SP-150495A
(New)

SPECIAL PROVISIONS
FOR
GROUT FOR PARTIALLY GROUTED REVETMENT

Decatur County
IMX-035-1(158)6--02-27

Effective Date
February 19, 2019

THE STANDARD SPECIFICATIONS, SERIES 2015, ARE AMENDED BY THE FOLLOWING MODIFICATIONS AND ADDITIONS. THESE ARE SPECIAL PROVISIONS AND THEY SHALL PREVAIL OVER THOSE PUBLISHED IN THE STANDARD SPECIFICATIONS.

150495a.01 DESCRIPTION.

A. This work consists of constructing grout for partially grouted revetment.

B. Furnish and place revetment as shown on the plans. The voids between the revetment will be partially filled with grout by use of hose or tremie. Upon completion, approximately 50% of the void space shall be filled with grout and 50% of the void space shall remain open.

150495A.02 MATERIALS.

A. Grout shall consist of a mixture of Portland cement, fine aggregate, coarse aggregate, water and air entrainment proportioned based on Table 150495a.02-1 below and mixed as to provide a pumpable slurry. Pozzolan and grout fluidizer may be used at the option of the Contractor.

Table 150495a.02-1: Mix Design for Grout (one cubic yard)

Material	Quantity
Portland Cement	740 to 760 lbs.
Fine Aggregate (Sand)	1180 to 1200 lbs.
Coarse Aggregate	1180 to 1200 lbs.
Water	420 to 450 lbs.
Air Entrainment	8 to 12%

B. Materials for grout shall meet the requirements of the following Sections of the Standard Specifications:

Item	Section or Article
Portland Cement	4101
Fine Aggregate (Sand)	4134
Coarse Aggregate	4115.05
Water	4102
Air Entrainment	4103

C. Supply a mix design to the Engineer that will meet the above requirements. Submit samples of the aggregates and cement intended for use to the Engineer before the work begins. After the mix has been designated, it shall not be changed without approval of the Engineer.

150495A.03 CONSTRUCTION.

A. Equipment.
Proportioning and mixing equipment shall meet requirements of Articles 2001.20 and 2001.21 of the Standard Specifications. Sufficient mixing capacity of mixers shall be provided to permit the intended pour to be placed without interruption. All oil or other rust inhibitors shall be removed from the mixing drums, stirring mechanisms, and other portions of the equipment in contact with the grout before the mixers are used.

B. Proportioning and Mixing Grout.
All materials shall be accurately measured by volume or weight as they are fed into the mixer. The quantity of water shall be such as to produce a grout having a pumpable consistency. Time of mixing shall be not less than 1 minute. If agitated continuously, the grout may be held in the mixer or agitator for a period not exceeding 2 1/2 hours in temperatures below 70°F and for a period not exceeding 2 hours at higher temperatures. If there is a lapse in a pumping operation, the grout shall be recirculated through the pump or through the mixer drum (or agitator) and pump.

C. Grout Placement.

1. Place grout in conformance with Article 2507.03, E, 1 of the Standard Specifications except Article 2507.03, E, 1.d and Article 2507.03, E, 1.e of the Standard Specifications.

2. Dispense grout from a flexible hose or tremie attached to a boom on a concrete pump truck or grout pump. Hose diameter shall be 2 or 3 inches. Use maximum flow rate of 10 gallons per minute. Refer to Table 150495a.03-1 below for quantity of grout as a function of revetment size.

Table 150495a.03-1: Grouting Material Quantity

Revetment Class	Quantity of Grout (ft^3/yd^2)
Class D and E	2.0 to 2.2
Class C	2.7 to 3.2
Class B	3.4 to 4.1

3. Approximately 50% of the void space in the revetment shall be retained after grout placement. The upper half of the revetment layer shall have approximately two thirds of the voids filled with grout and the lower half of the revetment layer shall have approximately one third of the voids filled with grout.

D. Test section.
Before placing grout on entire project complete a test section to be observed by the Engineer. Test section to be same thickness as project section and test section shall have horizontal dimensions of 10 feet by 10 feet. Engineer will visually observe the application of the grout and

inspect the grout in the test section. Upon approval by the Engineer the Contractor may proceed with project grout placement using same method as was done for the test section.

E. Curing and Protection.
Cure and protect grout in conformance with Article 2507.03, E, 2 of the Standard Specifications.

F. Limitations of Operations.
Limit Operations in conformance with Article 2507.03, E, 3 of the Standard Specifications.

G. Inspecting and Testing Fresh Grout.

1. Inspect and test fresh grout in conformance with Article 2507.03, E, 4 of the Standard Specifications.

2. Determine slump of grout using standard American slump test (ASTM C 143 “Standard Test Method for Slump of Hydraulic-Cement Concrete”). Slump results to be within range of 6.5 to 7.5 inches vertical slump. Perform the slump test twice per day or whenever new materials are brought to the project.

150495a.04 METHOD OF MEASUREMENT.
The quantities of Grout for Partially Grouted Concrete will be measured in accordance with Article 2507.04 of the Standard Specifications under separate bid items.

150495a.05 BASIS OF PAYMENT.
The payment for Grout for Partially Grouted Concrete will be measured in accordance with Article 2507.05 of the Standard Specifications under separate bid items.