

ALABAMA DEPARTMENT OF TRANSPORTATION

DATE: October 21, 2013

Special Provision No. 12-0182(3)

EFFECTIVE DATE: January 1, 2014

SUBJECT: Water Line.

Alabama Standard Specifications, 2012 Edition, SECTION 641 and SECTION 863 shall be modified as follows:

SECTION 641 WATER LINE

641.03 Construction Requirements.

(a) GENERAL.

2. HYDRANT.

This Item [641.03(a)2] shall be amended by adding the following paragraph thereto:

Each fire hydrant unit shall include 3 feet of piping to attach to the water line. Fire Hydrant Extensions shall be installed to connect the standard fire hydrant unit as shown on the plans to the water line when the line is deeper than the standard 3 foot fire hydrant piping attachment.

(e) BACKFILLING.

This Subarticle [641.03(e)] shall be replaced with the following:

(e) BACKFILLING.

Backfilling shall be performed immediately after inspection as directed by the Engineer to secure the pipe position prior to proceeding to the next section.

The backfill material shall be carefully deposited equally on both sides of the pipe in uniform layers not to exceed 6 inches {150 mm} in compacted thickness to a density of not less than 95 percent of AASHTO T 99 maximum density. Backfill that is not under roadbeds shall be compacted as directed by the Engineer to be consistent with surrounding materials.

Where roadways and other crossings are disturbed, the Contractor shall restore them to their original condition and shall replace all surface material and all paving, sidewalks, sod, or other disturbed surfaces, by furnishing all necessary new materials without extra compensation.

All pipe shall be pressure tested as noted in this Section before complete backfilling of the pipe will be permitted.

All trenches and excavations shall be backfilled with approved natural soil unless shown otherwise on the plans.

After completing the backfill, the Contractor shall promptly remove all surplus material, rubbish, and all equipment, leaving the site and adjacent areas in a neat and presentable condition.

641.05 Basis of Payment.

(a) UNIT PRICE COVERAGE.

Items 641.05(a)2. and 3. shall be replaced with the following:

2. WATER MAIN.

The accepted quantity of water main laid or re-laid will be paid for at the contract unit price per linear foot {meter}, complete in place, which shall be payment in full for furnishing and installing pipe; including joint material, polyethylene sheathing when required, fittings for PVC and HDPE pipe, restrained joint when specified, making necessary pipe connections, pigging, flushing,

testing, excavating, backfilling, backfill material, and for all other materials, tools, labor, equipment and incidentals necessary to complete the work.

3. WATER SERVICE LINE.

The accepted quantity of water service line laid or re-laid will be paid for at the contract unit price per linear foot {meter}, complete in place, which shall be payment in full for furnishing and installing pipe; fittings for PVC pipe only, couplings, and joint material, excavating, backfilling, backfill material, and for all other materials, tools, labor, equipment and incidentals necessary to complete the work.

Items 641.05(a)5, 6, and 7. shall be replaced with the following:

5. FIRE AND FLUSH HYDRANT.

Fire and flush hydrants will be paid for at the contract unit price and include all labor, materials, equipment and incidentals necessary to furnish and install one hydrant. Fire hydrants shall also include 3 feet {1 m} of piping to connect to the water line. Additional piping to connect to depths greater than 3 feet {1 m} will be paid as fire hydrant extension.

6. FIRE AND FLUSH HYDRANT RESET.

Fire and flush hydrant resets will be paid for at the contract unit price which shall be payment for all labor, materials, equipment and incidentals necessary to reset one hydrant complete in place including excavation, backfilling, resetting the fire hydrant and all necessary connections, valves, and pipe. If any new fire hydrant extensions are required, they will be paid for under the appropriate pay item.

7. FIRE HYDRANT EXTENSIONS.

Fire hydrant extensions will be paid for at the contract unit price per linear foot {meter} which shall be payment for all labor, materials, equipment and incidentals necessary to extend one fire hydrant unit to the required water line grade.

(b) PAYMENT SHALL BE MADE UNDER ITEM NO.:

Subarticle 641.05(b) shall be replaced by the following:

(b) PAYMENT SHALL BE MADE UNDER ITEM NO.:

- 641-A ___ inch {mm} * Water ** Laid (***) - per linear foot {meter}
- 641-B ___ inch {mm} * Water ** Relaid (***) - per linear foot {meter}
- 641-C Ductile Iron Fittings - per pound {kg}
- 641-D Fire Hydrant - per each
- 641-E Fire Hydrant Reset - per each
- 641-F Fire Hydrant Extension - per linear foot {meter}
- 641-G Flush Hydrant - per each
- 641-H Flush Hydrant Reset - per each
- 641-I ___ inch {mm} Air Release Valve - per each
- 641-J ___ inch {mm} Gate Valve with Box - per each
- 641-K ___ inch {mm} Butterfly Valve with Box - per each
- 641-L Concrete for Water Mains (Thrust Blocks) - per cubic yard {cubic meter}
- 641-M ___ inch {mm} Retainer Gland - per each
- 641-N ___ inch {mm} x ___ inch {mm} Anchor Tee - per each
- 641-O ___ inch {mm} x ___ inch {mm} Tapping Valve and Sleeve - per each
- 641-P ___ inch {mm} Service Tap - per each
- 641-Q ___ inch {mm} Water Meter and Box Set - per each
- 641-R ___ inch {mm} Water Meter and Box Reset - per each
- 641-S Valve Box Reset - per each

* Show Type of Pipe: Ductile Iron (DI); PolyVinyl Chloride (PVC); Polyethylene (PE); High Density Polyethylene (HDPE); Crosslinked Polyethylene (PEX Type A); Copper.

** Designate One Type: Main or Service Line.

*** Designate Restrained Joint if Required.

SECTION 863

WATER PIPE, FIRE HYDRANTS, VALVES, AND APPURTENANCES

863.01 Ductile Iron Water Pipe.

Ductile Iron pipe shall meet the requirements of AWWA C151 with a minimum working pressure of 150 psi {1030 kPa}. The pipe shall have an inner cement mortar lining meeting AWWA C104 and an outer bituminous coating. The push-on joints shall meet the requirements of AWWA C111. Restrained joints shall meet the requirements of AWWA C110. Lock joint pipe shall meet the requirements of AWWA C151. The pipe length shall be a minimum of 18 feet {5.5 m}.

863.02 Ductile Iron Fittings.

Ductile Iron fittings shall meet the requirements of AWWA C110, AWWA C153, or AWWA C151 when approved by the Engineer. Fittings shall have an inner cement mortar lining meeting AWWA C104 and an outer bituminous coating. Fittings shall have a minimum pressure rating equal to the adjoining pipe installed. For fittings sizes 4 inch {100 mm} through 12 inch {300 mm}, the minimum pressure rating shall be 250 psi {1720 kPa}.

863.03 Copper Water Pipe.

Pipe and fittings shall meet the requirements of ASTM B88 Type K.

863.04 Poly (Vinyl Chloride) (PVC) Plastic Pipe.

Pipe sizes 4 inch {100 mm} to 12 inch {300 mm} shall meet the requirements of AWWA C900 Class 235, DR 18 or heavier. Pipe sizes 14 inch {350 mm} to 48 inch {1200 mm} shall meet the requirements of AWWA C905 Pressure Class 235, DR 18 or heavier. Pipe and fittings sizes smaller than 4 inch {100 mm} shall meet the requirements of PVC 1120, PVC 1220, or PVC 2120 with a minimum cell classification 12454-B for ASTM D2241, SDR 26 or heavier or ASTM 1785 Schedule 40, 80, or 120.

Joints and gasket material shall be as recommended by the pipe manufacturer. Solvent welding of field joints shall only be allowed for pipes 1.5 inches {38 mm} in diameter and smaller.

863.05 Polyethylene (PE) Tubing.

Pipe and fittings 2 inches {50 mm} and smaller shall be made of PE3408 meeting the requirements of ASTM D 2239, minimum SDR 7, ASTM D3350 and AWWA C901.

863.06 High Density Polyethylene(HDPE) Pipe.

HDPE pipe and bends shall meet the requirements of ASTM D1248, ASTM D3350(PE 3408), and ASTM F714. The HDPE pipe shall have a minimum wall thickness determined by the pressure rating required for use.

863.07 Cross-Linked Polyethylene (PEX Type A) Pipe.

Pipe 2 inches {50 mm} and smaller shall meet the requirements of AWWA C 904, Standard Dimension Ratio (SDR) 9, and standard Copper Tube Sizes (CTS). Fittings shall meet the requirements of AWWA C800 and for brass compression sleeve fittings. The pipe shall only be used below ground.

863.08 Gate Valve.

Gate valves shall meet the requirements of AWWA C509. Gate valves shall have o-ring seals. Gate valves shall have a non-rising stem that opens counterclockwise with a 2 inch {50 mm} square nut. Gate valves shall have mechanical joints meeting the requirements of AWWA C-111. The disc shall be SBR coated and the valve body shall be fusion bonded epoxy inside and out. Valves shall be furnished complete with necessary gaskets, bolts, and nuts as needed for mechanical joint ends. Gate valves shall be selected from the Utilities' approved material/manufacturer list.

863.09 Butterfly Valve.

Butterfly valves shall be rubber seated and meet the requirements of AWWA C504. The valve body shall meet the requirements of ASTM A126, Class B or ASTM A48, Class 40. Butterfly valves shall open counterclockwise with a 2 inch {50 mm} square nut. Butterfly valves shall have mechanical joints meeting the requirements of AWWA C-111. The disc shall meet the requirements of ASTM A536 or ASTM A48, Class 40. The rubber mating seat shall be stainless steel. All butterfly valves shall be provided with o-ring seals, nonadjustable stuffing boxes and shall be self-sealing or self-adjusting to allow for

replacing without removing the valve or the valve shaft. Butterfly valves shall be selected from the Utilities' approved material/manufacturer list.

863.10 Valve Boxes and Stem Extensions.

Valve boxes shall be cast iron and provided with all valves that are installed vertically. Valve boxes shall have a minimum diameter of 5 1/4 inches {130 mm}. Box covers shall be marked "water". Valve boxes shall be selected from the Utilities' approved material/manufacturer list. Valve stem extensions shall be provided with all valves that are greater than 3 feet {900 mm} below the adjacent ground surface. The extension stem shall be of the same size as the valve stem and shall be provided with a stem guide.

863.11 Tapping Valve & Sleeve.

Tapping valves shall meet the requirements for gate valves as described in section 863.07. Tapping sleeves shall be ductile iron, cement mortar lined meeting the requirements of AWWA C104, and have a bituminous exterior coat.

863.12 Air Release Valve.

Air release valves shall be as detailed by project plans and specifications.

863.13 Corporation Stop and Curb Stop.

Corporation stops shall meet the requirements of AWWA C800. Curb stops shall have full port openings. Corporation stops and curb stops shall have compression type connections and shall be selected from the Utilities' approved material/manufacturer list.

863.14 Fire Hydrant.

Fire hydrants shall meet the requirements of AWWA C502. Fire hydrant shall have a minimum working pressure of 175 psig {1200 kPa} and a minimum test pressure of 300 psig {2070 kPa}. Fire hydrants shall have two each 2.5 inch {63 mm} nozzles and one each 4.5 inch {114 mm} pumper nozzle. Fire hydrants shall have a 1.5 inch pentagon, one-piece operating nut that opens left. The fire hydrant main valve shall close with pressure. Fire hydrants shall have a 6 inch {150 mm} mechanical joint inlet. All operating parts, including the drain ring, operating nut, hold-down nut, upper valve plate, seat ring, drain lever, and nozzles shall be made of bronze. The bonnet assembly shall provide for an oil or grease reservoir and lubricating system that lubricants all stem threads and bearing surfaces each time the hydrant is operated. The reservoir shall be completely sealed from the waterway and all external contaminants by two each o-ring stem seals. Fire hydrants shall be factory pre-filled with a lubricant suitable for a working temperature range of -60 °F {-51.4 °C} to +150 °F {65.6 °C}. Fire hydrant shall be painted and seal coated as required by the project plans and specifications.

863.15 Flush Hydrant.

Flush Hydrants shall be the type shown on the plans or designated by the Engineer.