A WATERLINE EXTENSION FOR A TRACT OF LAND BEING PART OF O'FALLON GARDENS A SUBDIVISION LOCATED WITHIN SECTION 20, TOWNSHIP 47 NORTH, RANGE 3 EAST, ST. CHARLES COUNTY, MISSOURI

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' can be 6" diameter pipe and must be C906,DR13.5 Class 100 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 DR13.5 Class 100 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 comes 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. 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 between 1.5 (1 1\2) feet and three feet (3') 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. Bitmuois Coie 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 castings 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 CL2 every 1,200' of pipe.

15. If chlorine test fails then main must be rechlorinated.

16. The contractor will meter water and pay for it, or they may purchase one (1) day usage tags. Daily tags are $25.00 per day, daily jetting tags are $50.00 per day not to exceed five (5) days. Hydrant meters are required for all over 5 days usage requests. Hydrant meters are at Public Works and meters require a $1,600 deposit. NOTE: All jetting requires appropriate backflow protection.

17. Coliform samples should be collected every 1,200'.

18. Final Pressure Test: The water main must be pumped up to 150 PSI and maintain this pressure for one hour without any drop in pressure. The City may require a higher pressure test if deemed necessary.

19. 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.

20. All waterline construction shall conform to current City of O'Fallon Standards and Specifications.

21. The contractor shall place the 'steamer' outlet of the fire hydrant toward the street.

22. Backfill no debris larger than 6" in diameter.

23. All creek crossings will require ductile iron pipe except when C906 is used. If less than 3' of cover, concrete encasement with riprap required.

24. Hydrant distances: 600' / 300' – Residential/Commercial pending.

25. Easements shall be provided for water mains, and all utilities on the record plat. See record plat for location size, and width of easements.

26. The City of O'Fallon Water Department shall be notified at least 48 hours prior to construction of water mains for coordination and inspections.

27. 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

28. All bare casings, except service lines, shall have a casing spacer every 10' and C906 DR 17 Class 100 pipe will be required.

29. 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".

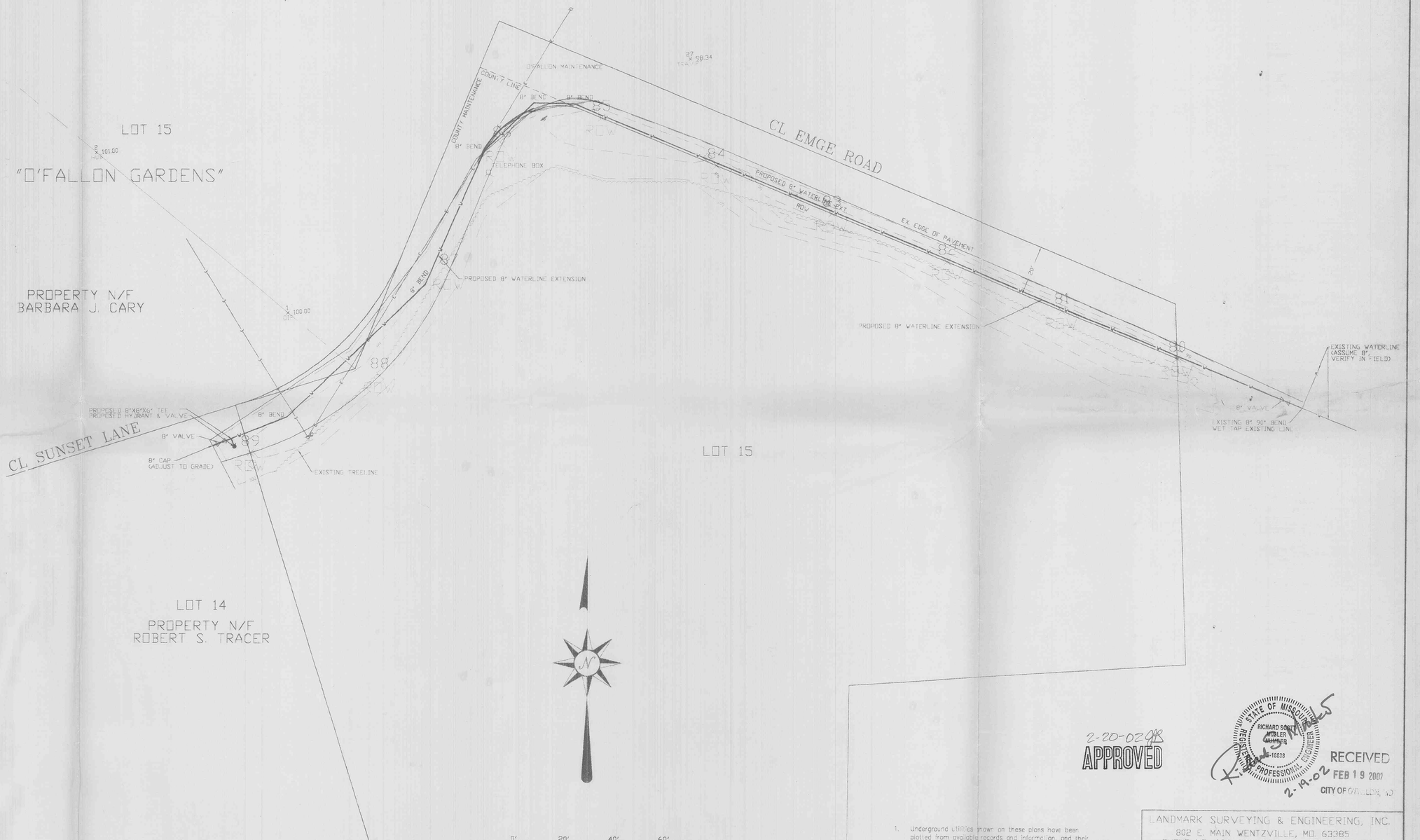
30. Notify the City when work stops and when the Contractor will not be continuing work. Twenty-four (24) hour notice is required notifying when work will continue.

31. 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 cul-de-sacs are to be made with 22 1\2° elbows.

32. Small field changes may be made by the City inspector. Larger changes have to be resubmitted by the Developer's Engineer for approval.

33. 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.)

NOTE: 24-HOUR NOTICE REQUIRED ON ALL INSPECTIONS



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CITY OF O'FALLON, MO

2-19-02

1. Underground utilities shown on these plans have been plotted from available records and information, and their locations shall be considered approximate only. The verification of the actual location of all underground utilities, either shown or not shown on these plans, shall be the responsibility of the contractor(s), and the verification of the actual location shall be performed prior to beginning work.

2. All construction shall be performed in accordance with the specifications, ordinances, rules, regulations, guidelines and/or policies of the local governing jurisdictional authority.

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WATERLINE EXTENSION

DRAWN BY: GJD	DATE: 11/21/01	
CHECKED BY: BWW	DATE:	SHEET 1 OF 1
REVISIONS BY: GJD	DATE: 2/14/02	
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Inspector