ROGERS WATER UTILITIES
ROGERS, ARKANSAS

SPECIFICATIONS FOR AUGER JACK & BORE FOR WATER MAINS, SANITARY SEWER MAINS/SERVICES AND FORCE MAINS AUGUST 2006

1. **SCOPE**

This specification governs the jack and bore operation for the installation of casing pipe for water mains, sanitary sewer mains, sanitary sewer services and force mains using the auger bore method. The directional bore operation for the installation of water mains, sanitary sewer mains and force mains is not allowed by RWU.

2. **MATERIALS**

a. Casing spacers and end seals shall conform to Section 04-01 Casing Spacers of the RWU specification.

b. Casing pipe shall conform to Section 04-02 Steel Casing of the RWU specification.

c. Pumpable flowable fill shall conform to Section 04-06 Flowable Fill of the RWU specification.

d. Grout (Class D) shall conform to Section 04-07 Concrete of the RWU specification.

3. **PERMITS**

All work within the state highway right-of-way and/or the railroad right-of-way shall conform to the specifications and requirements of the Arkansas Highway and Transportation Department (AHTD) and/or Arkansas Missouri Railroad (AMR). All work within City of Rogers right-of-way and/or Benton County right-of-way shall conform to the specifications and requirements of the Rogers Water Utilities. The Contractor shall keep a copy of the required permit at the job site and comply with all the terms and conditions of said permit.

4. **GENERAL**

a. The depths and locations of bore and receiving pits (working pits) shall be established by the Contractor in accordance with the horizontal alignment and grade as shown on the project construction plans.

b. The working pits shall adhere to OSHA requirements. Barricades shall be furnished around working pits to safeguard traffic and pedestrians.

c. All discharge from dewatering of the working pits shall be directed into approved receiving basins in accordance with all applicable regulatory requirements.

d. The working pits shall be in locations that in no way interfere with the operation of highways, streets, driveways, railroads or other facilities. Working pits shall not weaken or damage any embankment, utility or structure.

e. The use of water or other fluids in connection with the boring operation will be permitted only to the extent to lubricate cuttings. Water jetting will not be permitted.

f. The trimming of casing spacers for the carrier pipe is not allowed to achieve horizontal alignment or grade in the casing.

5. TOLERANCES

The casing pipe shall be straight (end to end) and installed to horizontal alignment and grade as shown on the project construction plans. Should the misalignment of the casing pipe preclude the installation of a water main and/or sanitary sewer main to the tolerances specified, the Contractor shall perform corrective measures in accordance with Item 7 of this specification.

6. CONSTRUCTION

a. The auger bore/jack equipment shall be located at the low or downstream end, if possible.

b. The casing pipe shall be installed (jacked) into the borehole simultaneously with the auger head. The auger head shall be of sufficient diameter within the casing pipe to convey the excavation material to the bore pit.

c. Excavated material shall be removed from the bore pit and disposed of properly.

d. The ends of each casing pipe section (joint) shall have one beveled end/one plain end and shall be full penetration butt welded on the outside of the casing pipe in accordance with the applicable portions of AWWA C206 for field welded water pipe joints. The welding of the casing pipe shall be performed on the rails the of auger bore/jack equipment.

e. If the void (clear) space between the casing pipe and the borehole is 2 inches or greater, the void (clear) space shall be completely filled by pressure grouting (Class D) for the entire length of installation. The wetting of said void (clear) with water is required prior to performing the pressure grout operation.

f. After the completion of the borehole and the casing pipe installation, the Engineer shall check the two ends of the casing pipe that are located within the bore and receiving pit for horizontal alignment and grade in accordance with Item 5 of this specification. The results of the horizontal alignment and grade checks shall be presented to RWU personnel for review and approval.

g. After the horizontal alignment and grade check of the ends of the casing pipe, the casing pipe shall be Lamp Tested to determine the grade alignment (straight barrel) by the Engineer and RWU personnel. A "full moon" shall be visible through the casing pipe for grade alignment. The casing pipe alignment shall be regular and in one direction.

h. The Contractor shall clean the interior of the casing pipe and remove all excess excavated material.

i. The carrier pipe shall be installed within the casing pipe using the number and size of casing spacer(s) as specified and the end seals. The carrier pipe shall be installed from the bore pit end of the casing pipe.

j. After completion of the bore/casing pipe installation, water main and/or sanitary sewer main installation and the backfill operation, the Contractor shall restore the profile of the right-of-way and/or surface to its original condition.

7. REJECTION OF BOREHOLE/CASING PIPE

In the event that an obstruction is encountered during the bore or a borehole/casing pipe is misalignment, the casing pipe is to be removed from the borehole and the borehole shall be filled with pumpable flowable fill at a sufficient pressure to fill all voids. The cost of the pumpable flowable fill, removal of casing pipe and re-bore/re-installing the casing pipe is incidental to the cost of the project.

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