

**WATER LINE NOTES**

1. ALL MATERIALS AND METHODS OF CONSTRUCTION FOR WATER MAINS TO MEET REQUIREMENTS OF THE CITY OF O'FALLON AND PUBLIC WATER SUPPLY DISTRICT NO. 2.
2. WATER MAINS SHALL BE CLASS 52 DUCTILE IRON PIPE (D.I.P.) OR CLASS 200 SDR 21 PVC.
3. DUCTILE IRON PIPE MATERIALS AND CONSTRUCTION SHALL BE IN ACCORDANCE WITH ALL THE REQUIREMENTS OF U.S.A. STANDARD A2151 (A.W.W.A. C-151-85). THE PIPE SHALL BE FURNISHED WITH MECHANICAL PUSH ON OR FLANGE JOINTS AS REQUIRED. THE INTERIOR SURFACE OF PIPE SHALL BE COATED WITH A CEMENT-MORTAR LINING IN ACCORDANCE WITH U.S.A. STANDARD A214 (A.W.W.A. C-104). AFTER DRYING, THE CEMENT LINING SHALL BE SEAL COATED WITH SIMILAR A.W.W.A. APPROVED BITUMINOUS VARNISH. ALL FITTINGS AND BENDS SHALL BE CONSTRUCTED OF CAST OR DUCTILE IRON.
4. WATER MAIN TRACER TAPE TO BE INSTALLED WITH ALL WATER MAIN, FITTINGS, AND VALVE INSTALLATION AND SHALL CONSIST OF A STANDARD ELECTRIC SERVICE WIRE, A SINGLE NO. 12 U.L. APPROVED COPPER WIRE OF THE SOLID OR STRAND TYPE WITH INSULATION FOR 600 VOLTS.
5. WATER MAIN LOCATE WIRE SHALL BE INSTALLED WITH ALL WATER MAIN, FITTINGS, AND VALVE INSTALLATION AND SHALL CONSIST OF A STANDARD ELECTRIC SERVICE WIRE, A SINGLE NO. 12 U.L. APPROVED COPPER WIRE OF THE SOLID OR STRAND TYPE WITH INSULATION FOR 600 VOLTS.
6. ALL VALVES FOR EXTERIOR USE SHALL BE BURIED GATE VALVES WITH A VALVE BOX AND TWO (2) INCH SQUARE NUT ATTACHMENT FOR MANUAL OPERATION WITH STANDARD VALVE WRENCH. GATE VALVE SHALL BE IRON BODIED WITH BRASS OR BRONZE MOUNTED DOUBLE DISC GATE. GATE VALVES SHALL BE OF THE NON-RISING STEM TYPE, OPENED BY TURNING COUNTER-CLOCKWISE. THE VALVE STEM SHALL HAVE DOUBLE "O" RING SEALS AND TERMINATE AT TOP WITH TWO (2) INCH SQUARE NUT. GATE VALVE CONSTRUCTION AND MATERIALS SHALL CONFORM TO THE LATEST GOVERNING SPECIFICATIONS OF THE A.S.T.M. AND A.W.W.A. ALL GATE VALVES FOR USE SHALL BE "MUELLER" OR APPROVED EQUAL.
7. VALVE BOXES FOR USE SHALL BE THE SCREW-TYPE, EXTENSION SLEEVE KIND, OR P.V.C. PIPE. ALL BOXES SHALL BE FITTED WITH A RECESSED COVER HAVING THE WORD "WATER" CAST IN THE TOP.
8. FIRE HYDRANTS SHALL BE MUELLER "SUPER CENTURION 250" OR THE AMERICAN DARLING MODEL NO. "B-84-B" OR KENNEDY K810, OR APPROVED EQUAL. HYDRANTS SHALL BE TRAFFIC MODEL TYPE WITH A WORKING PRESSURE OF 150 PSI IN FULL COMPLIANCE WITH A.W.W.A. STANDARD SPECIFICATIONS C-502 OF THE LATEST REVISION. HYDRANTS TO BE THREE-WAY WITH TWO (2) HOSE CONNECTIONS AND ONE PUMPER CONNECTION AND SHALL HAVE 5 1/4" VALVE OPENINGS. HYDRANTS TO BE RED IN COLOR.
9. CONCRETE FOR THRUST BLOCKING AT BENDS, TEES, VALVES, HYDRANTS, ETC. SHALL BE 3,500 PSI COMPRESSIVE STRENGTH AT 28 DAYS.
10. BEFORE WATER MAINS SHALL BE ACCEPTED AND PUT INTO SERVICE THEY SHALL BE TESTED FOR TWO (2) HOURS ON EACH SEGMENT BETWEEN END POINTS AT A TEST PRESSURE OF AT LEAST 50% IN EXCESS OF NORMAL MAXIMUM OPERATING PRESSURE. NOT TO EXCEED 200 PSI. WATER MAINS SHALL BE STERILIZED AND FLUSHED IN ACCORDANCE WITH ST. LOUIS COUNTY OR MISSOURI AMERICAN WATER COMPANY DEPENDING UPON WHO IS SELECTED TO SERVE THE DEVELOPMENT.
11. ALL WATER LINES AND SERVICE LINES SHALL HAVE A MINIMUM OF 42" OF COVERAGE.
12. VERTICAL CLEARANCE BETWEEN SEWERS AND WATER MAINS SHALL BE A MINIMUM OF 2'-0".
13. EACH FIRE HYDRANT SHALL HAVE A 6 INCH BARREL AND SHALL BE OF THE BREAKAWAY DESIGN, FROST FREE WITH CHAIN, LEFT HAND OPEN DESIGN AND HAVE NATIONAL STANDARD THREADS.
14. IN SETTING HYDRANTS, DUE REGARD SHALL BE GIVEN TO FINAL GRADELINE. THE CENTER OF A HOSE NOZZLE OUTLET SHALL NOT BE LESS THAN EIGHTEEN (18) INCHES ABOVE GRADE AND THE OUTLETS MUST FACE THE STREET OR ACCESS DRIVE.
15. THERE SHALL BE NO OBSTRUCTION, I.E. PLANTINGS, BUSHES, TREES, SIGNS, LIGHT STANDARDS, MAILBOXES, ETC. WITHIN SIX (6) FEET OF ANY FIRE HYDRANT, AND/OR FIRE DEPARTMENT CONNECTION TO AN AUTOMATIC SPRINKLER SYSTEM.
16. METER PITS/VAULTS SHALL BE INSTALLED IN "GREEN SPACE" PER WATER DISTRICT SPECIFICATIONS.
17. PRIVATE WATER MAINS SHALL BE TESTED PER FWSO NO. 2 SPECIFICATIONS BEFORE BEING PLACED INTO SERVICE.
18. ALL WATER MAINS, VALVES, FITTINGS, HYDRANTS AND RELATED ITEMS ARE TO BE INSTALLED IN ACCORDANCE WITH THE CURRENT FWSO#2 OF ST. CHARLES COUNTY GUIDELINES AND SPECIFICATIONS.
19. PUBLIC WATER SUPPLY DISTRICT NO. 2 REQUIRES ONE (1) WEEK NOTICE BEFORE CONSTRUCTION.
20. IT IS THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN ALL MDDOT AND CITY PERMITS FOR ANY WORK ALONG THE ROADWAYS. COPIES OF THESE PERMITS MUST BE RECEIVED BY THE WATER DISTRICT PRIOR TO CONSTRUCTION.
21. SDO WILL BE REQUIRED FOR ANY OFFSITE RESTORATION UNLESS OTHERWISE SPECIFIED BY THE PROPERTY OWNER.
22. ALL PRIVATE FIRE HYDRANTS ARE REQUIRED TO BE PAINTED RED PER THE WATER DISTRICTS SPECIFICATIONS.
23. THE PRIVATE WATER SYSTEM WILL NEED TO BE TESTED PER THE WATER DISTRICTS SPECIFICATIONS BEFORE IT IS ALLOWED INTO SERVICE.

**COTTLEVILLE FIRE PROTECTION DISTRICT NOTES**

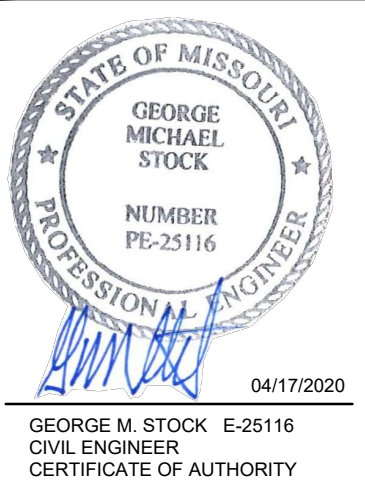
1. THE FIRE DEPARTMENT CONNECTION WILL BE LOCATED WITHIN 150-FEET OF A FIRE HYDRANT.
2. SEE SITE PLAN FOR WATER MAIN LAYOUT AND SIZES.
3. THE MINIMUM FIRE FLOW FROM THE FIRE HYDRANTS SHALL BE IN ACCORDANCE WITH SECTION B105 OF THE 2015 INTERNATIONAL FIRE CODE.
4. EACH FIRE HYDRANT SHALL HAVE NOT LESS THAN TWO 2-1/2 INCH OUTLETS AND ONE 4-1/2 INCH OUTLET. A 5-1/4 INCH VALVE, A 6-INCH BARREL AND SHALL BE OF THE BREAKAWAY DESIGN, FROST FREE WITH CHAIN, LEFT HAND OPEN DESIGN AND HAVE NATIONAL STANDARD THREADS.
5. EACH FIRE HYDRANT SHALL BE PROVIDED WITH A CONTROL VALVE IN THE HYDRANT CONNECTION SUCH THAT THE HYDRANT CAN BE REMOVED FROM SERVICE WITHOUT SHUTTING OFF WATER SUPPLY TO OTHER FIRE HYDRANTS.
6. THE FIRE HYDRANTS WILL BE SET TO THE FINAL GRADE, NOT LESS THAN 18-INCHES FROM CENTER OF A HOSE NOZZLE OUTLET TO FINISH GRADE AND THE OUTLETS MUST FACE THE STREET OR FIRE ACCESS ROAD.
7. THERE SHALL BE NO OBSTRUCTION, I.E. PLANTINGS, BUSHES, TREES, SIGNS, LIGHT STANDARDS, MAILBOXES, ETC. WITHIN SIX (6) FEET OF ANY FIRE HYDRANT, AND/OR FIRE DEPARTMENT CONNECTION TO AN AUTOMATIC SPRINKLER SYSTEM.
8. IMMEDIATE ACCESS TO A FIRE DEPARTMENT CONNECTION SHALL BE MAINTAINED AT ALL TIMES, WITHOUT OBSTRUCTIONS BY FENCES, BUSHES, TREES, WALLS OR ANY OTHER FIXED OR MOVEABLE OBJECT. THE CLEAR SPACE AROUND THE FIRE DEPARTMENT CONNECTION SHALL BE IN ACCORDANCE WITH IFC SECTION 912.4.2 OF THE 2015 INTERNATIONAL BUILDING CODE (IBC), AS AMENDED BY ORDINANCE 23 OF THE COTTLEVILLE FIRE PROTECTION DISTRICT.
9. THE HYDRANTS ON THE SYSTEM SIDE OF THE DETECTOR CHECK/METER VALVE WILL BE PRIVATE AND PAINTED RED (PORTER 4119 OR EQUAL) IN ACCORDANCE WITH IFC SECTION 907.3.3, AS ADOPTED THROUGH ORDINANCE 23.

**NOTES CONTINUED**

10. A CONTROL VALVE SHALL BE PROVIDED AT THE CONNECTION FROM THE PRIVATE FIRE SERVICE MAIN TO THE BUILDING. VALVES SHALL BE EITHER POST INDICATOR VALVE (SECTION 3-3 OF NFPA 24) VALVES IN PITS (SECTION 3-4), OR A LISTED NON-INDICATING VALVE WITH APPROVED ROADWAY BOX. ALONG WITH THIS VALVE A T-WRENCH SHALL BE PROVIDED IN A CLEARLY IDENTIFIED AND READILY ACCESSIBLE LOCATION OF THE PREMISES.
11. A SEPARATE PERMIT IS REQUIRED THROUGH THIS DEPARTMENT FOR THE INSTALLATION OF PRIVATE FIRE SERVICE MAINS.
12. UNDERGROUND PIPING FOR PRIVATE SERVICE MAINS SHALL BE LISTED FOR FIRE PROTECTION SERVICE AND SHALL COMPLY WITH AWWA STANDARDS.
13. IDENTIFICATION SIGNS SHALL BE PROVIDED AT EACH VALVE TO INDICATE ITS FUNCTION AND WHAT IT CONTROLS.
14. ALL TEES, PLUGS, CAPS, BENDS, REDUCERS, VALVES AND HYDRANT BRANCHES SHALL BE RESTRAINED AGAINST MOVEMENT BY USING THRUST BLOCKS IN ACCORDANCE WITH SECTION 10.8.2 OF NFPA 24, OR RESTRAINED JOINT SYSTEMS IN ACCORDANCE WITH NFPA SECTION 10.8.3.
15. THE FLUSHING AND TESTING OF THE UNDERGROUND PIPING, ETC. FOR PRIVATE SERVICE MAINS SHALL COMPLY WITH CHAPTER 9 OF NFPA 24 AND SHALL BE WITNESSED BY A REPRESENTATIVE FROM COTTLEVILLE FIRE PROTECTION DISTRICT.
16. THE MINIMUM TURNING RADIUS OF FIRE APPARATUS ACCESS ROADS SHALL BE 42'.
17. PROVIDE KEY BOXES FOR EACH OF THE APARTMENT BUILDINGS, IN ACCORDANCE WITH IFC SECTION 506.1.

**DETAILS NOTE:**  
 DETAILS SHOWN FOR THE CONVENIENCE OF THE CONTRACTOR AND ARE FOR REFERENCE ONLY. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE WATER DISTRIBUTION SYSTEM SPECIFICATIONS FOR PUBLIC WATER SUPPLY DISTRICT NO. 2 OF ST. CHARLES COUNTY, MISSOURI, DATED JULY 2013.  
 CONTRACTOR RESPONSIBLE FOR OBTAINING CURRENT SPECIFICATIONS & DETAILS.

STOCK AND ASSOCIATES CONSULTING ENGINEERS, INC. AND THE UNDERSIGNED ENGINEER HAVE NO RESPONSIBILITY FOR SERVICES PROVIDED BY OTHERS TO IMPLEMENT THE REQUIREMENTS SHOWN ON THIS PLAN AND ALL OTHER DRAWINGS WHERE THE UNDERSIGNED ENGINEER'S SEAL APPLIES. THE CONSTRUCTION MEANS AND METHODS ARE THE SOLE RESPONSIBILITY OF THE OWNER AND CONTRACTOR. STOCK AND ASSOCIATES CONSULTING ENGINEERS, INC. HAS NO RESPONSIBILITY TO SIGN FINAL APPROVED/REVISED AS SHOWN ON THIS PLAN UNLESS SPECIFICALLY ENGAGED AND AUTHORIZED TO DO SO BY THE OWNER OR CONTRACTOR.



REVISIONS:

- 1 01/16/2020 - 60% PRINTING
- 2 01/16/2020 - PERMIT SET
- 3 03/25/2020 - REVISED PER OWNER / CITY UTILITY COMMENTS
- 4 04/17/2020 - ADDENDUM A

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SHEET TITLE: **WATER DETAILS**

SHEET NO.: **C10.1**