Wetland Restoration Plan
Bridge No. 46 over the South River on NC 242
TIP No. B-3152, Cumberland/Sampson Counties

Existing Conditions

The canopy of the Coastal Plain Levee-Blackwater Subtype wetland is dominated by wetland hardwoods such as mature bald cypress (*Taxodium distichum*), sweet gum (*Liquidambar styraciflua*), red maple (*Acer rubrum*), green ash (*Fraxinus pennsylvanica*), willow oak (*Quercus phellos*), and loblolly pine (*Pinus taeda*). Dominant sapling species include ironwood (*Carpinus caroliniana*), red maple, and sweet gum. The shrub, vine, and herbaceous layers range from sparse to dense consisting of elliott blueberry (*Vaccinium elliotti*), pepper bush (*Clethera alnifolia*), common greenbrier (*Smilax rotundifolia*), poison ivy (*Toxicodendron radicans*), yellow jessamine (*Gelsemium sempervirens*), and Virginia creeper (*Parthenocissus quinquefolia*).

Summary of Impacts and Mitigation

Wetland impacts for the proposed project include 0.53 ac of permanent fill and 0.22 ac of mechanized clearing. No stream relocation or channel change will be involved. Driven piles, spaced on 6.75 ft centers, will be used for support for the new bridge. In order to set the piles, temporary Work Bridge will be used.

Fill will be removed from as much of the old roadbed as is available (0.25 acres). The fill will be removed down to the adjacent wetland elevation. Compacted areas of the restoration site will be sub-soiled (ripped) and re-vegetated using the following bottomland hardwood species: Bald Cypress *(Taxodium distichum),* Swamp *Blackgum (Nyssa biflora),* Green Ash *(Fraxinus pennsylvanica),* Overcup Oak *(Quercus lyrata),* and Willow Oak *(Quercus phellos)* (see Reforestation Detail Sheet).

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.
- Plants will come from a North Carolina seed source depending on selected construction contracting firm and availability (see Planting Details).
- Stems will be planted 320 stems per acre.
- Planting will be completed by the first March 15, following completion of bridge construction.

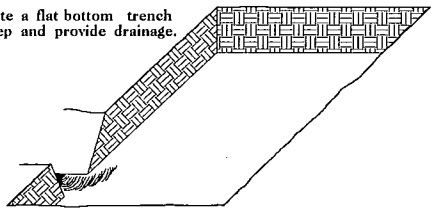
PLANTING DETAILS

SEEDLING / LINER BAREROOT PLANTING DETAIL

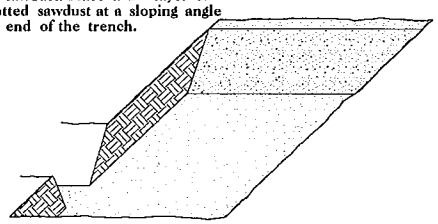
HEALING IN

1. Locate a healing-in site in a shady, well protected area.

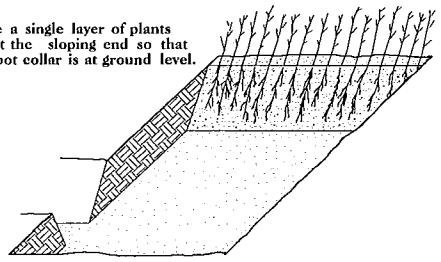
2. Excavate a flat bottom trench 12" deep and provide drainage.



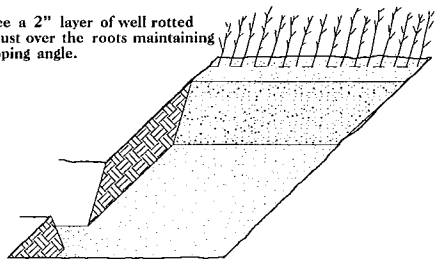
3. Backfill the trench with 2" well rotted sawdust. Place a 2" layer of well rotted sawdust at a sloping angle at one end of the trench.



4. Place a single layer of plants against the sloping end so that the root collar is at ground level.

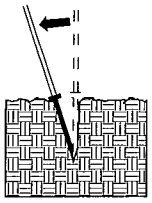


5. Place a 2" layer of well rotted sawdust over the roots maintaining a sloping angle.

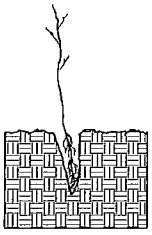


6. Repeat layers of plants and sawdust as necessary and water thoroughly.

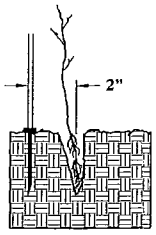
DIBBLE PLANTING METHOD
USING THE KBC PLANTING BAR



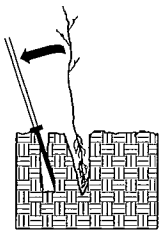
1. Insert planting bar as shown and pull handle toward planter.



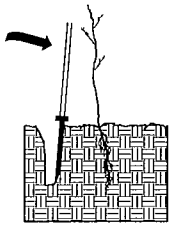
2. Remove planting bar and place seedling at correct depth.



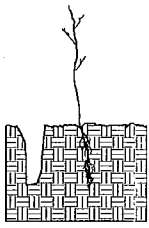
3. Insert planting ba toward planter fr seedling.



4. Pull handle of bar toward planter, firming soil at bottom.



5. Push handle forward firming soil at top.



6. Leave compactio hole open. Wate thoroughly.

PLANTING NOTES:

PLANTING BAG
During planting, seedlings shall be kept in a moist canvas bag or similar container to prevent the root systems 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
All seedlings shall be root pruned, if necessary, so that no roots extend more than 10 inches (10") below the root collar.