



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

JAMES B. HUNT JR.
GOVERNOR

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DAVID MCCOY
SECRETARY

December 2, 1999

Regulatory Branch
U.S. Army Corps of Engineers
Wilmington Field Office
P.O. Box 1890
Wilmington, NC 28402-1890

Attention: Mr. Dave Timpy

Dear Sir:

Subject: Mitigation plan for impacts resulting from impacts due to replacement of Bridge No. 11 over Moore's Creek on NC 11/NC 53, Pender County, TIP No. B-3011.

As was discussed in the phone conversation between David Franklin of the U.S. Army Corps of Engineers and Charles Bruton of NCDOT on December 2, 1999, a mitigation plan has been prepared for Bridge No. 11 over Moore's Creek on NC 11/NC 53, Pender County. This plan outlines key points concerning temporary impacts resulting from project construction for TIP No. B-3011.

The Department asks that this mitigation plan be used to satisfy Special Condition A. requiring a mitigation plan for the Nationwide Permit No. 23 (Approved Categorical Exclusions) in your letter dated November 24, 1999. If the attached mitigation plan is acceptable, a modification for the permit (Action ID No. 199901657) would not be necessary.

Please find attached the planting details describing planting methods and what species will be planted after the temporary causeways are removed. Thanks again for your continued support and cooperation. If you have any questions or concerns, please feel free to contact me at your convince.

Sincerely,

A handwritten signature in cursive script that reads "W. D. Gilmore".

for William D. Gilmore, P.E., Manager
Project Development and Environmental Analysis Branch

mcr/WDG

Wetland Mitigation Plan
Bridge No. 11 over Moore's Creek on NC 11/NC 53
TIP No. B-3011, Pender County

Existing Conditions

Present site conditions include a canopy that is dominated by bald cypress (*Taxodium distichum*), swamp tupelo (*Nyssa biflora*), red maple (*Acer rubrum*), willow oak (*Quercus phellos*), and swamp chestnut oak (*Quercus michauxii*). Spanish moss (*Tillandsia useneoides*) is present as an epiphyte of canopy trees. Snags are numerous throughout this community. A shrub layer is fairly well developed and dominated by young swamp tupelo and red maple, with greenbriers (*Smilax* spp.) present. The herb layer is patchy, with cane (*Arundinaria gigantea*) and netted chain-fern (*Woodwardia areolata*) prevalent. Submerged aquatics, including pondweeds (*Potamogeton* spp.) are present within the shallow open waters at the bridge (see Figures 1 and 2).

Summary of Impacts

The project will result in 0.33 ac of permanent fill in wetlands, 1.48 ac of temporary fill and 0.31 ac of mechanized clearing to construct the temporary onsite detour. No stream relocation or channel change will be involved. Two rows of driven piles on 53.0 ft centers, will be used for support for the new bridge. In order to set the piles, a temporary causeway will be required. The causeway will consist of clean and washed Rip Rap with 1.5:1 slopes, approximately 15 ft thick at the surface and 30 ft thick near the base with an estimated volume is 480 yd³. After the project is completed the causeway will be removed from the creek to the extent practicable without disturbing the creek bottom. The area will then be graded to its original elevation and replanted with vegetation at 320 stems per acre (see Planting Details).

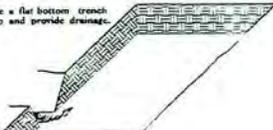
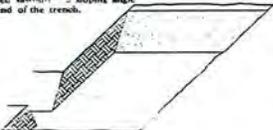
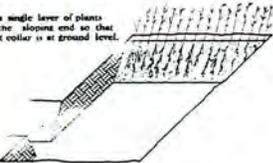
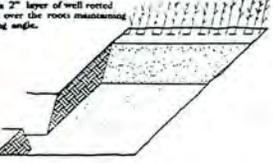
Mitigation Parameters

- Pictorially measured, photos will be provided at annual monitoring meeting.
At the end of the third year, NCDOT, regulatory and resource agencies will meet on site and determine 75% survivability. If wetland areas temporarily impacted by this project have not re-attained wetland jurisdictional status, NCDOT and the U.S. Army Corps of Engineers shall determine whether compensatory wetland mitigation will be required.
- All temporary fill will be place on a geo-textile fabric as conditioned by the CAMA permit.
- Temporary causeway will be removed within thirty (30) days following completion of construction.
- Plants will come from a North Carolina seed source depending on selected construction contracting firm (see Planting Details).
- Stems will be planted 320 stems per acre.
- Replanting will occur between December 15, 2000 – March 15, 2001.

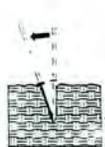
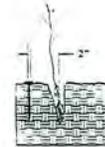
PLANTING DETAILS

SEEDLING / LINER BAREROOT PLANTING DETAIL

HEALING IN

1. Locate a healing-in site in a shady, well protected area.
2. Excavate a flat bottom trench 12" deep and provide drainage.
 
3. Backfill the trench with 2" well rotted sawdust. Place a 2" layer of well rotted sawdust at sloping angle at one end of the trench.
 
4. Place a single layer of plants against the sloping end so that the root collar is at ground level.
 
5. Place a 2" layer of well rotted sawdust over the roots maintaining a sloping angle.
 
6. Repeat layers of plants and sawdust as necessary and water thoroughly.

DIBBLE PLANTING METHOD USING THE KBC PLANTING BAR

1. Insert planting bar as shown, and pull handle toward planter.
 
2. Remove planting bar and place seedling at correct depth.
 
3. Insert planting bar 2" toward planter from seedling.
 
4. Pull handle of bar toward planter, firming soil at bottom.
 
5. Push handle forward firming soil at top.
 
6. Leave compaction hole open. Water thoroughly.
 

PLANTING NOTES:

PLANTING BAG
During planting, seedlings shall be kept in a moist canvas bag or similar container to prevent the root-system from drying.



KBC PLANTING BAR
Planting bar shall have a blade with a triangular cross section, and shall be 12" long, 4" wide and 1" thick at center.



ROOT PRUNING
If seedlings shall be root pruned, if necessary, so that no roots extend more than 10 inches (10") below the root collar.

REFORESTATION

TREE REFORESTATION SHALL BE PLANTED 6' TO 10' ON CENTER, RANDOM SPACING, AVERAGING 8' ON CENTER, APPROXIMATELY 680 PLANTS PER ACRE.

REFORESTATION

MIXTURE, TYPE, SIZE, AND FURNISH SHALL CONFORM TO THE FOLLOWING:

TAXODIUM DISTHICHUM	BALDCYPRESS	12" - 18", SEEDLING BR
NYSSA SYLVATICA var. BIFLORA	SWAMP TUPELO	12" - 18", SEEDLING BR
QUERCUS PHELLOS	WILLOW OAK	12" - 18", SEEDLING BR
QUERCUS MICHAUXII	SWAMP CHESTNUT OAK	12" - 18", SEEDLING BR

SEE PLAN SHEETS FOR AREAS TO BE PLANTED

REFORESTATION DETAIL SHEET

N.C.D.O.T. - ROADSIDE ENVIRONMENTAL UNIT



Figure 1. Looking east



Figure 2. Looking west

In closing, we ask that you remove the special condition requiring a mitigation plan for the temporary detour area. The Department feels that the same goals will be accomplished through the incorporation of monitoring activities at the project site.

Thanks again for your continued support and cooperation. If you have any questions or concerns, please feel free to contact me at your convience.

Sincerely,


for

William D. Gilmore, P.E., Manager

Project Development and Environmental Analysis Branch

mcr/WDG

cc: B-3011 file
V. Charles Bruton, Ph.D., Assistant Branch Manager
Phil Harris, P.E., Permits Tracking and Mitigation Coordinator
Bruce Ellis, CLM, Interim Natural Systems Unit Head
Chris Rivenbark, Natural Systems Specialist