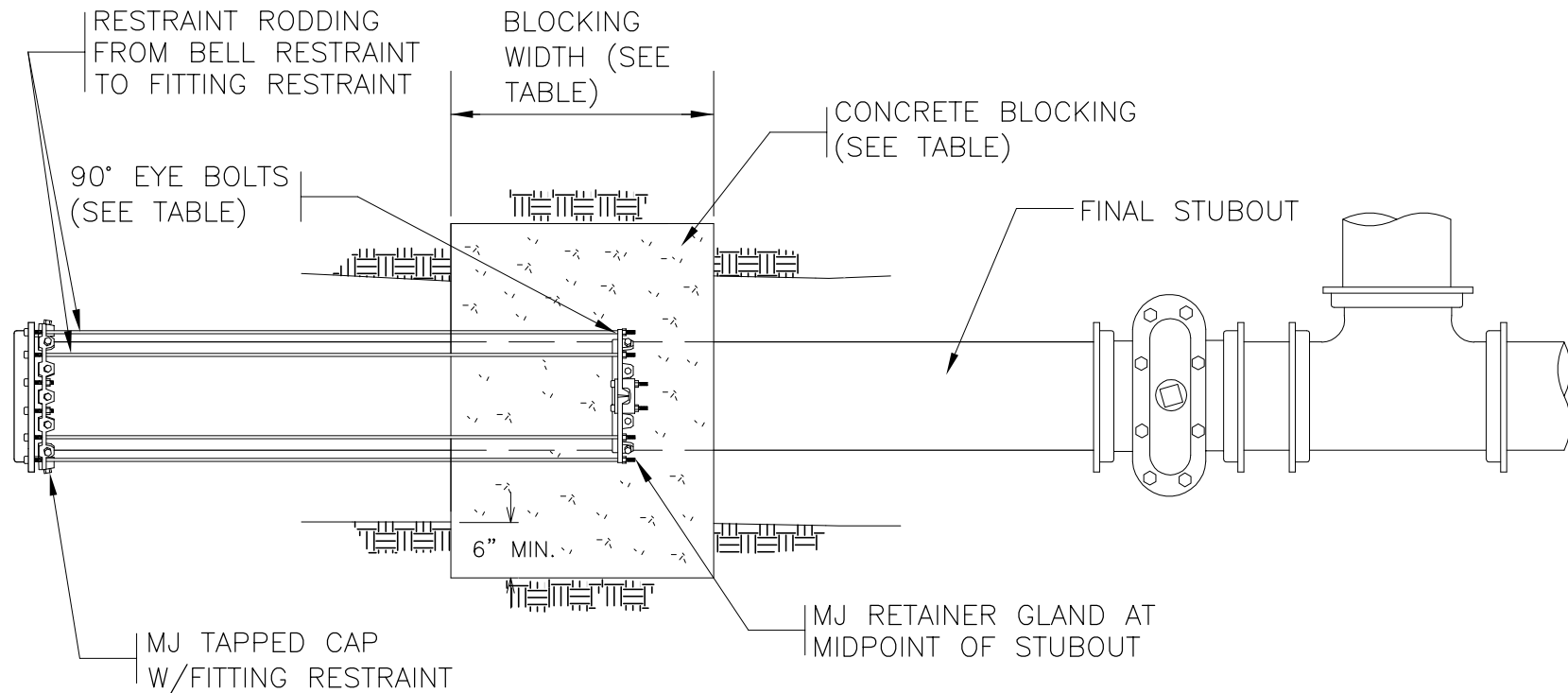
NONE

DETAIL SHORTNAME:

FLUMARK

SHEET

W6



MINIMUM BLOCKING DIMENSIONS			
PIPE SIZE (inches)	BLOCKING BEARING AREA (ft <sup>2</sup> )	BLOCKING WIDTH (inches)	# EYE BOLTS
4	2	24	4
6	4	24	4
8	7	36	6
10	11	36	6
12	15	36	6
OVER 12" BY THE DESIGN ENGINEER			

NOTE:  
THE MINIMUM DIMENSIONS TABLE IS BASED ON AN ASSUMED SOIL BEARING OF 2000 LBS. PER SQ. FT. IF BEARING VALUE FOR SOIL IS LESS, THEN AREA SHOWN HEREIN SHOULD BE INCREASED ACCORDINGLY.

## TYPICAL FUTURE WATERLINE STUBOUT

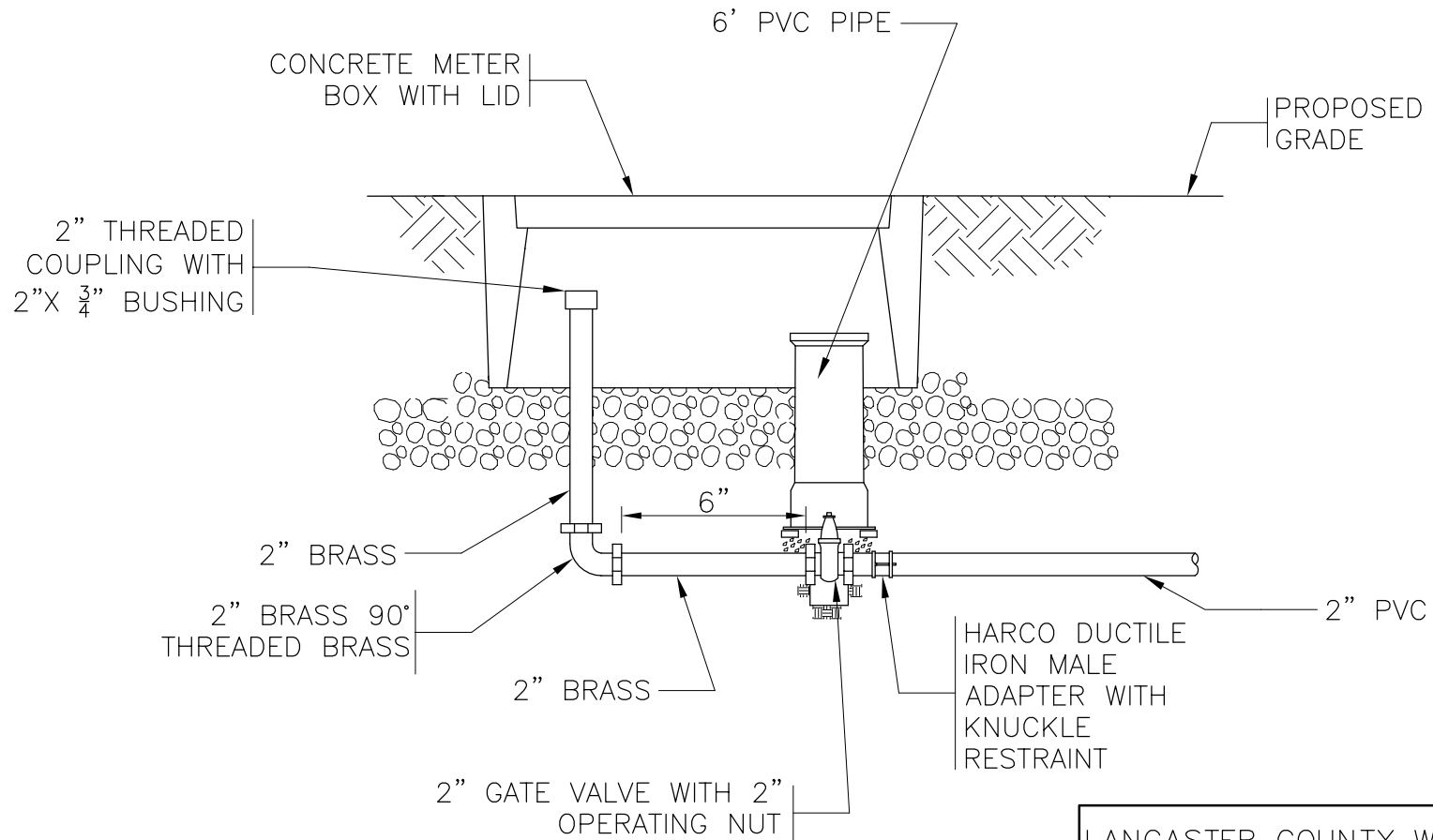
N.T.S.

LANCASTER COUNTY WATER & SEWER DISTRICT	
LAYOUT TITLE: FUTURE WATERLINE STUBOUT	
CATEGORY: WATER	
DATE: 06/2023	SCALE: NONE
DETAIL SHORTNAME: FUTSTUB	SHEET W7



NOTES:

1. 12 GAUGE TRACER WIRE (STRANDED) TO BE ACCESSIBLE IN VALVE BOX.
2. GALVANIZED PIPE SHALL NOT BE USED.
3. BLOWOFF ASSEMBLY TO BE RESTRAINED/BLOCKED PER SPECS.



2" BLOWOFF ASSEMBLY  
N.T.S.

LANCASTER COUNTY WATER  
& SEWER DISTRICT

LAYOUT TITLE:

TYPICAL BLOWOFF DETAIL

CATEGORY:

WATER

DATE:

06/2023

SCALE:

N.T.S.

DETAIL SHORTNAME:

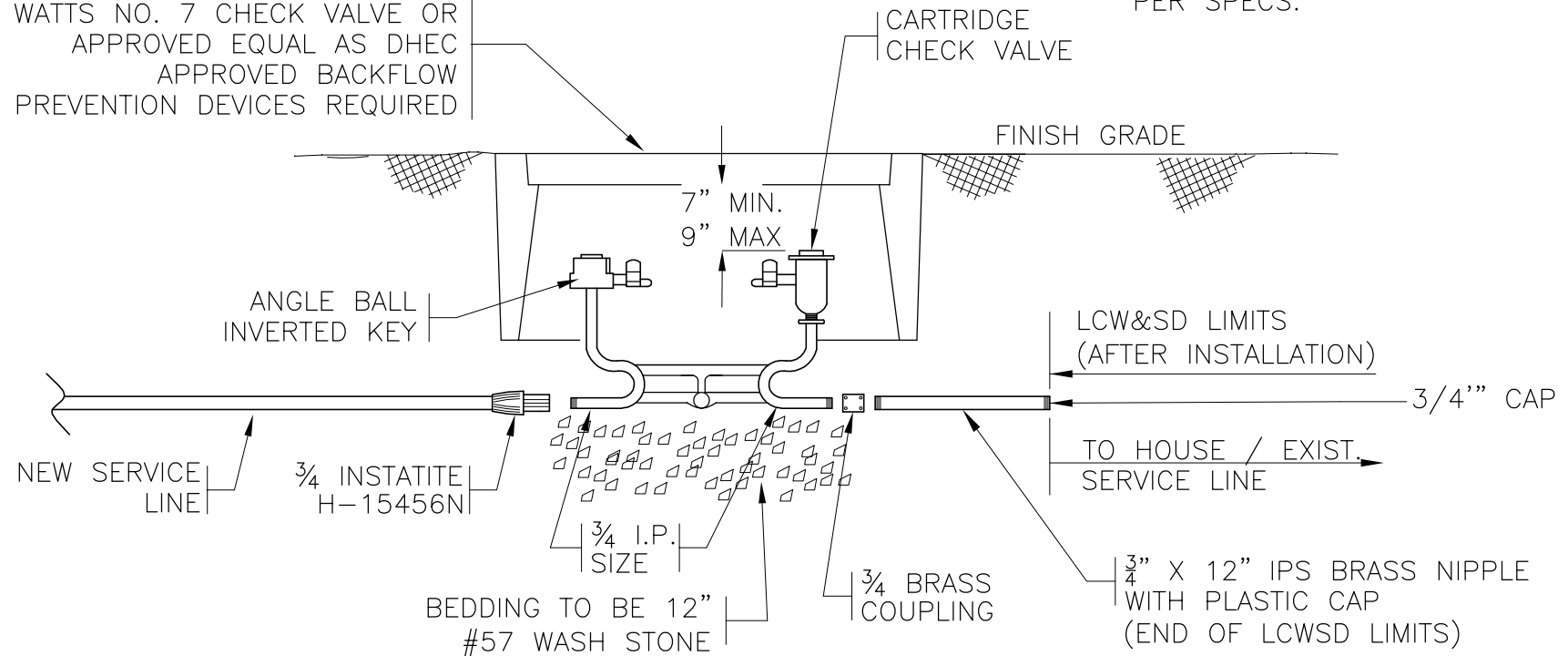
BLOWOFF

SHEET

W8

CONCRETE METER BOX AND  
WATTS NO. 7 CHECK VALVE OR  
APPROVED EQUAL AS DHEC  
APPROVED BACKFLOW  
PREVENTION DEVICES REQUIRED

MODEL NUMBERS FOR  
COPPERSETTERS TO BE  
MUELLER,  
McDONALD,  
FORD,  
PER SPECS.



#### NOTES:

1. METER WILL BE A  $\frac{5}{8}$ "x $\frac{3}{4}$ " METER CONFORMING TO AWWA SPEC'S. PER LCWSD STANDARD SPECIFICATIONS.
2. CONTRACTOR TO PROVIDE FINAL SETTING TO FINAL PROPERTY GRADE, ALL METER YOKE BOXES AND SERVICE MATERIAL PRIOR TO LCWSD SETTING WATER METER.
3. CONTRACTOR RESPONSIBLE FOR DISTANCE BETWEEN METER SETTER AND INSIDE OF LID, 7 INCHES MIN. TO 9 INCHES MAX., UNTIL METER HAS BEEN SET.

TYPICAL METER BOX  
N.T.S.

LANCASTER COUNTY WATER  
& SEWER DISTRICT

LAYOUT TITLE:

TYPICAL METER BOX DETAIL

CATEGORY:

WATER

DATE:

06/2023

SCALE:

N.T.S.

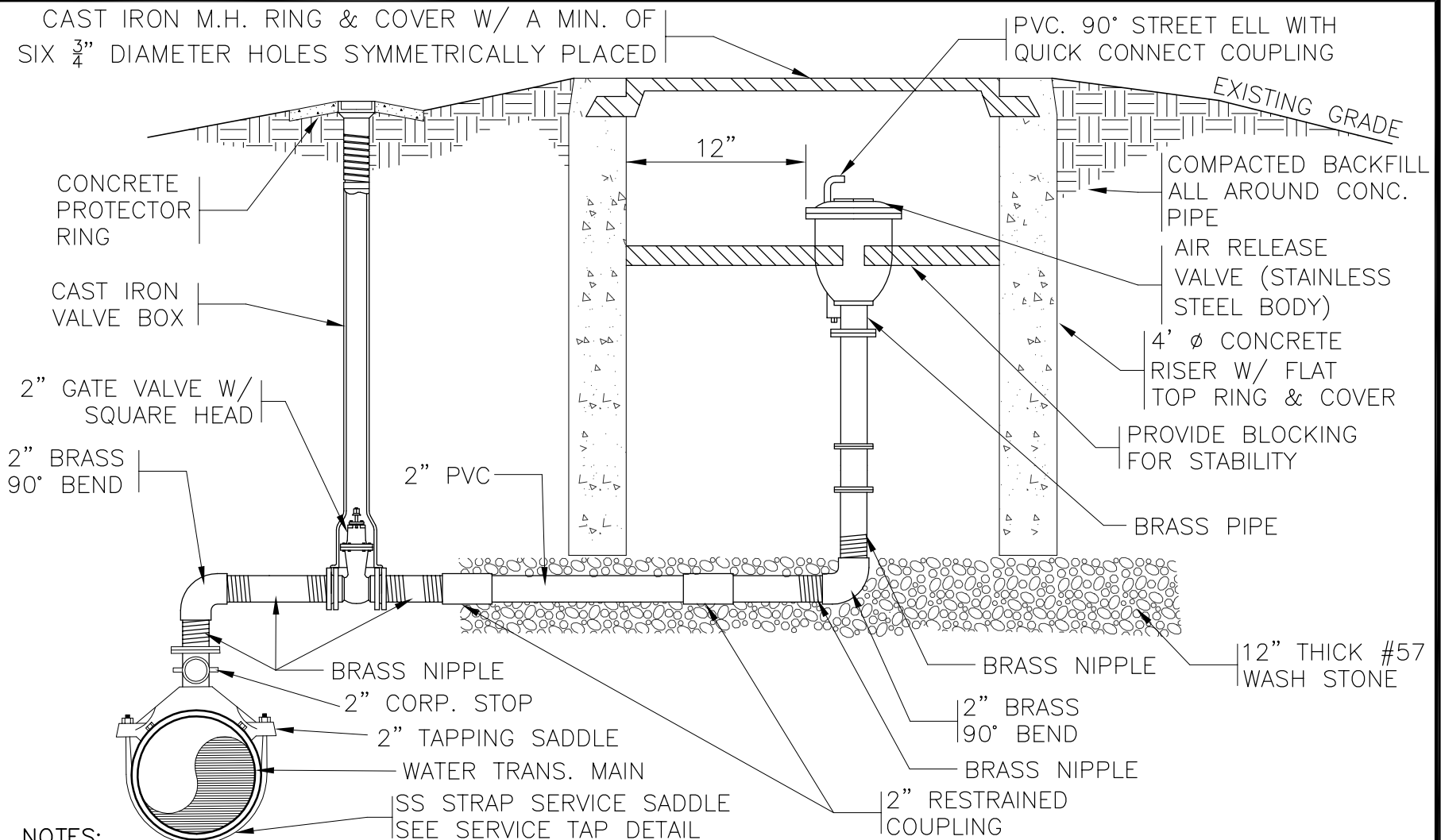
DETAIL SHORTNAME:

METERBOX

SHEET

W9





#### NOTES:

1. AIR RELEASE VALVE SHALL BE INSTALLED ON THE HIGH POINT OF WATER MAIN.
2. ALL MATERIALS & EQUIPMENT TO BE PER AWWA SPEC'S.
3. AIR RELEASE SHALL BE H-TEC, UL SERIES CRISPIN VALVE OR APPROVED EQUAL PER LCWSD SPECIFICATIONS.
4. CORP. STOP, BRASS PIPE, FITTINGS, AND ANGLE VALVE TO BE SAME DIA. AS AIR RELEASE VALVE INLET.
5. LIMIT OF PAY ITEMS INCLUDES SERVICE SADDLE.
6. LARGER THAN 2" ARV MAY REQUIRE LARGER VAULT.
7. SWING JOINT (2-90 DEGREE BENDS) SHALL BE PROVIDED WHERE PVC RESTRAINT COUPLINGS ARE NOT UTILIZED DUE TO SPACE LIMITATIONS

## AIR RELEASE AND VACUUM VALVE ASSEMBLY N.T.S. WITH OFFSET

LANCASTER COUNTY WATER  
& SEWER DISTRICT

LAYOUT TITLE:  
AIR RELEASE & VACUUM  
ASSEMBLY WITH OFFSET

CATEGORY:  
WATER

DATE:  
06/2023

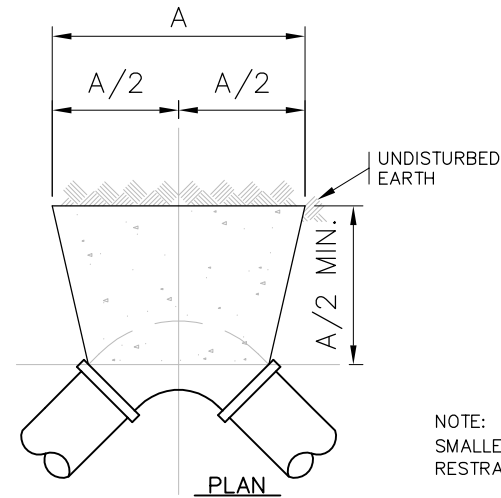
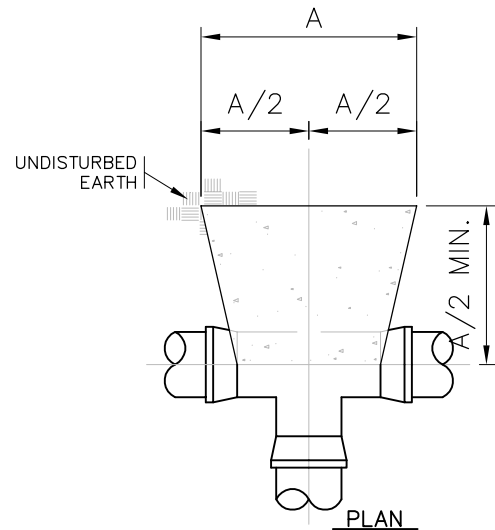
SCALE:  
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DETAIL SHORTNAME:  
ARVA

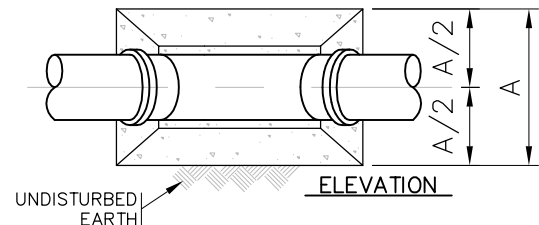
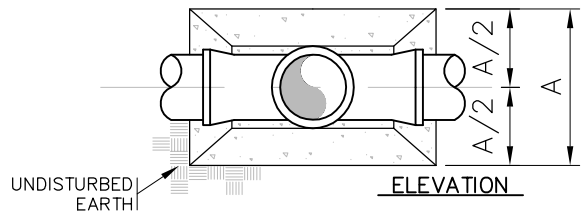
SHEET  
W11

BEND / FITTING	DIMENSION A (FEET)									
	PIPE SIZE (NOM. DIA. IN INCHES)									
	2.5	4	6	8	10	12	16	18	20	30
90° BEND	—	1.4	2.0	2.8	3.4	4.0	5.4	6.0	6.7	10
45° BEND	—	1.0	1.7	2.0	2.5	3.0	4.0	4.5	5.0	7.4
22 1/2° BEND	—	0.8	1.7	1.5	1.8	2.2	2.9	3.3	3.6	5.3
11 1/4° BEND	—	0.5	1	1.0	1.3	1.7	2.0	2.3	2.5	3.7
TEE BRANCH/DEAD END	—	1.2	1.7	2.6	2.9	3.5	4.6	5.1	5.7	8.4

DESIGN PARAMETERS:  
 1. BASED ON TEST  
 PRESSURE OF 200 PSI  
 2. SOIL ASSUMED TO BE  
 2000 PSF CLAY/GRAVEL



NOTE: BLOCKING ONLY ALLOWED FOR  
 SMALLER THAN 4" PIPE WHERE MECHANICAL  
 RESTRAINT CANNOT BE UTILIZED



**NOTES:**

1. THRUST BLOCKS SHALL BE CONSTRUCTED OF 3000 P.S.I. CONCRETE
2. INSTALL PLASTIC SHEATHING AROUND BEND OR FITTING TO PREVENT BONDING OF CONCRETE TO FITTINGS OR BOLTS.
3. CONTRACTOR TO SUBMIT CALCULATIONS FOR DIFFERING CONDITIONS FROM STANDARD DESIGN PARAMETERS.

**CONCRETE THRUST BLOCK DETAIL FOR  
 WATER MAIN HORIZONTAL BENDS AND TEES**  
 N.T.S.

LANCASTER COUNTY WATER  
 & SEWER DISTRICT

LAYOUT TITLE:  
 CONC. THRUST BLOCK DETAIL

CATEGORY:  
 WATER

DATE:  
 06/2023

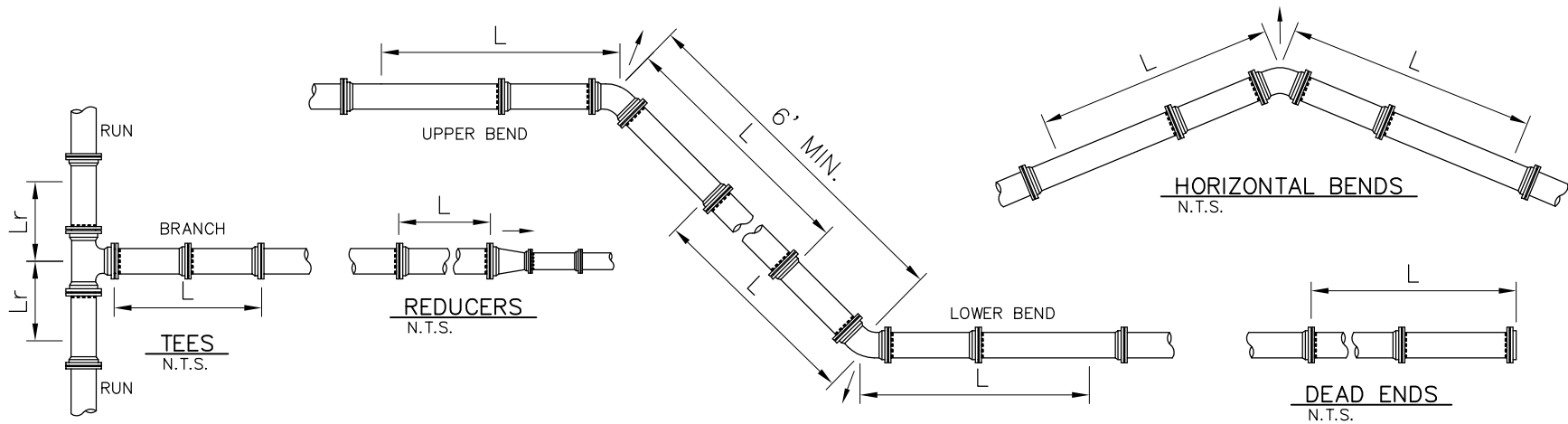
SCALE:  
 N.T.S.

DETAIL SHORTNAME:  
 TBTAF

SHEET  
 W12

Size & Material		Horizontal Bend (Degrees)				Tee	Reducer	Dead End/Valve	Vertical Offset 45° Bend	
		90	45	22.5	11.25	6" Branch	X 6"		Upper	Lower
12" DIP	Length Restrained (ft)	48	20	9	5	21	63	87	35	15
10" DIP	Length Restrained (ft)	41	17	8	4	26	45	73	29	12
8" DIP	Length Restrained (ft)	34	14	7	3	30	26	61	25	10
6" DIP	Length Restrained (ft)	26	11	5	2	34	4" – 24	47	19	8

Size & Material		Horizontal Bend (Degrees)				Tee	Reducer	Dead End/Valve	Vertical Offset 45° Bend	
		90	45	22.5	11.25	6" Branch	X 6"		Upper	Lower
12" PVC	Length Restrained (ft)	60	25	12	6	23	99	136	66	21
10" PVC	Length Restrained (ft)	51	21	10	5	40	71	115	56	18
8" PVC	Length Restrained (ft)	43	18	8	4	47	40	96	46	15
6" PVC	Length Restrained (ft)	33	14	7	3	53	4" – 38	56	35	11



### DESIGN PARAMETERS

DEPTH OF BURY	3 FT
SAFETY FACTOR	2:1
TRENCH TYPE	3, SEE DETAIL
TEST PRESSURE	150 PSI
SOIL TYPE	SILTY SANDS, SAND SILT MIXTURES BACKFILLED USING NATIVE SOILS.

### NOTE:

1. THE CONTRACTOR SHALL INSTALL RESTRAINED JOINT THRUST PROTECTION AT ALL BENDS, TEES, REDUCERS, VERTICAL OFFSETS. THE ABOVE LENGTHS ARE MINIMUM LENGTHS REQUIRED FOR THE DESIGN PARAMETERS SHOWN ABOVE. THESE RESTRAINING CONDITIONS ARE COMMON CONDITION
2. WHEN USING MECHANICAL JOINT RESTRAINTS SUCH AS MEGA-LUGS FOR PVC & DIP OR TR FLEX AND GRIFFIN SNAP-LOK, CONCRETE BLOCKING SHALL BE EXCLUDED FROM THE INSTALLATION.

## MECHANICAL JOINT RESTRAINT DETAILS

N.T.S.

## LANCASTER COUNTY WATER & SEWER DISTRICT

LAYOUT TITLE:

MECHANICAL JOINT RESTRAINT

CATEGORY:

WATER

DATE:

06/2023

SCALE:

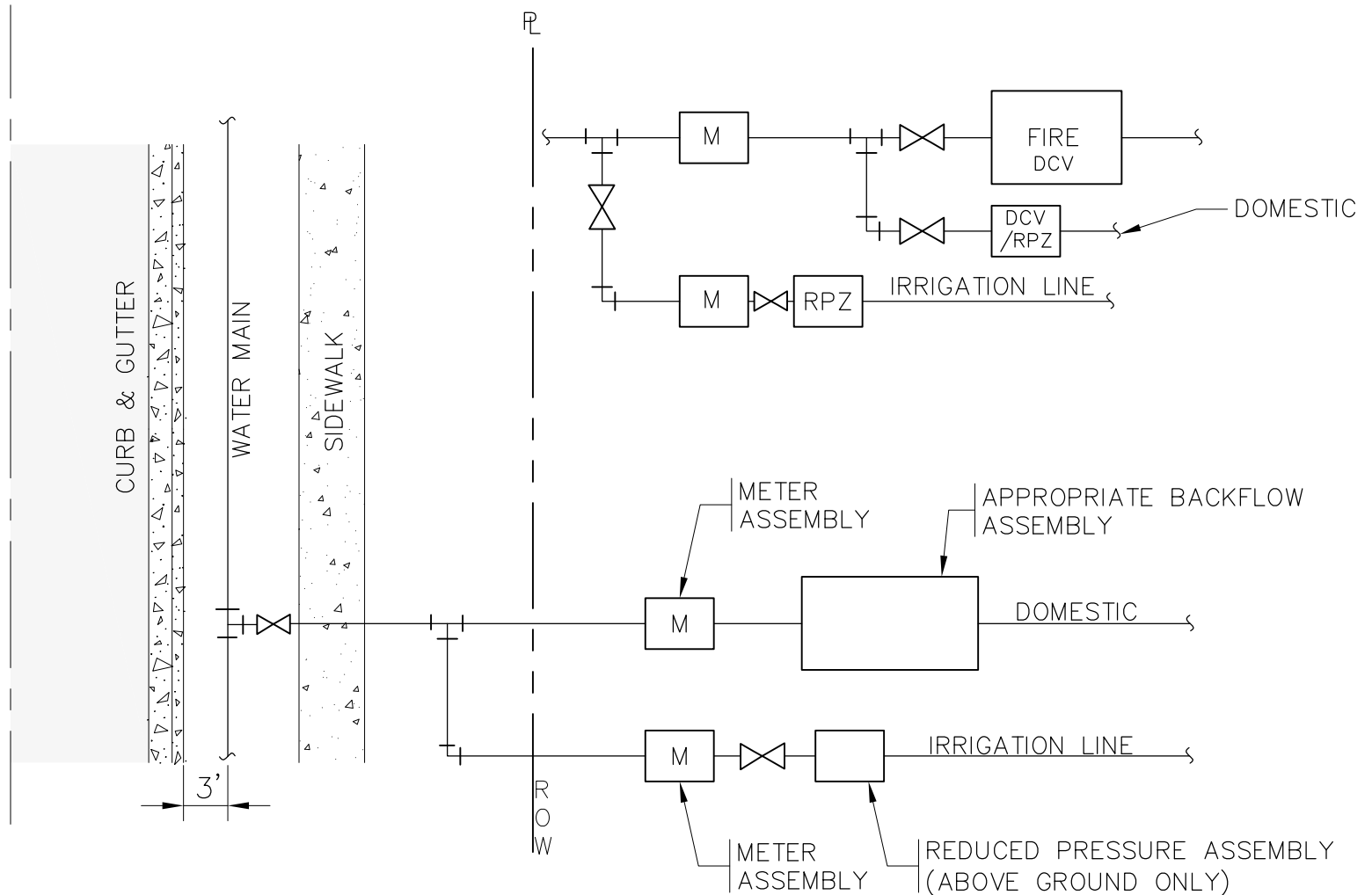
N.T.S.

DETAIL SHORTNAME:

JNTRST

SHEET

W13



**NOTE:**

1. SERVICE TAPS FOR 2" AND SMALLER IRRIGATION SERVICES MAY BE BY CORPORATION COCKS. LARGER SERVICES WILL REQUIRE A TEE AND GATE VALVE OR TAPPING SLEEVE AND VALVE ASSEMBLY AND 90° BEND.
2. IRRIGATION SERVICE TAPS SHALL ONLY BE ALLOWED BEFORE THE METER AND ASSEMBLY.
3. THE BACKFLOW SHALL BE INSTALLED NO MORE THAN 10' FROM THE METER IN A VISIBLE LOCATION.
4. THE INSTALLATION MUST MEET ALL CODE REQUIREMENTS PER THE SC PLUMBING CODE.
5. WATER MAIN TO BE INSTALLED 3' OFF BACK OF CURB.

**FIRE, DOMESTIC & IRRIGATION OPTIONS SCHEMATIC**  
N.T.S.

LANCASTER COUNTY WATER & SEWER DISTRICT	
LAYOUT TITLE: FIRE, DOMESTIC & IRRIGATION OPTIONS SCHEMATIC	
CATEGORY: WATER	
DATE: 06/2023	SCALE: N.T.S.
DETAIL SHORTNAME: FDIRR	SHEET W14

