

**Sand Hill Area Land Trust Mitigation Site
Permit Violation Remediation Plan
TIP R-210, US 1 Relocation
ORM ID 199300570
Moore County
February, 2010**

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REGULATORY
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The North Carolina Department of Transportation (NCDOT) has become aware of improvements to the old logging road that bisects the Sandhills Area Land Trust (SALT) mitigation site in Moore County. The property is located off Lakebay Road (SR 2023) southwest of Lobelia. This site was used as compensatory wetland mitigation to offset unavoidable wetland impacts associated with R-210, US 1 Relocation near Vass. The road improvements include the placement of earth fill material and/or aggregate, as well as culverts, in low lying areas of the road. The current actions were undertaken by the current property owner, with no prior knowledge by NCDOT, until the work was completed.

NCDOT holds a Conservation Easement, dated July, 1998, on this parcel, which specifically prohibits such activity. The purpose of this document is to provide detail to the actions proposed to bring the above mentioned compensatory wetland mitigation site into State and Federal Environmental Permit Compliance.

PROHIBITED ACTIVITY-ROAD IMPROVEMENTS

In December, 2009, NCDOT surveyed the extent of the fill material and culvert installation along the old logging road that bisects the project (see attached plan sheets). There were 5 distinct areas along the path where fill and/or aggregate were used to improve and armor the surface of the road. There were 5 plastic, circular culverts of various sizes that were installed in the washouts along the road, in order to pass surface water flow under the road. Also, fill material and/or aggregate was installed to a depth ranging from approximately 1"-2" in some areas, up to 12"-15" at the culvert locations. There were also 2 distinct rock stockpile locations immediately adjacent to the logging road in upland areas of the site.

PROPOSED REMEDIAL ACTION

Due to the saturation and standing surface water along a majority of the access road, NCDOT will take all precautions not to negatively impact the adjacent wetland areas. The current proposal is to remove the 5 new cross pipes (see attached plan sheets) that were installed along the access road, to prevent surface water from flowing under the road. In addition, unstable fill material, as well as fill material greater than 3 inches in depth will be removed, to the extent possible, and transported to an NCDOT approved stockpile area, approximately 2 miles from the mitigation property. All work proposed will be accomplished

utilizing excavation equipment and trucks operating from the high ground on the old logging road. The cross pipes will be removed in the dry, by utilizing impervious dikes (see Appendix A: Impervious Dike Provision) at the inlet of the culverts. All cross pipe removal will closely follow NCDOT's Best Management Practices for Construction and Maintenance Activities. The entire logging road will be scarified and stabilized with Seed, Mulch, and Matting, where appropriate. A native wetland seed mix will be utilized in wetland areas along the road. (See Appendix A: Native Grass Seeding and Mulching Provision)

Upon further review, it appears that several saplings are either recovering from the mowing operation or regenerating naturally, along the road. No initial tree planting is proposed immediately following grading operations. NCDOT will review the site in December, 2010 to determine if additional seedlings are needed to supplement volunteer saplings. Upon consultation with State and Federal Regulatory agencies, the Department will supplement tree planting, as needed, utilizing the following specifications.

Tree planting density will be 680 trees/acre (approx. 8 foot centers). The following bare root seedlings will be planted, as available: laurel oak, water oak, willow oak, swamp black gum, and bald cypress. These species are consistent with the planting plan for the restoration areas in the original mitigation plan, noting that the logging road was not originally planted. All tree planting will occur during the dormant season between the dates of January 1 and March 15.

In an effort to prevent future vehicular access along the old logging road following implementation of the remediation plan, NCDOT proposes to excavate a trench across the road in the upland section, as shown on the plan sheet and typical section. This area will also be stabilized with seed and mulch appropriately following construction.

Upon successful completion of the remedial work, the logging road will be monitored annually by visual observation for 5 years or until stabilized and approved by US Army Corps of Engineers. Each annual monitoring report will included a narrative, describing the condition of the logging road along with vegetation will be accompanied by photographs, including photographs of non-impacted sections of the road. The monitoring reports will be posted on the NCDOT website annually.

APPENDIX A

IMPERVIOUS DIKE:

Description

This work consists of furnishing, installing, maintaining, and removing an Impervious Dike for the purpose of diverting normal stream flow around the construction site. The Contractor shall construct an impervious dike in such a manner approved by the Engineer. The impervious dike shall not permit seepage of water into the construction site or contribute to siltation of the stream. The impervious dike shall be constructed of an acceptable material in the locations noted on the plans or as directed.

Materials

Acceptable materials shall include but not be limited to sheet piles, sandbags, and/or the placement of an acceptable size stone lined with polypropylene or other impervious fabric.

Earth material shall not be used to construct an impervious dike when it is in direct contact with the stream unless vegetation can be established before contact with the stream takes place.

Measurement and Payment

Impervious Dike will not be measured and paid for under this article. Diversion Pumping will be measured and paid for as provided elsewhere in this contract. This payment shall be considered full compensation for all work including but not limited to furnishing materials, construction, maintenance, and removal of the impervious dike.

NATIVE GRASS SEEDING AND MULCHING:

Bermuda

Native Grass Seeding and Mulching shall be performed on the disturbed areas of wetlands and riparian areas, and adjacent to Stream Relocation construction within a 50 foot zone on both sides of the stream or depression, measured from top of stream bank or center of depression. The stream bank of the stream relocation shall be seeded by a method that does not alter the typical cross section of the stream bank. Native Grass Seeding and Mulching shall also be performed in the permanent soil reinforcement mat section of performed scour holes, and in other areas as directed.

The kinds of seed and fertilizer, and the rates of application of seed, fertilizer, and limestone, shall be as stated below. During periods of overlapping dates, the kind of seed to be used shall be determined. All rates are in pounds per acre.

March 1 - August 31

- 25# Bermudagrass (hulled)
- 6# Indiangrass
- 8# Little Bluestem
- 4# Switchgrass
- 25# Browntop Millet
- 500# Fertilizer
- 4000# Limestone

September 1 - February 28

- 35# Bermudagrass (unhulled)
- 6# Indiangrass
- 8# Little Bluestem
- 4# Switchgrass
- 35# Rye Grain
- 500# Fertilizer
- 4000# Limestone

Fertilizer shall be 10-20-20 analysis. A different analysis of fertilizer may be used provided the 1-2-2 ratio is maintained and the rate of application adjusted to provide the same amount of plant food as a 10-20-20 analysis and as directed.

Native Grass Seeding and Mulching shall be performed in accordance with Section 1660 of the Standard Specifications and vegetative cover sufficient to restrain erosion shall be installed immediately following grade establishment.

Temporary Seeding

Fertilizer shall be the same analysis as specified for Seeding and Mulching and applied at the rate of 400 pounds and seeded at the rate of 50 pounds per acre. German Millet or

Brown-top Millet shall be used in summer months and rye grain during the remainder of the year. The Engineer will determine the exact dates for using each kind of seed.

Fertilizer Topdressing

Fertilizer used for topdressing shall be 16-8-8 grade and shall be applied at the rate of 500 pounds per acre. A different analysis of fertilizer may be used provided the 2-1-1 ratio is maintained and the rate of application adjusted to provide the same amount of plant food as 16-8-8 analysis and as directed.