

SECTION 03 34 00
LOW DENSITY CONCRETE (LDC)

PART 1: GENERAL

1.01 DESCRIPTION

- A. All Work included in this section shall be performed in accordance with the following paragraphs, the General Requirements set forth in Division 1 of these Specifications, and the provisions of the other Contract Documents.
- B. Work covered under this section includes providing all materials, equipment, and labor to furnish and install LDC for use in abandoning pipes and gateway structures.
- C. Related sections
 - 1. Section 33 40 00 Storm Drainage Utilities
 - 2. Section 03 31 00 Concrete Forming
 - 3. Section 03 20 00 Concrete Reinforcing
 - 4. Section 03 33 00 Cast-in-Place Concrete

1.02 REFERENCES

- A. Current editions of the following standards and publications.
 - 1. ASTM C150, Standard Specification for Portland Cement
 - 2. ACI 347, Guide to Formwork for Concrete
 - 3. ACI SP-4, Formwork for Concrete
 - 4. Minnesota Department of Transportation (Mn/DOT) Standard Specification for Road and Bridge

1.03 SUBMITTALS

- A. Alternate mix design for LDC not specified in this section; submit the following information:
 - 1. Source of materials.
 - 2. Specific gravities, material proportions, and any other parameters used in the mix design process.
 - 3. Type and proposed dosage of admixtures.
 - 4. Target flow and air content.
 - 5. Test data indicating compressive strength at 28 days.

6. Wet Density

PART 2: PRODUCTS

2.01 MATERIALS

- A. Cement: Portland Cement ASTM Designation C150, Type I.
- B. Foam Liquid Concentrate: Concentrate per ASTM C 869 when tested in accordance with ASTM C 796
- C. Fly Ash: Mn/DOT Section 3115
- D. Air-entraining admixture: Powder or liquid form able to meet the air content requirements of the mix design.
- E. Water: Mn/DOT Section 3096

2.02 EQUIPMENT

- A. Mixer requirements: Mn/DOT Section 2461.4.
- B. Empty mixer drum prior to initial batch to ensure that no additional cement fines are incorporated into the mix.

2.03 MIXES

- A. Mix design requirements:
 - 1. Compressive Strength at 28 days: ≥ 50 psi
 - 2. Wet Density: $25 \text{ pcf} \leq \text{Mix} \leq 30 \text{ pcf}$

PART 3: EXECUTION

3.01 INSTALLATION

- A. Batching of Concrete Materials: Mn/DOT 2461.4 B.
- B. Transporting LDC: Mn/DOT 2461 D.
- C. Placing LDC: Mn/DOT 2401.3 C.
 - 1. Limits: As shown on Drawings
 - 2. Maximum lift height: 6 feet
 - 3. Start at downstream end, fill to upstream end
 - 4. Provide air-vent on upstream bulkhead

END OF SECTION 03341

