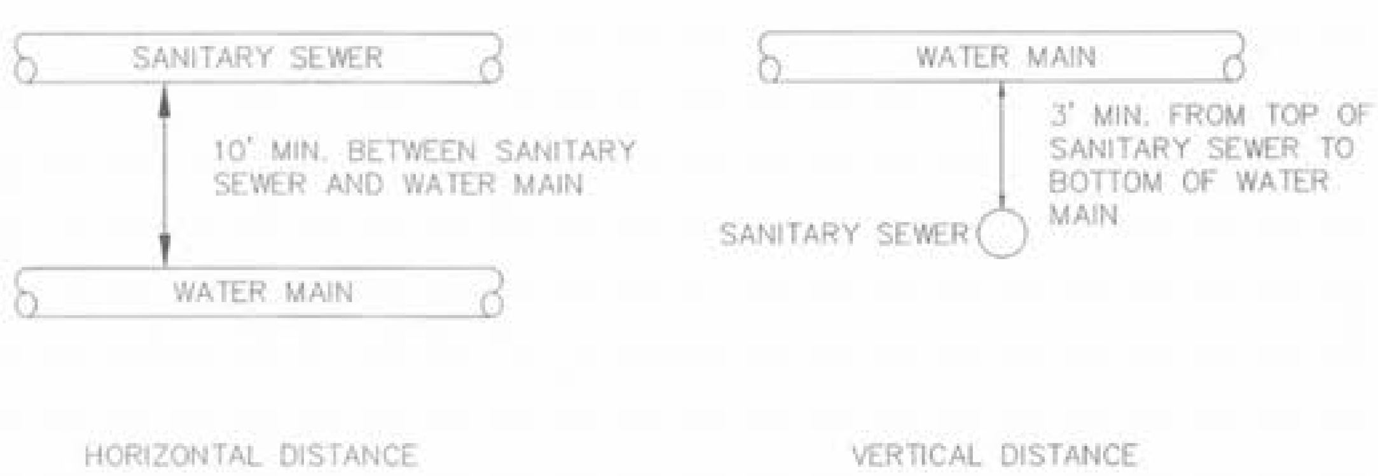
CITY FILE NUMBER 2001.00

CONSTRUCTION DETAILS
PERUQUE CROSSING PHASE I
00-11282C 12-30-02

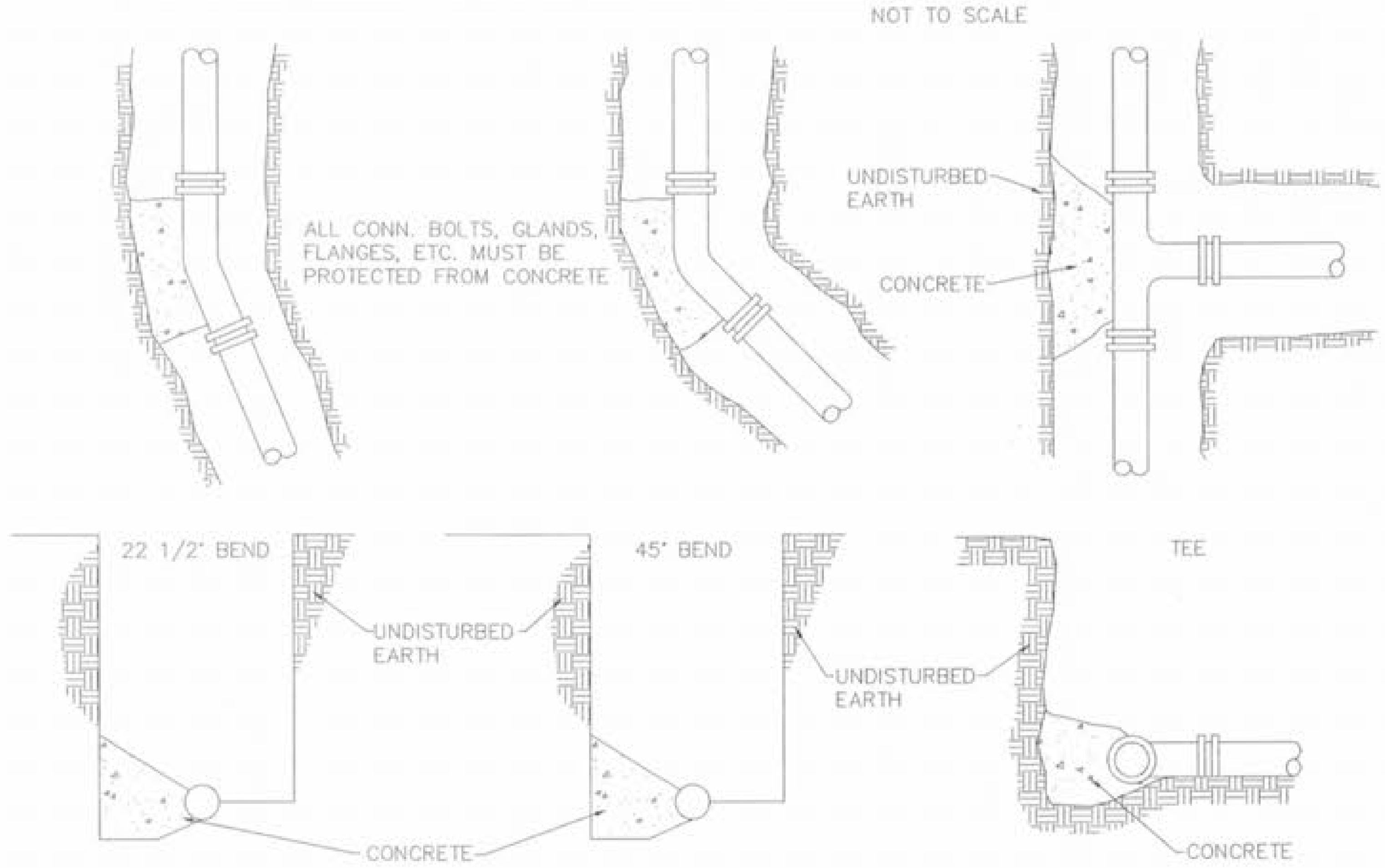
SEWER MAIN INSTALLATION
ALWAYS KEEP THE SEWER MAIN ON EASEMENT

1. Sewer mains are to be at least 8" PVC with a SDR35 rating.
2. Metropolitan Sewer District Specifications are to be followed, unless otherwise directed by the City.
3. On new construction and sewer taps, as-built location of laterals must be provided to the City.
4. Brick shall not be used on sanitary manholes.
5. All sanitary sewer manholes shall be waterproofed on the exterior in accordance with the Missouri D.N.R. Specification 10CSR-8, 120(7) (E).
6. All sanitary sewer construction shall conform to current City of O'fallon Sewer District Standards and Specifications.
7. All pipes shall have positive drainage through manholes. No flat base structures are allowed. All terminal manholes shall have positive drainage.
8. All trench backfill under paved areas shall be 1" clean (minus rock may be used with written approval by the street superintendent),granular backfill, water jetted and all trench backfills may be earth material (free of large clods or stones, nothing over a 6" diameter) and shall be water jetted, inspected and approved by the Wentzville Street Superintendent.
9. All sewer taps built without elevations furnished by the Engineer will be the responsibility of the sewer contractor.
10. Easements shall be provided for storm sewers sanitary sewers, and all utilities on the record plat. See record plat for location, size, and width of easements.
11. The City of O'fallon Sewer District shall be notified at least 48 hours prior to construction of sanitary sewers for coordination and inspections.
12. All drop sewers lines are to be ductile iron for the first 20', upstream from the manhole.
13. All drop manholes are to be 48", waterproofed. All double drop manholes are to be 60" waterproofed.
14. 42" manholes/Waterproofed are used for 8" sewers only.
48" manholes/Waterproofed are used for all sewer over 8".
15. All sewer mains 20' in depth are to be C900PVC.
16. Small field changes may be made by the City Inspector. Larger changes have to be resubmitted to the City Engineer for approval by the Developer's engineering company.
17. As-built drawings must be sent to the City before the project can be turned is as completed.
18. All bore casings shall have a casing spacer every 10'. All bores will follow the Missouri State Highway specifications.

NOTE: 24 HOUR NOTICE IS REQUIRED ON ALL INSPECTIONS

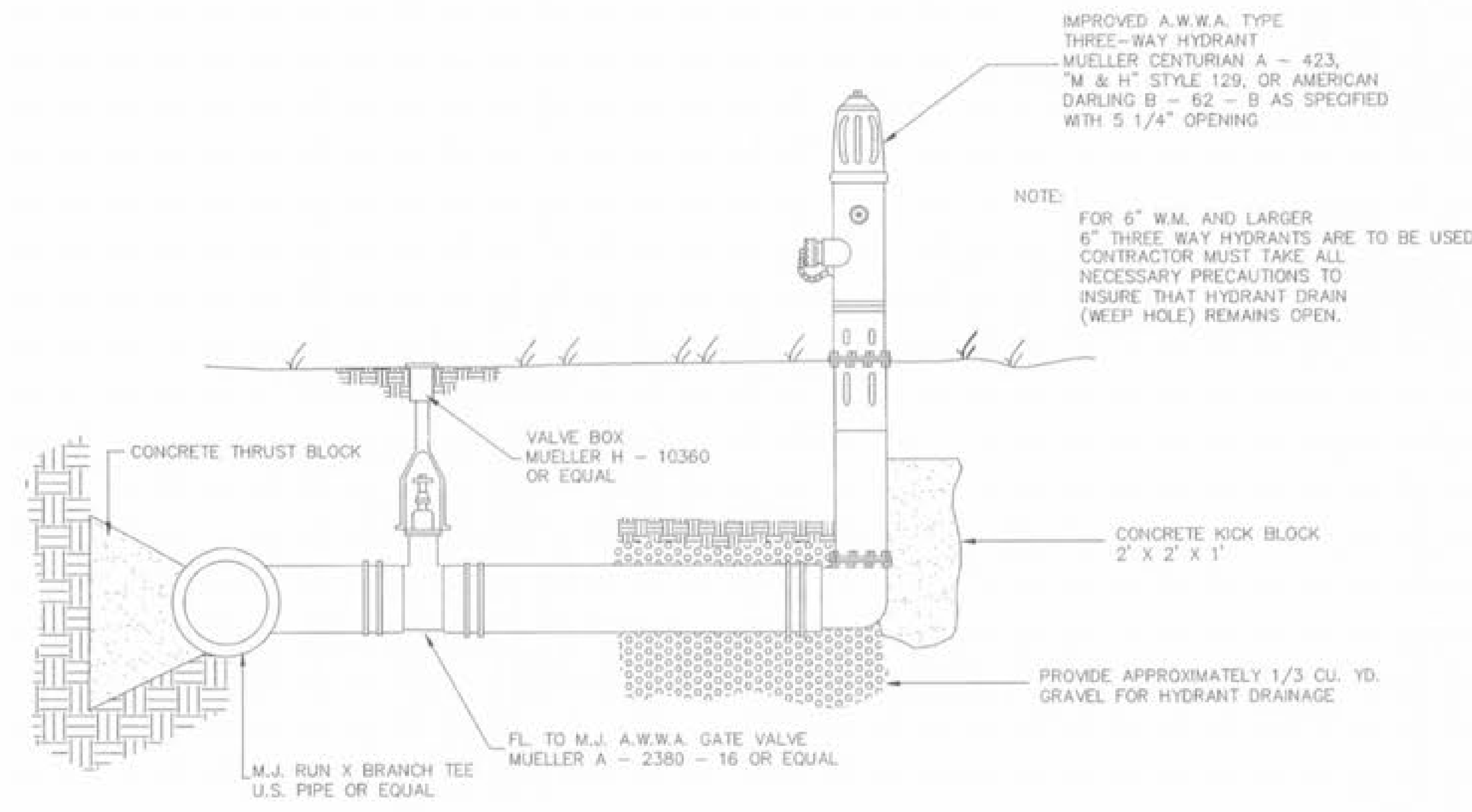


TYPICAL WATER AND SEWER SEPARATION
NOT TO SCALE

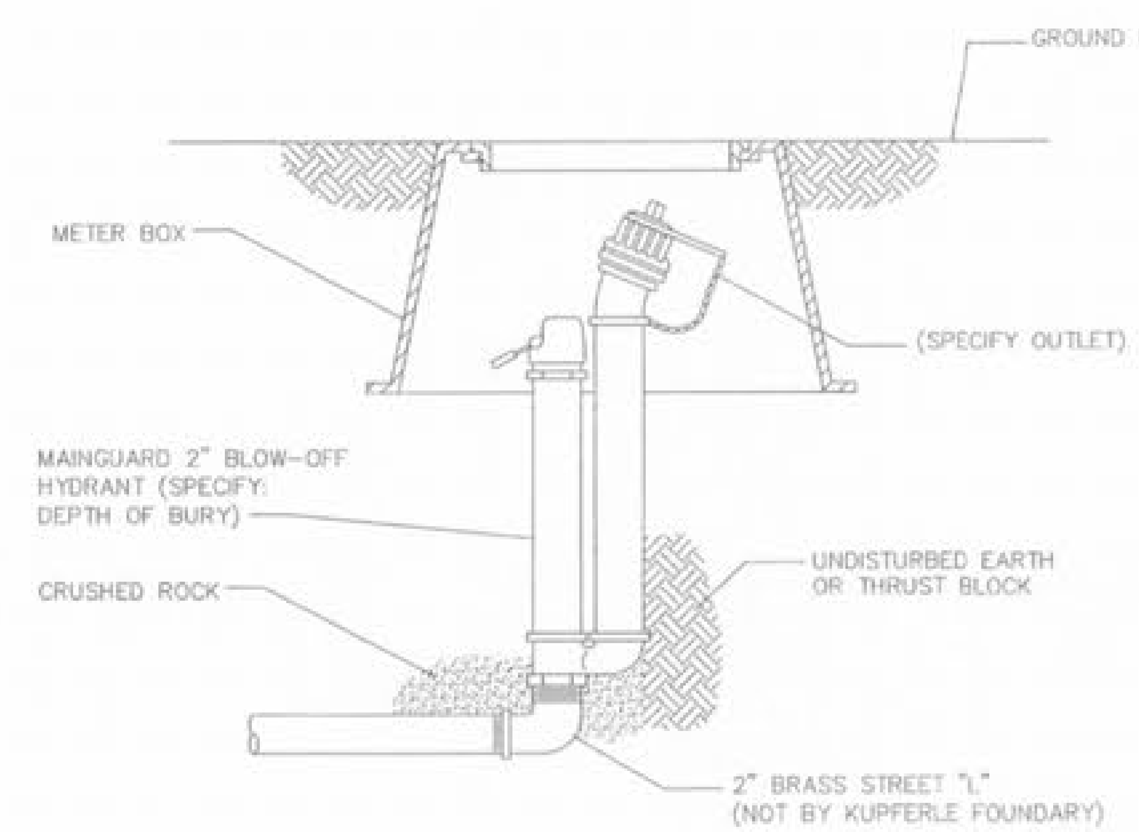


MAIN SIZE (I.D.)	MIN. THRUST BLOCK BEARING DIMENSIONS TO BEAR AGAINST UNDISTURBED EARTH				
	45° BEND	22 1/2° BEND	TEE	VALVE	CROSS
2"	.5' X 1'	.5' X 1'	.5' X 1'	.5' X 1'	.5' X 1'
4"	1' X 1'	1' X 1'	2' X 1'	2' X 1'	1' X 1'
6"	1.5' X 1'	1' X 1'	2' X 1'	2' X 1'	1' X 1'
8"	2' X 1'	1' X 1'	2' X 2.5'	2' X 2'	1' X 1.5'
10"	2' X 2.5'	1.5' X 2'	2' X 3.5'	2' X 3'	2' X 2'
12"	2' X 3.5'	1.5' X 2.5'	3' X 3.5'	3' X 3'	2' X 3'
16"	3' X 4'	2' X 3'	4' X 4.5'	3' X 4.5'	3' X 3.5'

TYPICAL THRUST BLOCK DETAILS
NOT TO SCALE



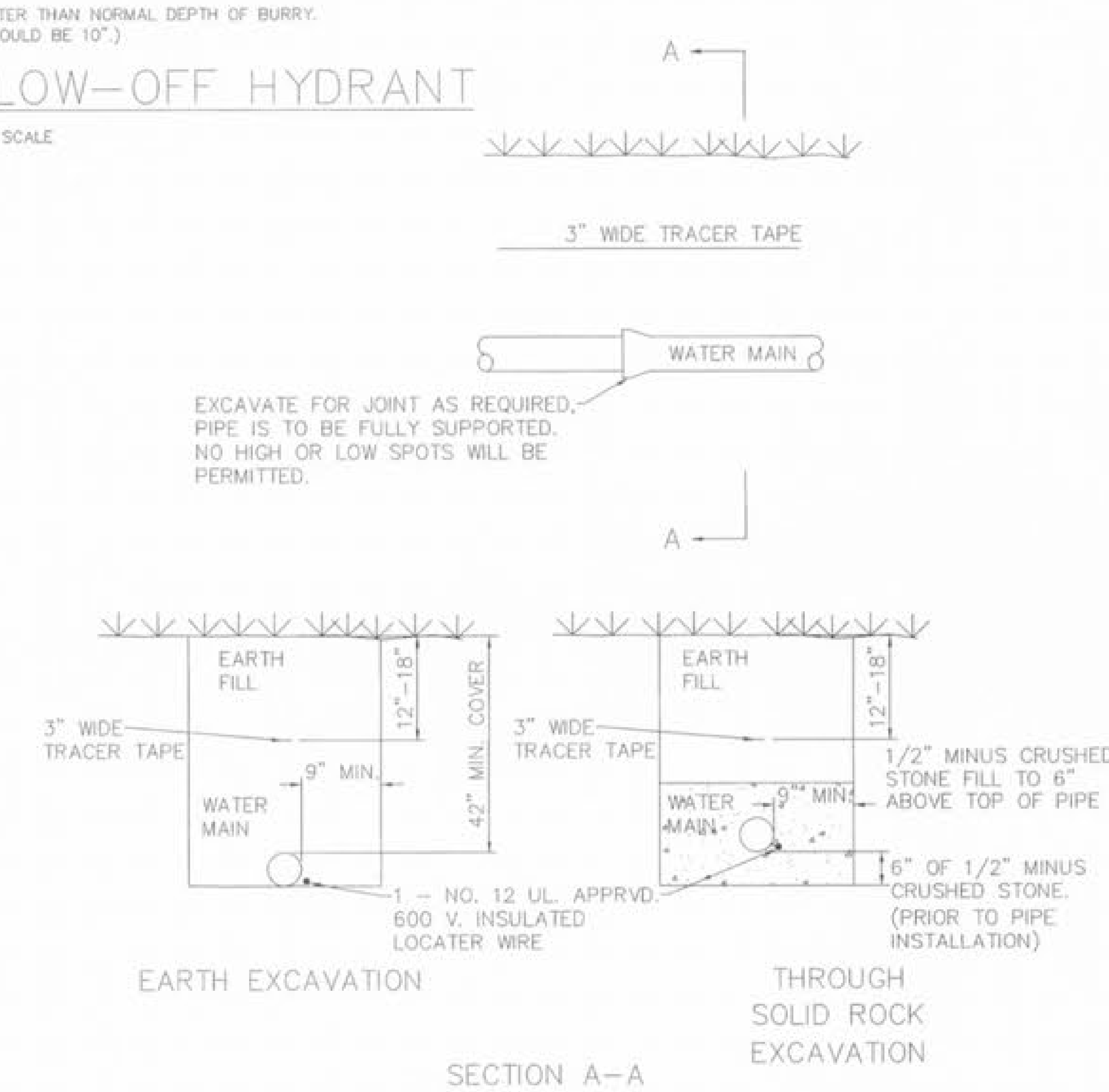
FIRE HYDRANT INSTALLATION DETAIL
NOT TO SCALE



BLOW-OFF HYDRANTS SHALL BE NON-FREEZING, SELF DRAINING TYPE, WITH AN OVERALL LENGTH OF '. SET UNDERGROUND IN A METER BOX, THESE HYDRANTS WILL BE FURNISHED WITH A 2" FIP INLET, A NON-TURNING OPERATING ROD, AND SHALL OPEN TO THE LEFT. ALL OF THE WORKING PARTS SHALL BE OF BRONZE-TO BRONZE DESIGN, AND BE SERVICABLE FROM ABOVE GRADE WITH NO DIGGING. THE OUTLET SHALL ALSO BE BRONZE AND BE 2-1/2" NST. HYDRANTS SHALL BE LOCKABLE TO PREVENT UNAUTHORIZED USE AS MANUFACTURED BY KUPFERLE FOUNDRY CO., ST. LOUIS, MO, OR APPROVED EQUAL.

(SPECIFY OVERALL LENGTH 6" SHORTER THAN NORMAL DEPTH OF BURRY. MINIMUM OPENING IN METER BOX SHOULD BE 10".)

ECLIPSE NO. 78 BLOW-OFF HYDRANT
NOT TO SCALE



TYPICAL WATER MAIN INSTALLATION DETAILS
NOT TO SCALE

INSTALLATION OF WATER MAINS

"ALWAYS KEEP THE WATER MAIN ON EASEMENT"

1. Water main should be located 5' behind the curb, as not to interfere with other utility locations.
2. All water mains should be 8 inches in diameter, or larger. The last 300' shall be 6" diamter pipe and must be C906, DR 13.5 Class 130 pipe with City approval and with blue stripe to identify as water pipe. The pipe should have a Minimum Pressure Rating (PR) of 200 psi or SDR-21 for 8" and C906 DR 13.5 Class 130 for 12" and larger pipe with blue stripe to identify as water pipe. All water mains of PVC material shall be certified by NSF and listed in NFS Standard 61. NSF stands for NSF international which is an agency that certifies materials, such as pipe, valves, etc. for use in potable water systems among other things. Standards 61 is the (ANSI/NSF Standard 61) is a listing of certified drinking water system components. The Missouri DNR requires that product which come in contact with drinking water be listed in NSF Standard 61. If the pipe is NSF certified, it will have a stamp on the pipe that says "NSF-pw".
3. Fire hydrants must be Mueller Steamer Centurion and painted yellow in color and all valves must be Mueller mechanical joint resilient wedge gate valve, AWWA approved. A fire hydrant is required at the end of all dead end waterlines, including those which may be extended at a later date.
4. All fire hydrants are to have valves flanged to the tee and (with a total length of 38" or less) hydrant swivel anchored to the valve. Clean 1" rock should be used to backfill above the weep holes of the fire hydrant.
5. The contractor shall place all fire hydrants 1.5 feet and three feet from the street curb (measured from the edge of the fire hydrant). The buryline should be set 6" higher in elevation than top of curb.
6. These water bends (45°, 22-1/2°, 11-1/4°), are to be made with mechanical joint fittings using mega lugs up to 10" diameter. 12" and larger requires mega lugs and concrete blocking. Concrete not to be on nuts or bolts. Ninety degree (90°) bends are not allowed. The first slip joint, up and down stream after fittings, should be restrained per pipe manufacturer specs. Bitumois Cole Spray shall be applied to all bolts for mechanical connections.
7. Tees, 4-ways, etc. shall have concrete blocking. Concrete not to be on nuts or bolts.
8. Rocky soils shall require bedding 6" under and 6" over water pipe.
9. Concrete encasement required, to DNR Specification, when crossing storm or sanitary sewers. Sanitary: vertical is 18", horizontal is 10' — Storm: vertical is 12", horizontal is 3'.
10. Must use appropriate sized casings when crossing streets.
11. Must attach coated solid core, 12 gauge tracer wire, taped to the top of the pipe. All wire must run up the outside of the PVC SDR 21 valve box and is to be tucked inside the valve box under the water lid.
12. Use 3M waterproof splice kits for all splicing of tracer wire.
13. Any project where fire hydrants, or valves, are over 600' apart, tracer wire with a connecting box must be installed every 500'. The connecting box will be a Carsonite Scepter Telecommunications Test Station with white post and blue cap made of Lexan material.
14. A chlorine test is required. It must initially test at 25 PPM, or greater, and 24 hours later 10 PPM must be present. A City Inspector must test it, and have 24 hours notice prior to that inspection. The main will be tested for chlorine every 1,200' of pipe.
15. If chlorine test fails then main must be rechlorinated.
16. Coliform samples should be collected every 1,200'.
17. Final Pressure Test: The water main must be pumped up to 125 PSI and maintain this pressure for one hour without any drop in pressure. The City may require a higher pressure test if deemed necessary.
18. Gas, water, and other underground utilities shall not conflict with the depth or horizontal location of existing and proposed sanitary and storm sewers including house laterals.
19. All waterline construction shall conform to current City of O'fallon Standards and Specifications.
20. The contractor shall place the 'steamer' outlet of the fire hydrant toward the street.
21. Backfill no debris larger than 6" in diameter.
22. All creek crossings will require DR13.5 Class 130 C906. If less than 3' of cover, concrete encasement with creek bank riprap required a minimum of 20' of cover.
23. Hydrant distances:600'/300' —Residential/commercial pending.
24. Easements shall be provided for water mains, and all utilities on the record plat. See record plat for location, size and width of easements.
25. The Public Water Supply Dist#2 Water Department shall be notified at least 48 hours prior to construction of water mains for coordination and inspections.
26. All open mains should be properly capped when the main is unattended for more than 4 hours. Duct tape the end closed so it is visually seen.
27. All bore casings, except service lines, shall have a casing spacer every 10' and C906 DR 13.5 Class 130 pipe will be required. All bores will follow the Missouri State Highway specifications.
28. All service lines under the streets are to have a 2" PVC casing installed, at a minimum of 30" depth. Larger casing may be required depending on service size requested or required. All water mains shall be buried at a depth to allow a minimum cover of 42".
29. Notify the City when work stops and when the Contractor will not be continuing work. Twenty-four (24) hour notice is required notifying when work will continue.
30. All water mains are to be installed in a straight line (no bends in individual pipes). A 5% deflection in joints is allowed.
31. Small field changes may be made by the City Inspector. Larger changes have to be resubmitted by the Developer's Engineer for approval.
32. As-Built drawings must be sent to the City before the project can be considered final. (Ex: Showing location changes of elbows, elevations, easements, etc.)
33. Air release valve specifications for water mains. Where required, all air release valves installed on water mains shall be Val Matic Model VM-202C combination air release/air and vacuum valve - 2" NPT or equivalent approved by the City of Wentzville. All air valves shall be installed in vertical position and plumbed with a brass saddle - 2" NPT, a brass "ball style" shut off valve - 2" NPT, a brass "ball style" drain valve - 1/2" NPT and brass fittings. All air valves shall be enclosed in a concrete vault having a minimum of 60" and a steel access cover with the lid having a minimum diameter of 24". Installation shall also include a 2" SCH-40 PVC screened vent pipe, attached to the air valve's outlet port extending to the outside vault, with the discharge facing downward allowing a minimum air gap of 12". The exposed main shall be bedded with 1" clean rock. An inspection and air test will be required with a 24 hour notice.

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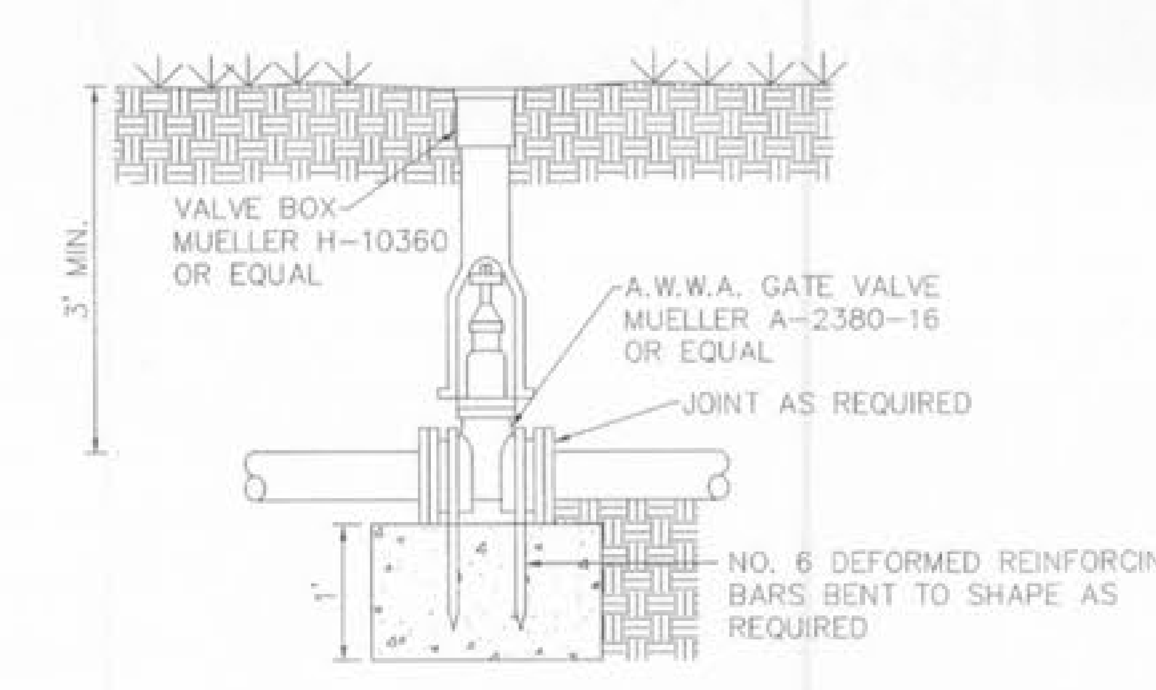

GATE VALVE W/THRUST BLOCK
NOT TO SCALE