

07-03

**ROGERS WATER UTILITIES
ROGERS, ARKANSAS**

**SPECIFICATIONS FOR
PIPE EMBEDMENT
REVISED NOVEMBER 2006**

1. **SCOPE**

This specification governs the pipe embedment for water mains, water services, sanitary sewer mains, sanitary sewer services and force mains, unless otherwise noted on the project construction plans.

2. **MATERIALS**

Pipe bedding material shall conform to Section 04-03 Pipe Bedding Material of the RWU specification.

3. **GENERAL**

- a. The granular pipe bedding material shall be either AHTD Class 7 granular pipe bedding material or aggregate size 67 (ASTM D448) granular pipe bedding material as specified in Section 04-03 Pipe Bedding Material of the RWU specification.
- b. The trench depth for all water mains, water services, sanitary sewer mains, sanitary sewer services and force mains shall be excavated to at least 4 inches below the pipe grade line as shown on the project construction plans.
- c. The trench shoring and/or bracing may be required by the geotechnical firm at the locations of the Quality Assurance tests. Any trench shoring and/or bracing cost associated with the Quality Assurance tests are the sole responsibility of the Contractor.
- d. The Contactor shall furnish and maintain street plates, barricades and other safety devices as required by local, state and federal permits/ordinances around open excavations to safeguard traffic and pedestrians. The temporary suspension of work does not relieve the Contactor from the responsibility for the above requirements.
- e. Safety on the construction project is the sole responsibility of the Contractor.

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4. PIPE EMBEDMENT

- a. The trench bottom shall be free of water, muck and debris. If water is present in the trench, the Contractor shall perform de-watering operation as specified in Section 07-01 Excavation/Trenching of the RWU specification.
- b. The granular pipe bedding material placement shall be a depth of 4 inches from the trench bottom to the bottom of the pipe, extend up the sides of the pipe between the pipe and the trench wall and to a depth of 6 inches above the pipe as shown on the RWU standard details.
- c. All excavation/trenching below the established grade line shown on the project construction plans such as over-excavation and bore/receiving pits (working pits) shall be backfilled with granular pipe bedding material to 6 inches above the pipe.
- d. The placing of granular pipe bedding material shall be performed in such a manner, which will assure no separation and/or change in the uniform gradation.
- f. The initial 4 inches of granular pipe bedding material shall be placed prior to the installation of the pipe. The use of pipe support blocks or cribbing material is not allowed to support the pipe and/or fitting before the placement of initial granular pipe bedding material.
- g. The initial 4 inches of granular pipe bedding material shall support the full length of the pipe with full bearing on the bottom segment of the pipe. Holes shall be excavated in the initial granular pipe bedding material to accommodate the pipe bell and/or fitting.
- h. The Class 7 granular pipe bedding material shall be compacted by mechanical means. Aggregate size 67 (ASTM D448) bedding material has no compaction requirements.
- i. Jetting or flooding shall not be allowed for the consolidation or compaction of Class 7 granular pipe bedding material.

5. COMPACTION

- a. **COMPACTION REQUIREMENTS:** The Class 7 granular pipe bedding material shall be placed in lifts or layers not to exceed 6 inches loose measure and properly compacted, tested, and approved before placing subsequent lifts. The granular backfill material shall be compacted to a minimum of 95% of the maximum dry density determined by the modified proctor (ASTM D1557-02).

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The minimum frequency of the compaction tests shall be one test per 6 inch lift per 400 linear feet of completed pipe bedding or as directed by the Engineer.

- b. **COMPACTION TESTS:** The Contractor is responsible for Quality Assurance testing during material production and the placement operations to produce work that conforms to the RWU specification requirements.

Material or workmanship that fails to meet the RWU specification requirements, as determined by the Quality Assurance tests, shall be either replaced or reworked to meet the RWU specification requirements. The cost of the Quality Assurance tests is the sole responsibility of the Contractor.

Copies of the compaction reports shall be distributed to the Engineer and RWU. Copies of the compaction reports shall also be distributed to the City of Rogers if test results are performed under existing/proposed public streets.