SP- 152003
(New)

SPECIAL PROVISIONS
FOR
FLY ASH TREATED SUBGRADE FOR SOIL STABILIZATION

Cerro Gordo County
STP-S-C017(71)--5E-17

Effective Date
February 16, 2016

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.

152003.01 DESCRIPTION.

A. Section Includes.
Fly ash treated subgrade for soil stabilization shall consist of soil from the subgrade combined with fly ash. These materials shall be mixed, shaped, and compacted in accordance with the plans and these specifications.

B. Submittals.

1. Job Mix Formula, moisture content of soil prior to fly ash placement, and in-place density tests of the fly ash treated soil.

2. Material Certifications for fly ash.

152003.02 MATERIALS.

A. Fly Ash.

1. Meet the requirements of Article 4108.01 of the Standard Specification. Fly ash shall be a Class C containing a minimum of 22% CaO. The source of fly ash shall be identified and approved in advance of stabilization operations. The source of the fly ash shall be identified and approved in advance of stabilization operations to allow for Standard Proctor test to be completed by the Contractor prior to commencing work.

2. Fly ash shall be stored and handled in closed weatherproof containers until immediately before distribution. Fly ash exposed to moisture prior to mixing with soils shall be discarded.

B. Water.
Meet the requirements of Section 4102 of the Standard Specifications.

152003.03 CONSTRUCTION.

A. Equipment.

The contractor shall provide all equipment necessary for the construction of the fly ash treated subgrade such as: grading and scarifying equipment, a spreader for the fly ash, mixing or pulverizing equipment, sheepsfoot and pneumatic or vibrating rollers, sprinkling equipment and trucks. Equipment shall be in accordance with Section 2001 of the Standard Specifications.

B. Application of Fly Ash.

1. Prior to the application of the fly ash, a mix design test shall be completed to ensure the moisture of the soil is within tolerance to produce acceptable densities. Laboratory specimens shall be prepared from samples taken from the material in place and tested in accordance with Materials I.M. 309.

2. Fly ash treatment operations shall not commence while the atmospheric temperature is below 40°F within 24 hours, when it is foggy, rainy or when subgrade is frozen.

3. Fly ash shall be spread only on areas where the mixing and compaction operations can be completed within two hours. The amount of fly ash spread shall be the amount required to obtain the appropriate content by volume and depth as specified in the contract documents.

4. The fly ash shall be spread uniformly by approved equipment for handling, weighing and spreading. Fly ash shall be distributed in a manner that scattering by wind and fugitive dust will be minimal. Spread fly ash that has been displaced by construction traffic or other means shall be replaced or redistributed before mixing is started.

C. Mixing and Pulverizing.

1. The full depth of the treated subgrade shall be mixed uniformly with the pulvamixer. Fly ash shall not be left exposed for more than 30 minutes after application. Any water necessary shall be added through use of a pulvamixer equipped with a spray bar in the mixing drum capable of applying sufficient quantities of water to achieve the required moisture content of the soil-fly ash mixture. If the moisture content is too high, additional fly ash may be added to lower the moisture content.

2. The thickness of the fly ash treated subgrade shall be determined by depth checks taken randomly by the Contracting Authority. When the base thickness is deficient by more than 1/2 inch, the contractor shall correct such areas in a manner satisfactory to the Engineer at no additional cost to the Contracting Authority.

D. Compaction.

Compaction of the fly-ash soil mix shall begin immediately after mixing of the fly ash and be completed within two hours following initial placement of the fly ash. The field density of the compacted mixture shall be at least 95% of the maximum density. Field densities shall be checked by the contractor at a frequency of 1500 feet of a day's work. Acceptable test methods for in-place density are provided in Material I.M. 204, Appendix A.

E. Finishing.

After compaction of fly ash treated subgrade has been compacted, it shall be brought to the required lines and grades in accordance with the typical sections. The finished surfaces shall not vary by more than 1 inch when tested. Any variations in excess of this tolerance shall be corrected, at no additional cost to the Contracting Authority and in a manner satisfactory to the Engineer. The finished surface of the fly ash treated subgrade should be in a smooth condition free from rutting, bump or dips.

F. Maintenance.
The Contractor shall maintain the fly ash treated subgrade in good condition until the completion of the project. In the event of fly ash treated subgrade failure or damage during construction, remove the damaged portion of material or repair as necessary.

152003.04 METHOD OF MEASUREMENT.

A. Fly Ash Incorporation into Subgrade.
Square yards as shown in the contract documents.

B. Fly Ash Delivered to Site.
Measurement will be by weight tickets measuring the tonnage of Type C Fly Ash delivered to the site and incorporated into the subgrade.

152003.05 BASIS OF PAYMENT.

A. Fly Ash Incorporation into Subgrade.
The Contractor will be paid contract unit price per square yard of fly ash treated subgrade as measured above. This payment shall be full compensation for furnishing and placing all materials, water, preparation of subgrade and doing all work and testing necessary to complete the subbase in compliance with the contract documents.

B. Fly Ash Delivered to Site.
The Contractor will be paid contract unit price per ton of fly ash. This payment shall be full compensation for all labor, equipment and material necessary for furnishing and delivering fly ash to the project grade which is incorporated into the subgrade.