



STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION

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MEMO TO: Roadway Design Project Engineers  
Roadway Design Project Design Engineers

FROM: Glenn W. Mumford, PE  
State Roadway Design Engineer

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*Glenn W. Mumford*  
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DATE: March 26, 2015

SUBJECT: New Coal Combustion Material Placement Detail

In order to be in compliance with Senate Bill 729 and NCGS 130A-309.215, beginning with the May 19, 2015 letting the Department is allowing the use of coal combustion products in embankments as a substitution for conventional borrow material.

Through close coordination with the Construction Unit and the contracting industry it has been decided to allow this substitution on any TIP project which has a bid item for "Borrow Excavation" included in the contract. This would not include contract resurfacing projects with a borrow pay item.

For all Raleigh central let projects, the Contract Standards and Development Unit will be responsible for inclusion of the Project Special Provision to cover this allowed substitution, when appropriate. For all Division let projects, Division personnel are responsible for inclusion of the project special provision, when appropriate. The Roadway Design Project Design Engineer is responsible for requesting the required detail from the Special Details squad in the Contract Standards and Development Unit and including it in the "2 Series" sheets in the Roadway Plans.

If you have any questions regarding this new requirement, please contact Joel Howerton, PE, at 919-707-6950.

GWM/rag  
Attachments

cc: Rodger Rochelle, PE      Debbie Barbour, PE      Randy Garris, PE  
Ricky Greene, PE      John Pilipchuk, LG, PE      Ron Hancock, PE  
Division Engineers -



## **COAL COMBUSTION PRODUCTS IN EMBANKMENTS:**

(4-16-02) (Rev. 5-19-15)

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SP02 R70

### **Description**

This specification allows the Contractor an option, with the approval of the Engineer, to use coal combustion products (CCPs) in embankments as a substitute for conventional borrow material. The amount of CCPs allowed to be used for this project will be less than 80,000 tons total and less than 8,000 tons per acre.

### **Materials**

Supply coal combustion products from the Department list of potential suppliers maintained by the Value Management Unit. Site specific approval of CCP material will be required prior to beginning construction.

The following CCPs are unacceptable:

- (A) Frozen material,
- (B) Ash from boilers fired with both coal and petroleum coke, and
- (C) Material with a maximum dry unit weight of less than 65 pounds per cubic foot when tested in accordance with AASHTO T-99 Method A or C.

Collect and transport CCPs in a manner that will prevent nuisances and hazards to public health and safety. Moisture condition the CCPs as needed and transport in covered trucks to prevent dusting.

### **Preconstruction Requirements**

When CCPs are to be used as a substitute for earth borrow material, request written approval from the Engineer at least ninety (90) days in advance of the intent to use CCPs and include the following details using the NCDOT Form #CCP-2015-V1 in accordance with NCGS § 130A-309.215(b)(1):

- (A) Description, purpose and location of project.
- (B) Estimated start and completion dates of project.
- (C) Estimated volume of CCPs to be used on project with specific locations and construction details of the placement.
- (D) Toxicity Characteristic Leaching Procedure analysis from a representative sample of each different CCP source to be used in the project for, at minimum, all of the following constituents: arsenic, barium, cadmium, lead, chromium, mercury, selenium, and silver.
- (E) The names, address, and contact information for the generator of the CCPs.
- (F) Physical location of the project at which the CCPs were generated.

Submit the form to the Engineer and the State Value Management Engineer at [valuemanagement@ncdot.gov](mailto:valuemanagement@ncdot.gov) for review. The Engineer and the State Value Management Engineer will coordinate the requirements of NCGS § 130A-309.215(a)(1) and notify the

Contractor that all the necessary requirements have been met before the placement of structural fill using coal combustion products is allowed.

### **Construction Methods**

In accordance with the detail in the plans, place CCPs in the core of the embankment section with at least 4 feet of earth cover to the outside limits of the embankments or subgrade and at least 5 feet above the seasonal high ground-water table. CCPs used in embankments shall not be placed as follows:

- (A) Within 50 feet of any property boundary.
- (B) Within 300 horizontal feet of a private dwelling or well.
- (C) Within 50 horizontal feet of the top of the bank of a perennial stream or other surface water body.
- (D) Within a 100-year floodplain except as authorized under NCGS § 143-215.54A(b). A site located in a floodplain shall not restrict the flow of the 100-year floodplain or result in washout of solid waste so as to pose a hazard to human life, wildlife or land and water resources.
- (E) Within 50 horizontal feet of a wetland, unless, after consideration of the chemical and physical impact on the wetland, the United States Army Corps of Engineers issues a permit or waiver for the fill.

Construct embankments by placing CCPs in level uniform lifts with no more than a lift of 10 inches and compacted to at least a density of 95 percent as determined by test methods in AASHTO T-99, Determination of Maximum Dry Density and Optimum Moisture Content, Method A or C depending upon particle size of the product. Provide a moisture content at the time of compaction of within 4 percent of optimum but not greater than one percent above optimum as determined by AASHTO T-99, Method A or C.

Divert surface waters resulting from precipitation from the CCPs placement area during filling and construction activities. Construct embankments such that rainfall will not run directly off of the CCPs. Provide dust control to minimize airborne emissions. Construct fill in a manner that prevents water from accumulating and ponding and do not pump nor discharge waters from CCP's filling and construction areas.

### **Measurement and Payment**

*Borrow Excavation* will be measured by truck volume and paid in cubic yards in accordance with Article 230-5 of the *2012 Standard Specifications*.