

**RURAL LORAIN COUNTY WATER AUTHORITY
SUBDIVISION SPECIFICATIONS**

Revised January 01, 2021

GENERAL

1. A pre-construction meeting with RLCWA and Developer and its contractor shall be conducted at RLCWA's office or a mutually agreed upon site prior to the commencement of all phases of construction.
2. Developer shall repair any damage caused to RLCWA's existing distribution system at Developer's cost.
3. Developer or its designee shall assume full responsibility for making all necessary arrangements with other utility companies and will obtain all necessary highway permits and right of way easements.
4. RLCWA will make all tie-ins to existing water main at Developer's cost.
5. Prior to installation of water main, Developer or its designee shall submit to RLCWA three (3) copies of detailed engineering drawings, at one of the following scales: 1" = 50', 1" = 40' or 1" = 20', showing the proposed water main. These must be received before the inspection is scheduled.
6. No person shall install or maintain a water service connection where a booster pump has been installed, unless an approved method is in place and is operational to maintain a minimum suction pressure as prescribed in Section XI (A) of the current RLCWA *Rules and Regulations for Backflow Prevention*.
7. These specifications are to appear as part of the project drawings. No deviations or amendments to the specifications will be accepted without written authorization from RLCWA prior to any construction. It is the developer's responsibility to ensure that all water mains are installed in accordance with the RLCWA Subdivision Specifications in effect at the time of the start construction, and at the start of each subsequent phase of construction, and to update the project construction plans accordingly.
8. Prior to the start of any water main installation Developer shall be required to provide sufficient survey staking with the proposed final grade elevations and the centerlines of all water mains and appurtenances (including curb stops) clearly marked so that RLCWA's project inspector can verify that the maximum and minimum depth requirements and all offset/alignment requirements have been met.
9. No water service will be provided until these specifications are met in full.
10. Any and all unauthorized use of water and/or property belonging to RLCWA, to include use by sub-contractors, will be fined and billed to developer/responsible party.

WATER MAINS

1. All water main shall be installed seven feet (7') within Right-Of-Way and three feet (3') from the edge of any proposed sidewalk unless otherwise approved by RLCWA.
2. All water main shall be a minimum of eight-inch (8") PVC pipe meeting the following:
 - C909 (Iron Pipe Size), twenty-foot (20') minimum length.
 - Health properties seal of the National Sanitation Foundation testing laboratory.
 - Jointing material must be non-toxic.
 - Joints must be made with rubber O-rings and bell and spigot.

3. Water lines under existing or future pavement shall be in casing pipe and be Certa-Lok Brand, Yelomine Integral Bell, Restrained-Joint PVC Pipe, I.P.S. with a minimum two hundred (200) PSI rating. Casing pipe material type to be determined by RLCWA and/or the Regulatory Engineer. Trenches, under pavement, shall be bedded and back filled with approved granular material to pavement base. All other backfill to be excavated spoil or crushed granular fill approved by RLCWA.
4. Minimum depth of cover shall be forty-eight inches (48") not to exceed sixty inches (60").
5. Water mains shall not be installed under cul-de-sacs. The main is to be installed around the cul-de-sac so that all lots can be served without boring under the cul-de-sac. Care must be taken not to exceed the pipe manufacturer's maximum allowable joint deflection.
6. All waterlines that dead end that will or may be extended in future phases must be constructed so as to allow said extension to be made without depressurizing/shutting down the original waterline.
7. Certa-Lok Brand, Yelomine Integral Bell, Restrained-Joint PVC Pipe, I.P.S. with a minimum two hundred (200) PSI rating shall be installed a minimum of two (2) joints (40 ft. minimum) back from the end of the proposed waterline and at any and all fittings and valves, excluding hydrant tees. The Bell of ASTM F1483 or ASTM D2241 can be installed over like sized SDR 17 or 21 Certa-Lok Yelomine pipe (with another plain end or with spline groove cutoff). The Certa-Lok Yelomine pipe coupling or bell shall not be installed over top of or with the plain end of either ASTM F1483 or ASTM D2241 pipe pushed inside, an approved transition coupling must be used.

TESTING & INSPECTION

1. Water system shall be disinfected and bacteriologically tested prior to use in accordance with AWWA C-651. Bacteria samples will be collected by RLCWA. Bacteria sampling stations will be installed by RLCWA. Pressure testing shall be performed by Developer or its designee and witnessed by RLCWA. All new mains, including service connections up to and including the curb stop, must maintain a pressure of fifty (50) PSI over static pressure for a period of four (4) hours with 0.0 psi loss. RLCWA will provide and install a data logger device to monitor and record the pressure test. Costs for all testing shall be paid by Developer.
2. RLCWA shall inspect all water main installations. RLCWA requires a minimum of two (2) working days' notice by contacting the General Manager or appointed staff to complete the scheduling. Failure to comply with this section may require Developer to expose any line or fittings at its expense for RLCWA's inspection. RLCWA may stop any and all water main work for non-compliance with these Specifications. ALL INSPECTION SCHEDULING MUST BE COORDINATED THROUGH RLCWA.

APPURTENANCES (VALVES / HYDRANTS / BLOW-OFFS / FITTINGS / ETC.)

1. Any required blow off assemblies must be provided by Developer and installed in accordance with RLCWA Standard Blow Off Assembly Drawing.
2. Water valves shall be A-2361-23 Mueller or RLCWA approved other, with a resilient seat NRS complying with AWWA standard C-509. Non-rising stems opening left, two-inch (2") operating nut, MJ by MJ ends, O-ring sealed stuffing box, 200 PSIG maximum working pressure and 400 PSIG test pressure and shall be epoxy coated with stainless steel bolts.

3. Valve boxes shall be a cast iron valve box (three piece screw type) on all valves six inch (6") in size and larger (including watch valves). The valve box, lid and frame shall be made of cast iron as manufactured by Sigma Corporation or approved equal. The word WATER must be an integral part of the lid.
4. All mechanical joint fittings must comply with AWWA specification C-153 and C-111. They are to have a working pressure of three hundred and fifty (350) PSI and be made of SSB ductile iron. All MJ fittings are to be installed with concrete thrust blocks and restraining gland as manufactured by Smith Blair or approved equal. Mechanical joint fittings must be covered with polyethylene sheets in accordance with AWWA C105/A21.5-88 specifications. On all fittings, use CoreBlue bolts or 316 stainless steel with appropriate food grade lubricant applied to threads. Where vertical fittings are used and blocking not feasible, use 316 stainless steel threaded rods to restrain fittings.
5. Hydrants shall conform in all respects to the requirement of AWWA C-502. Hydrants shall have a six-inch (6") MJ shoe connection, two (2) two and one-half inch (2 ½") discharge nozzles and one (1) five-inch (5") Integral Storz Pumper Nozzle. Main valve shall be five and one-quarter inch (5 ¼") full opening. Hydrants shall be Mueller Company model A-423 with Integral Storz Pumper Nozzle or an RLCWA approved equal. Manufacturer's recommended bury depth must be met after final grading has been completed. The pumper nozzle must face toward the street unless otherwise directed by RLCWA.
6. The relocation of any appurtenances (ex. Valves, hydrants, blow-offs) installed by Developer due to conflicts with Developer or property owner construction shall be relocated by Developer.

TRACER WIRE

1. Underground detectable marking tape, two (2) inches in width, with a minimum 5.0 mil overall thickness shall be installed a minimum of eighteen inches (18") but no more than twenty-four inches (24") above the top of all water mains and laterals. Tape shall be manufactured using a 0.8 mil clear virgin polypropylene film, reverse printed and laminated to a 0.35 mil solid aluminum foil core, and then laminated to a 3.75 mil clear virgin polyethylene film. Tape shall be printed using a diagonally striped design for maximum visibility and meet APWA Color-Code standard for identification of buried utilities.
2. A tracer wire shall be installed on the bottom, center of all water mains and laterals in accordance with the attached tracer wire details.
3. On trenched installations tracer wire shall be Copperhead brand, 1230-HS, 12-gauge high strength 452 lb. break strength 30 mil HDPE jacket, copper-clad, steel reinforced tracer wire.
4. On bored or drilled installations tracer wire shall be Copperhead brand, 1245-EHS, 12-gauge extra high strength 1150 lb. break strength 45 mil HDPE jacket, copper clad, steel reinforced wire.
5. Tracer wire shall be fastened to pipe in a minimum of three places per pipe section using plastic tape.
6. Extend tracer wire to ground surface with a minimum of ten (10) feet of coiled wire at all valves, meter vaults and intermediate test stations in accordance with the attached tracer wire details.
7. Extend tracer wire the full length of all service laterals with a minimum of ten (10) feet of coiled wire at the curb stop end of lateral. The tracer wire and curb stop shall be buried bagged to prevent contamination.
8. Splice wires using Copperhead brand 3WB-01 weatherproof underground wire connectors.
9. Connect all lateral line wires to main line wires using Copperhead brand 3WB-01-Blue weatherproof underground wire connectors.

10. Intermediate Test Stations shall be installed at intervals not to exceed one thousand five hundred (1,500) feet. Stations shall be Copperhead brand, Lite Duty-XL, LDXL36, with blue cast iron cover. Splice wires using Copperhead brand 3WB-01 weatherproof underground wire connectors. A "Water Test Station" marker post must be installed within twelve-inch (12") of every test station site. Marker posts to be provided by RLCWA.
11. All new tracer wire installations shall be test located by Developer or its designee using typical low frequency (512Hz) line tracing equipment and witnessed by RLCWA prior to acceptance of the project. Developer shall notify RLCWA a minimum of two (2) working days prior to test.
12. Developer or its designee shall repair all deficiencies using Copperhead brand 3WB-01 weatherproof underground wire connectors and Copperhead brand, 1230-HS, 12-gauge high strength 452 lb. break strength 30 mil HDPE jacket, copper-clad, steel reinforced tracer wire as necessary to restore continuity.
13. Continuity testing in lieu of actual line locating shall not be accepted.
14. Tracer wire must be properly grounded using a Copperhead brand ANO-1005, Drive-in Magnesium Grounding Anode Rod at all valve risers, test stations, and at the ends of all water mains.

RESIDENTIAL WATER TAPS & CONNECTIONS

1. Developer shall install the service lines from the main including the saddle, corporation stop, polyethylene service line and a properly marked curb stop. The service line, saddle and the curb stop will be of adequate size as approved by RLCWA with a minimum size of one-inch (1") CTS. The saddle shall be Ford or Mueller Brand parts. Curb stops shall be Mueller Brand, Oriseal III Curb Valve, and be a minimum size of one-inch (1") CTS Mueller compression connection fitting with a maximum working pressure of 175 PSIG. Corporation Stops shall be Mueller Brand 300 Ball Type Corporation Valve and be a minimum size of one-inch (1") CTS Mueller Grip Compression Connection with AWWA Taper Mueller "CC" Thread with a maximum working pressure of 300 PSIG. All curb stops shall be marked with a 4"x4" wooden post painted blue in color, clearly marked with the word "WATER", and be at least thirty-six inches (36") above final grade.
2. All curb stops shall be located on the structure side of any proposed or existing sidewalks or be a minimum of sixteen feet (16') from the back of the curb. Curb boxes on corporation stops and curb stops are not required.
3. Service lines shall be installed according to RLCWA specifications and inspection.
4. Service lines shall be of adequate size as approved by RLCWA with a minimum size of one-inch (1"), Polyethylene (PE) DR-9 (200 PSI) CTS and conform to AWWA C901, ASTM F 741 with a pipe designation of 3408 defined ASTM D 2737.
5. RLCWA will provide and install the required meter and meter vault upon payment of the then-current tap fee.
6. The relocation of any service lines or appurtenances installed by Developer due to conflicts with Developer or property owner construction shall be relocated and re-tapped by Developer.

SHOP DRAWINGS

1. Shop drawings, product data and other work-related submittals are required and shall be submitted to RLCWA by Developer in three (3) copies and shall be checked and reviewed by Developer before submission to RLCWA. RLCWA's review shall not be construed as a complete check but will indicate only that the general method of construction and detailing is satisfactory. Review of such submittals by RLCWA will not relieve Developer of the responsibility for any errors which may exist as Developer shall be responsible for the dimensions and design of adequate connections, details and satisfactory construction of all work.
2. Developer shall coordinate the preparation and processing of submittals with the performance of the work. Coordinate each separate submittal with other submittals and related activities such as testing, purchasing, fabrication, delivery and similar activities that require sequential activity.
3. Shop drawings shall be prepared by a qualified detailer. Details shall be identified by reference to sheet and detail numbers shown on the Construction Drawings. Where applicable, show fabrication, layout and setting details.
4. Developer shall allow sufficient time so that the installation will not be delayed as a result of the time required to properly process submittals, including time for resubmittal, if necessary.
5. Developer shall mark each submittal with a permanent label for identification containing the following information:
 - Project name;
 - Date;
 - Name and address of Developer;
 - Name and address of supplier;
 - Name of manufacturer;
 - Number and title of appropriate specification section;
 - Drawing number and detail references, as appropriate; and
 - Similar definitive information as necessary.
6. Where manufacturer's brand names are given in the specifications for materials and products, Developer shall submit names and descriptive literature for all proposed substitute materials or products.
7. Developer should not begin work, or have material or products fabricated or shipped unless the applicable drawings or submittals have been reviewed by RLCWA and returned to Developer.