

INSTALLATION OF WATER MAINS

"ALWAYS KEEP THE WATER MAIN ON EASEMENT"

1. The Pipe should have a Minimum Pressure Rating (PR) of 200 PSI or SDR-21 for 8" and C-900 class 150 or SDR 18 for 12" or larger pipes. All water mains of PVC Material shall be certified by NFS and listed in NFS Standard 61. NFS 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 components. The Missouri DNR requires that products which come in contact with drinking water be listed in NSF Standard 61. If the pipe is NFS certified, it will have a stamp on the pipe that says "NSF-pw".
2. Fire Hydrants must be Mueller Steamer Centurion and painted yellow in color and all valves must be Mueller Mechanical joint resilient wedge gate valve. A fire hydrant is required at the end of all dead end waterlines, including those which may be extended at a later date.
3. All fire hydrants are to have valves flanged to the tee and (with a total length of 38" or less) hydrants swivel anchored to the valve. Clean 1" rock should be used to backfill above the weep holes of the fire hydrant.
4. The contractor shall place all fire hydrants between 1.5 feet and 3 feet from the Parking lot curb (measured from the edge of the fire hydrant). The buryline should be set 6" higher in elevation than the top of curb.
5. These water bends (45 degrees, 22 1/2 degrees, 11 1/4 degrees), are to be made with mechanical joint fittings using mega lugs up to 10" diameter, 12" or larger requires mega lugs and concrete blocking. Concrete not to be on nuts or bolts. Ninety degree bends are not allowed. The first slip joint, up and down stream after fittings, should be restrained per pipe manufacturer specs.
6. Tees, 4-ways, etc. shall have concrete blocking. Concrete not to be on nuts or bolts.
7. Rocky soils shall require bedding 6" under and 6" over water pipe.
8. 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".
9. Must attach coated solid core, 12 gauge copper tracer wire, taped to the top of pipe. All copper wire must run up the outside of the PVC SDR 21 valve box and I to be tucked inside the valve box under the water lid.
10. Use 3M waterproof splice kits for all splicing of tracer wire.
11. A chlorine test is required. It must initially test at 25 PPM, or greater, and 24 hours later 10 PPM must be present. It must be tested by the PWS#2 Inspector, and have 24 hours notice prior to that inspection. The main will be tested for CL2 every 1,200' of pipe.
12. If chlorine test fails then the main must be re-chlorinated.
13. Caliform samples should be collected every 1,200'.
14. 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. PWS#2 may require higher pressure test if deemed necessary.
15. All waterline construction shall conform to current Public Water Supply District #2 Standards and Specifications.
16. The contractor shall place the "streamer" outlet of a fire hydrant towards the street.
17. Backfill no debris larger than 6" in diameter.
18. PWS#2 shall be notified at least 48 hours prior to the construction of water mains for coordination and inspections.
19. 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.
20. Notify PWS#2 when work stops and when the Contractor will not be continuing work. Twenty-four (24) hour notice is required notifying when work will continue.
21. All water mains are to be installed in a straight line (no bends in individual pipes). A 5% deflection in joints is allowed. Bends around cut-de-sacs are to be made with 22 1/2 degree elbows.
22. Small field changes may be made by PWS#2 Inspector. Larger changes have to be resubmitted by the Developer's Engineer for approval.
23. As-Built drawings must be sent to PWS#2 before the project can be considered Final. (Ex. Showing location changes of elbows, elevations, easements, etc.)

NOTE: 24 HOUR NOTICE REQUIRED ON ALL INSPECTIONS

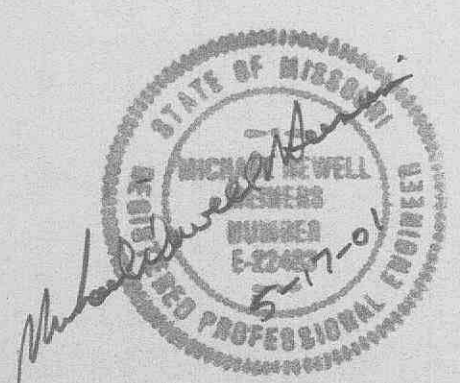
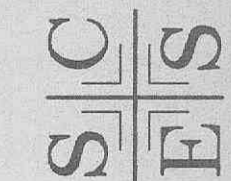
Revised as per GEA

05/16/01

SANITARY AND WATERMAIN NOTES
GRANADA WOODS COMMERCIAL PARK

ST. CHARLES ENGINEERING & SURVEYING, INC.

801 S. FIFTH STREET, SUITE 202
ST. CHARLES, MO 63301
TEL:(636) 947-0607 FAX:(636) 947-2448



ORDER NO.

20-1427-01

DATE

04/03/00

C-2