BISHOP ROAD WETLAND RESTORATION PROJECT

HYDE COUNTY, NORTH CAROLINA SCO PROJECT No. 050653801



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FINAL RESTORATION PLAN August 2006

Bishop Road, Hyde County

Prepared for:

North Carolina Ecosystem Enhancement Program

Prepared by:

ARCADIS G&M of North Carolina, Inc. 801 Corporate Center Drive Suite 300 Raleigh North Carolina 27607 Tel 919 854 1282 Fax 919 854 5448

Project Manager Robert Lepsic 919/854-1282, ext. 195 rlepsic@arcadis-us.com

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Executive Summary

ARCADIS was retained by the North Carolina Department of Transportation (NCDOT) to study the potential for wetland mitigation at the Bishop Road site and to develop a Wetland Restoration Plan Report. The Bishop Road site was purchased by NCDOT in the spring of 2001 as a potential wetland mitigation site. The North Carolina Ecosystem Enhancement Program (NCEEP) took over the project and retained ARCADIS to revise and update the Wetland Restoration Plan Report. The Bishop Road site consists of approximately 691.7 acres (279.9 hectares) along US 264 at Bishop Road, north of Scranton, in Hyde County, North Carolina. The Bishop Road site, which has been under pine plantation management for several decades, consists of approximately 399.6 acres (161.8 hectares) of pine stands of various ages, 33.1 acres (13.4 hectares) of timber cutover, 194.2 acres (78.6 hectares) of freshwater emergent marsh, 45.3 acres (18.3 hectares) of riverine forested wetland, and 19.1 acres (7.7 hectares) of roadway fill.

Published information relative to the project area was reviewed, including water resource information, federal and state protected species lists, aerial photographs, and soil survey maps. A Phase I Environmental Site Assessment Transaction Screening was completed for the project area. Additionally, a jurisdictional wetland delineation, a soil profile description, a hydrologic survey, and elevation surveys were performed within the project area. Preliminary survey did not reveal any historic, archaeological, or environmental constraints within the Bishop Road site. A detailed archaeological survey has been performed. The findings of the survey will be included in the final version of this document.

Hyde County is situated in the Tidewater Region of the Coastal Plain physiographic province of North Carolina, the largest geologic belt in the state. The site is reported to contain one soil association that is composed of nearly level, very poorly drained, and poorly drained soils that have a mineral surface layer and a loamy or clayey subsoil. All soils mapped within the Bishop Road site are classified as hydric.

The Bishop Road site is within the Tar-Pamlico River basin. The Bishop Road site is bound to the south by Scranton Creek, to the northwest by Tarklin Creek, and to the west by Pungo River. Numerous unnamed tributaries to these streams, including the headwaters of Tarklin Creek, are present in the southern, western, and northern portions of the site. Additionally, drainage ditches on the Bishop Road site and the adjacent properties transport surface runoff and groundwater towards Tarklin and Scranton Creeks and Pungo River.

The primary hydrologic inputs at the site are likely groundwater, seepage, and precipitation while the primary outputs are likely surface runoff and evapotranspiration. Since the Pungo River and its tributaries form the southern, western, and northern site boundaries, inundation from storm surges is also a likely source of water. The natural drainage of the site and adjacent areas has been altered to facilitate agriculture and timber production. Several drainage ditches have been installed along the roads and across the agricultural fields to help drain surface runoff.

Weyerhaeuser has managed the site for silvicultural uses. Therefore, it has been exempt from the rules set forth in the Section 404/401 program. However, with the NCDOT purchase and change in land use, the site is no longer exempt from the Section 404/401 program. Therefore, all construction, site maintenance, and land management practices implemented within the mitigation site will need to comply with regulations related to jurisdictional wetlands.

The United States Fish and Wildlife Service (USFWS) identified six endangered species, six threatened species, one threatened due to similarity of appearance species, and six federal species of concern (FSC) listed as potentially occurring in Hyde County (March 2006). The following table lists these federally protected species and their status; however, FSC species are not protected by the Endangered Species Act of 1973, as amended, and are not included in the table.

Scientific Name	Common Name	Federal Status	State Status	Biological Conclusion
Vertebrates				
Acipenser brevirostrum	Shortnose sturgeon	E	E	No Effect
Alligator mississippiensis	American alligator	T(S/A)	Т	No Effect
Caretta caretta	Loggerhead sea turtle	Т	т	No Effect
Charadrius melodus	Piping plover	т	т	No Effect
Chelonia mydas	Green sea turtle	Т	т	No Effect
Dermochelys coriacea	Leatherback sea turtle	E	E	No Effect
Eretomochelys imbricata	Hawksbill sea turtle	Е	E	No Effect
Haliaeetus leucocephalus	Bald eagle	Т	Т	Not Likely to Adversely Affect
Lepidochelys kempii	Kemp's Ridley sea turtle	Е	E	No Effect
Picoides borealis	Red-cockaded woodpecker	Е	E	Not Likely to Adversely Affect
Trichechus manatus	West Indian manatee	Е	E	No Effect
Vascular Plants				
Aeschynomene virginica	Sensitive jointvetch	Т	E	Not Likely to Adversely Affect
Amaranthus pumilus	Seabeach amaranth	Т	Т	No Effect

Federally Protected Species Known from Hyde County, North Carolina

Notes: E – Endangered; T – Threatened; T(S/A) – Threatened Due to Similarity of Appearance

Based on a wetland delineation that was verified by the United States Army Corps of Engineers (USACE), approximately 577.5 acres (233.7 hectares) of the site were determined to be jurisdictional wetlands. These jurisdictional wetland areas include 307.6 acres (124.5 hectares) of pine stands, 30.4 acres (12.3 hectares) of timber cutover, 194.2 acres (78.6 hectares) of tidal freshwater marsh, and 45.3 acres (18.3

hectares) of riverine forested wetland. The remaining portion of the site, which covers 114.2 acres (46.2 hectares), was determined to be non-jurisdictional based on the lack of hydrologic influence caused by drainage to the roadside ditches. These non-jurisdictional areas include 92.4 acres (37.4 hectares) of pine stands, 2.7 acres (1.1 hectares) of timber cutover, and 19.1 acres (7.7 hectares) of roadbeds.

The mitigation site will provide for the restoration of 3.3 acres (1.3 hectares) of tidal freshwater marsh, 109.3 acres (44.2 hectares) of non-riverine pine flatwoods, and 1.0 acre (0.4 hectare) of riverine forested wetland; and the preservation of 189.6 acres (76.7 hectares) of tidal freshwater marsh, 320.4 acres (129.7 hectares) of non-riverine pine flatwoods, and 61.6 acres (24.9 hectares) of riverine forested wetland. Approximately 5.0 acres (2.0 hectares) of the tidal freshwater marsh between Bishop Road and Scranton Creek were excluded from the mitigation site as the wetlands in this area have been mitigated for a violation incurred by Weyerhaeuser in late 2000. In addition, 1.9 acres (0.8 hectares) of non-jurisdictional 5-year-old pine flatwood and roadbeds between Bishop Road and US 264 will not be restored as the NCDOT has extended Silverthorne Road across this portion of the site.

Environmental benefit of the project will be a reduction in sediment transported to adjacent water bodies, creating a more diverse wildlife habitat and eliminating temporary habitat impacts associated with timber management and harvesting. Filling the on-site drainage ditches and removing the earthen roads will reduce the amount of suspended solids leaving the site via the ditches. Replacing the pine plantation with a natural plant community and restoring wetland characteristics within the site will create more diverse wildlife habitat on-site than currently exists. The periodic removal of vegetation competing with the planted pine and periodic timber harvesting has been eliminated.

The restoration areas and reference wetland areas will be monitored by groundwater gauges and stem count to determine the success of the mitigation. Monitoring results will be documented on an annual basis. The success criteria for hydrology and vegetation are the restoration of hydrologic regime appropriate for the wetland type restored, and the survival of 260 stems per acre of planted vegetation in the non-riverine pine flatwood. The NCEEP will maintain ownership of the site until all mitigation activities are completed and determined to be successful. Final dispensation of the Bishop Road mitigation site is anticipated to go to NCWRC based on a letter dated December 18, 2001 from NCWRC to ARCADIS expressing interest in the site. ARCADIS requested confirmation of NCWRC's interest in the site. No response has been received to date. Final dispensation of the site will be addressed in the final

Executive Summary

version of this document. Upon final dispensation of the site, the deed will state that the property will be managed for the purpose of mitigation in perpetuity.

Project Site identification and Location

1. Project Site Identification and Location

ARCADIS was originally retained by the North Carolina Department of Transportation (NCDOT) to study the potential for wetland mitigation at the Bishop Road site and to develop a Wetland Restoration Plan Report. The NCDOT currently owns the 691.7-acre (279.9-hectare) site situated along Bishop Road, between US 264 and the Pungo River, in Hyde County (Figure 1). The North Carolina Ecosystem Enhancement Program (NCEEP) took over the project and retained ARCADIS to revise and update the Wetland Restoration Design Report.

This report describes the objectives, existing conditions, and proposed mitigation components of the Bishop Road wetland mitigation site. For the purposes of this Wetland Restoration Design Report, the site will be referred to as Bishop Road throughout this report. The project vicinity is defined as a larger area, extending approximately one-half mile (0.8 kilometer) on all sides of the project area. The project region is the area generally represented on a standard 7.5-minute United States Geological Survey (USGS) topographic quadrangle map.

1.1 Directions to Project Site

The project site is located along SR 1156 (Bishop Road), between US 264 and the Pungo River, in Hyde County. It is approximately one mile (1.6 kilometer) north of Scranton, 5 miles (8.0 kilometers) southeast of Leechville, and 10 miles (16.0 kilometers) east of Belhaven. The site is bordered to the northwest by Tarklin Creek, the south by Scranton Creek, and the west by the Pungo River. The remainder of the site is bordered by roads, managed timber areas, agricultural fields, and wooded or undeveloped lands (Figure 2).

From Raleigh, take US 64 east towards Wendell. Merge onto US 264 east. Continue on US 264 approximately 135 miles to Bishop Road. Turn right onto Bishop Road. The site abuts the intersection of US 264 and Bishop Road and extends to the west and north.

1.2 USGS Hydrologic Unit Code and NCDWQ River Basin Designations

The Bishop Road site is within the lower Tar-Pamlico River basin, U. S. Geological Survey (USGS) Hydrologic Unit 03020104, and North Carolina Division of Water Quality (NCDWQ) subbasin 03-03-07.

2. Watershed Characterization

2.1 Drainage Area

The Bishop Road site is within the Tar-Pamlico River basin. The Tar-Pamlico River basin is the fourth-largest river basin in the state, covering approximately 5,440 square miles (14,090 square kilometers) and all or part of 16 counties. It originates in the Piedmont physiographic province in the north-central portion of the state and extends southeastward into the Coastal Plain physiographic province, and ultimately to the Atlantic Ocean. The Bishop Road site is situated in NCDWQ subbasin 03-03-07 and USGS Hydrologic Unit 03020104. The watershed for this hydrologic unit covers an area of more than 22,000 acres (8,900 hectares) and encompasses the Northern Atlantic Coastal Plain aquifer system, the Surficial aquifer system, and the Castle Hayne aquifer system.

The Bishop Road site is bounded to the south by Scranton Creek, to the northwest by Tarklin Creek, and to the west by Pungo River. Numerous unnamed tributaries to these streams, including the headwaters of Tarklin Creek, are present in the southern, western, and northern portions of the site. Additionally, drainage ditches on the Bishop Road site and the adjacent properties transport surface runoff and groundwater towards Tarklin and Scranton Creeks.

2.2 Surface Water Classification/Water Quality

All surface waters in the state are assigned a best use classification based on the uses for which the waters are best suited. The entire Tar-Pamlico River basin has been designated as Nutrient Sensitive Waters (NSW). These waters need additional nutrient management due to the excessive growth of microscopic and macroscopic vegetation (NCDWQ 2004). The surface water classification for Scranton Creek and Tarklin Creek is Class SC NSW. Class SC waters denote saltwaters with sufficient water quality to support secondary recreation and aquatic life propagation and survival. No High Quality Waters (HQW), Water Supplies (WS-I or WS II), or Outstanding Resource Waters (ORW) occur at or near the Bishop Road site.

A portion of the Pungo River has been requested for reclassification from SB to SA to apply more protection for shellfish resources. The SB classification denotes saltwaters with sufficient water quality for frequent and/or organized swimming or other human contact. The SA classification denotes saltwaters that have sufficient water quality to support commercial shellfish harvesting. All waters of Pungo River upstream of

Wades Point, including the waters adjacent to the Bishop Road site, are presently closed to shellfish harvest due to high bacteria levels. Studies to determine whether the area meets the standards for the SA classification are ongoing.

NCDWQ rates surface waters based on how well the waters support their designated uses. According to NCDWQ (2004), both Scranton and Tarklin Creeks are rated as "Not Rated (NR)". An NR rating is given to those streams for which no data have been collected to determine appropriate uses. However, both of these creeks are tributaries to the Pungo River, which was rated as "Supporting" by the NCDWQ in 2004. This designation is applied to waters that have a healthy biological community (NCDWQ 2004).

2.3 Physiography, Geology, and Soils

2.3.1 Physiography

Hyde County is situated in the Tidewater Region of the Coastal Plain physiographic province of North Carolina (Gagnon 1999). The Pamlico morphostratographic unit has elevations of less than 25 feet (7.6 meters) above mean sea level (MSL) and includes the Bishop Road site (Soller and Mills 1991; Gagnon 1999). The physiography of the project region was influenced by prehistoric ocean fluctuations.

Hyde County is composed of six landforms: pocosins, broad flat interstream areas, marshes, forested floodplains, lakewash rims, and coastal barrier islands (Gagnon 1999). The pocosin is the dominant landform, occupying the largest acreage in the county. However, the dominant landforms at the Bishop Road site are marsh and forested floodplains.

Topographic variations are minor across the Bishop Road site. A topographic survey of the entire site has not been performed. However, a survey of the existing road beds and associated drainage ditches was performed to confirm observed drainage direction and calculate earth work quantities. According to the USGS topographic map, elevations range between MSL and approximately 5 feet (1.5 meters) above MSL. According to the ARCADIS survey, which was tied to known monument elevations, the elevations along and adjacent to the existing roadbeds and associated ditches range between 2 feet (0.6 meter) below MSL and 4 feet (1.2 meters) above MSL. Micro-topography related to bedding rows and skidder tracks is present within the timber management area, allowing for the formation of isolated areas exhibiting wetter conditions.

2.3.2 Geology and Soils

The Bishop Road site is within the Coastal Plain, the largest geologic belt in the state. The Coastal Plain covers approximately 45 percent of the land area of North Carolina and consists of a wedge of mostly marine sedimentary rocks that gradually thickens eastward. The most common sediment types in the Coastal Plain are sand and clay; however, a large amount of limestone is located in the southern portion. According to the Natural Resources Conservation Service's (NRCS) Soil Survey of Hyde County, North Carolina, geologic marine deposits form a barrier that generally occurs at a depth of 10 feet (3.1 meters) below the soil surface for areas east of the Suffolk Scarp (Gagnon 1999). Based on the Geologic Map of North Carolina, the Bishop Road site is east of the Suffolk Scarp, and the undivided, surficial deposits at the site are comprised of sand, clay, gravel, and peat deposited in marine, fluvial, eolian, and lacustrine environments (NCDLR 1985).

The project region is comprised of sediments that were deposited during transgressiveregressive cycles caused by worldwide sea-level fluctuations. In part, these fluctuations were the result of the expansion and recession of glacial ice caps. During interglacial periods, relatively high sea levels allowed for deposition of marine and shoreline sediments (Soller and Mills 1991). Hyde County emerged from the sea about 75,000 years ago. A cooling trend during that geologic period caused expansion of the polar ice caps and thus lowered sea level. The marine and fluvial sediments deposited by the waters covering the county at that time are the parent material from which the present-day mineral soils formed (Gagnon 1999).

2.4 Historical Land use and Development Trends

The primary land use classification within the project vicinity is forested woodland, which includes the pine flatwood and riverine forested wetland communities present onsite. Agricultural land, forested woodland, and two residences occur within properties along Bishop and Silverthorne Roads and adjacent to the Bishop Road site. Two small cemeteries are located north of Silverthorne Road on the privately owned property adjacent to the Bishop Road site along Silverthorne Road. One additional cemetery was located during archaeological surveys conducted onsite in March, 2006. Specific information regarding the archaeological findings from the March, 2006 surveys will be documented by TRC Garrow Associates, Inc. (TRC).

The history of the site can be traced to the beginning of intensive management of pines, specifically loblolly pine (*Pinus taeda*). The site has been managed for timber since

Watershed Characterization

the early 1900s and was initially converted from its original vegetative community to pine plantation by removing the canopy vegetation that existed at that time. The removal of vegetation was accomplished by first harvesting merchantable trees and then using techniques such as shearing, piling, and burning the slash debris. Clearing the site opened the area for other management operations that could be used to modify the soil and water regime.

The site has been clear-cut several times, followed by artificial regeneration. Tree planting is favored since it allows for control of initial stem spacing. The timber stands across the site have been "bedded" to help keep the roots of planted pine seedlings above the water table, which rises during the wet seasons. The beds consist of continuous rows of mounds created by disk harrows and generally 10 to 12 inches (25.4 to 30.5 centimeters) higher than the adjacent inter-bed areas. Bedding greatly enhances tree survival and early growth by keeping the soil aerated and by reducing competition from shrub and ground-layer vegetation. Bedding also repairs soils compacted during wet-site timber harvests. Skidder tracks, or ruts from mechanical equipment, are present within the inter-bed areas. Aerial photomosaics of the site for the years 1958, 1960, 1992, 1997, and 2001 show the historic use of the site for timber management (Appendix A).

2.5 Endangered/Threatened Species

Some populations of fauna and flora have been, or are, in the process of decline due to either natural forces or their inability to coexist with humans. Federal law (under the provisions of Section 7 of the Endangered Species Act of 1973, as amended [ESA]) requires that any action likely to adversely affect a species classified as federally protected be subject to review by the United States Fish and Wildlife Service (USFWS). Other species may receive additional protection under separate laws.

According to the USFWS, there are seven endangered species, six threatened species, one threatened due to similarity of appearance species, and six federal species of concern (FSC) listed as potentially occurring in Hyde County (March 2006). The North Carolina Natural Heritage Program (NCNHP) identifies another 16 species that are listed and protected by the state as also potentially occurring in the county (March 2006).

The FSC and state-protected species are not protected under the provisions of Section 7 of the ESA. FSC species are defined as species that are under consideration for listing but for which there is insufficient information to support listing as threatened or

endangered (formerly C2 candidate species). As the status of these species may be upgraded at any time, they are included here for consideration. Protections afforded to species listed under state law are not applicable to this project.

The NCNHP database was reviewed for known populations or occurrences of the listed species at or near the Bishop Road site. The NCNHP has identified one population of sensitive jointvetch (*Aeschynomene virginica*, federally threatened) within a roadside ditch adjacent to the west side of US 264, south of the Silverthorne Road extension, and abutting the Bishop Road site. This population was verified during field surveys conducted in the fall of 2001. A survey for sensitive jointvetch was performed by qualified biologists within areas of potential habitat on the site in June 2002. The population was also observed during the 2002 survey. A subsequent survey was conducted in July 2005 by USFWS and ARCADIS to again verify the presence of the known population in the aforementioned ditch along US 264 and also to verify that no new populations had colonized other ditches in the area that are proposed to be impacted by the mitigation activities. No individuals of the species were observed during the 2005 site visit. No impacts to the species are anticipated to occur due to the proposed mitigation.

Table 1 lists the state and federally listed species, their habitat requirements, and habitat availability within the site. Descriptions of the federally listed threatened or endangered species are presented below, and biological conclusions address potential impacts, if applicable, to each species as a result of project implementation.

Shortnose sturgeon (Acipenser brevirostrum)

Federal Status: ENDANGERED

State Status: ENDANGERED

The shortnose sturgeon, a member of the family Acipenseridae, is a small species of sturgeon and seldom exceeds 3.28 feet (1.0 meter) in length. Shortnose sturgeons have an elongated, flattened body and a subterminal mouth with barbells, which are suited to their bottom feeding and generally benthic existence. The shortnose sturgeon is found sporadically in coastal rivers along the East Coast from Canada to Florida. These are anadromous fish; however, as the adults seldom travel from their natal river and associated estuary, each river's population is genetically distinct. The preferred habitat of the shortnose sturgeon is deep pools with soft substrates and vegetated bottoms. The shortnose sturgeon spawn in fast-moving, freshwater, riverine reaches with gravel bottoms.

Watershed Characterization

Current threats to habitat are from discharges, dredging, or disposal of materials into rivers, or related development activities involving estuarine and riverine mudflats and mudflats. Shortnose sturgeon occurs in most major river systems along the eastern seaboard of the United States. However, data are lacking for the rivers of North Carolina (NMFS 1998). It is believed that the shortnose sturgeon has occurred in the Roanoke and Neuse rivers, both of which empty into the Pamlico Sound.

Biological Conclusion: No Effect

Suitable habitat for the shortnose sturgeon does not exist within the study area. Fast moving, freshwater, riverine systems with gravel bottoms do not occur within the project study area. Review of NCNHP maps indicated no known population of the species within 1 mile (1.6 kilometers) of the project study area. Implementation of the proposed project will have no effect on the shortnose sturgeon.

American alligator (Alligator mississippiensis)

Federal Status: THREATENED (Similar Appearance)

State Status: THREATENED

The American alligator is 6 to 17 feet (1.8 to 5.2 meters) long. It has a broadly rounded snout, which distinguishes it from the American crocodile (*Crocodylus aeutus*), a federally endangered species. Coloration of the alligator is generally black, with young having light markings of yellowish crossbands that may persist into adulthood. These alligators are residents of the great river swamps, lakes, bayous, marshes and other water bodies of Florida and the Gulf and Lower Atlantic Coastal Plains. Nests consist of mounds of vegetative debris in which the eggs are buried between spring and early autumn; incubation time is 65 days. At hatching, most young are between 8 and 9 inches (20.3 to 22.9 centimeters) long.

The American alligator is listed as "threatened due to similar appearance" to provide protection to the American crocodile, a species which it closely resembles. The American crocodile is a tropical species and is not found in salt-water habitats this far north of Florida. The American alligator is not protected under Section 7 of the ESA and therefore does not require a biological conclusion relative to the proposed onsite activities.

Red wolf (Canis rufus)

Federal Status: ENDANGERED – EXPERIMENTAL, NONESSENTIAL POPULATION

State Status: SIGNIFICANTLY RARE

The red wolf is a small, slender wolf with long legs. It is intermediate in size between the coyote (*Canis latrans*) and the gray wolf (*C. lupus*), measuring 55 to 65 inches (1.4 to 1.7 meters) in length and weighing 36 to 59 pounds (Linzey and Brecht 2002). The wolf's coloration ranges from grayish-brown to reddish-tawny to black with whitish undersides. The red wolf typically travels and forages in family units consisting of the adult pair and their offspring. The primarily nocturnal wolf feeds on deer, raccoon, and small mammals including rodents, rabbits, and nutria. The wolf also may consume birds and unattended small livestock. A single litter is produced each year between March and May and consists of three to 12 pups. Habitat includes upland and lowland forests, shrublands, coastal prairies and marshes, and other heavily vegetated areas (NatureServe 2002).

Biological Conclusion: May Affect: Not Likely to Adversely Affect

The red wolf is endangered throughout its range, but all native populations are thought to be extinct. An introduction program has established a "wild" population in several eastern North Carolina counties. This introduced population has been designated as "non-essential, experimental" (EXP). EXP species are treated as threatened on public land and for consultation purposes, and as species proposed for listing on private land. Red wolf habitat is present within the project study area. The NCNHP has no records of any known populations of the red wolf within one mile (1.6 kilometers) of the project study area. Therefore, the species is not anticipated to be impacted as a result of project implementation.

Loggerhead sea turtle (Caretta caretta)

Federal Status: THREATENED

State Status: THREATENED

The loggerhead sea turtle is medium sized, ranging from 31 to 45 inches (78.7 to 114.3 centimeters) in length and weighing from 170 to 350 pounds (77 to 159 kilograms). It is easily identified by its reddish brown coloration. The carapace has five or more costals on each side, with the first one always touching the nuchal. The underside usually has three large scutes on the bridge between the shells. There is also a

middorsal keel, although it may be low and inconspicuous in larger turtles. Hatchlings range in size from 1.7 to 1.9 inches (4.1 to 4.8 centimeters) and are brown above and either whitish, yellowish, or tan beneath. Young turtles have three dorsal keels and two plastral keels.

Loggerhead turtles are nocturnal nesters. Each nest may contain as many as 120 eggs. The hatchlings emerge approximately two months after the eggs are laid. The turtle is carnivorous throughout its life, with the young obtaining food from living fauna of seagrass beds and mats. Loggerheads eat jellyfish, gastropods, crustaceans, mollusks, fish, and squid (NMFS 1991b).

Biological Conclusion: No Effect

In North Carolina, these turtles nest on ocean-facing beaches along the Outer Banks from mid-May through the end of August. Appropriate foraging and nesting habitat for the loggerhead sea turtle in the form of seagrass beds and mats and ocean-facing beaches is not present in the project limits. Therefore, the species will not be impacted as a result of project implementation.

Piping plover (Charadrius melodus)

Federal Status: THREATENED State Status: THREATENED

The piping plover is a small (6 to 8 inches [15.2 to 20.3 centimeters] tall) shore bird. Summer plumage color is pale sandy colored above and white below with a black neck ring and black bar across the forehead. The short thick bill is orange with a black tip during the summer. During the winter, the neck ring and forehead bar are a pale sandy color, and the bill is completely black. Piping plovers nest on sandy or pebbled beaches above the high-water mark or on lakeshores. The nest is typically a hollow in the sand that may be lined with shells or pebbles. Piping plovers return to their breeding grounds in late March or early April, and the young are generally flying two months later. However, storm tides, predators, or intruding humans sometimes disrupt nests before the eggs hatch. When this happens, the plovers often renest in the vicinity, and young from these late nesting efforts may not be flying until late August. By mid-September, both adult and young plovers will have departed from their breeding areas to migrate to their wintering territory.

Biological Conclusion: No Effect

Critical habitat areas have been designated along the coast of the Atlantic Ocean and the Gulf of Mexico from North Carolina to Texas. Appropriate habitat for the piping plover in the form of sandy or pebbled beaches or lakeshores does not exist in the Bishop Road project limits. As a result, project implementation will not affect the piping plover.

Green sea turtle (Chelonia mydas)

Federal Status: THREATENED

State Status: THREATENED

The medium sized sea turtle ranges from 36 to 48 inches (91 to 122 centimeters) in length and can weigh between 250 and 450 pounds (113 to 204 kilograms). General coloration is brown, with the carapace being a light or dark brown that is sometimes shaded with olive. Radiating mottled or wavy dark markings or large dark brown blotches often occur on the carapace. The species is distinguished by having only four costal plates on each side of the carapace, with the first costal not touching the nuchal. Green sea turtles also have only one pair of prefrontal plates between the eyes. Young green sea turtles range in size from 1.7 to 2.4 inches (4.1 to 6.0 centimeters) in length at hatching and are black above. After they are six months old, they become much paler in color. These young turtles may be found in warm, shallow, inshore and nearshore waters where they feed on sea grasses found in estuaries. Green sea turtles occupy three habitat types: high-energy oceanic beaches which are used for nesting, convergence zones in the open sea that are used for migration, and benthic feeding grounds in relatively shallow, protected waters (NMFS 1991a). Nesting in the continental United States is limited to the eastern coast of Florida (USFWS 2003).

Biological Conclusion: No Effect

Appropriate foraging or nesting habitat for the green sea turtle in the form of highenergy oceanic beaches, convergence zones in the open sea, and benthic feeding grounds in relatively shallow, protected waters does not exist within the Bishop Road project limits. Project implementation will not affect the green sea turtle.

Leatherback sea turtle (Dermochelys coriacea)

Federal Status: ENDANGERED State Status: ENDANGERED

Leatherback turtles are the largest of all living turtles, with an average length of 53 to 70 inches (134.6 to 177.8 centimeters) and weight of between 650 and 1,200 pounds (295 and 545 kilograms). Adults are easily distinguished from other turtles by their large, spindle-shaped bodies and their leathery, unscaled carapace that has seven prominent longitudinal dorsal ridges. Coloration can be variable among adults but is essentially black with scattered white blotches along the dorsal ridges. Hatchlings range in size from 2.4 to 3.0 inches (6.0 to 7.6 centimeters) in length, with coloration more distinctly black with white markings on the carapace. Leatherbacks usually nest in autumn and winter, with large groups of turtles arriving together at nesting sites along high-sloped beaches with deepwater approaches such as those found along the coast of the Gulf of Mexico. They are carnivorous throughout their life, with jellyfish being the principal part of their diet. They also feed on tunicates, crustaceans, and juvenile fish (NMFS 1992a). Leatherback turtles are mainly an open ocean species; however, they occasionally forage in shallow bays, estuaries, and the mouths of rivers.

Biological Conclusion: No Effect

Aerial surveys conducted by NCDOT between April and November in 1979, 1982, and 1983 revealed the presence of leatherback turtles near the ocean shoreline between Cape Hatteras, North Carolina, and Cape Sable, Nova Scotia. Appropriate foraging and nesting habitat for these sea turtles in the form of shallow bays, estuaries, the mouths of rivers, and ocean-facing beaches does not exist in the Bishop Road project limits. Project implementation will not affect the leatherback sea turtle.

Hawksbill sea turtle (*Eretomochelys imbricata*)

Federal Status: ENDANGERED

State Status: NOT LISTED

Hawksbill sea turtles range in length from 30 to 35 inches (76.2 to 88.9 centimeters) and can weigh between 95 and 165 pounds (43 to 75 kilograms). General coloration is brown with smaller turtles showing a tortoiseshell pattern. The carapace has four costal plates on each side, with the first plate not touching the nuchal, which is similar to the green sea turtle. However, hawksbill sea turtles have a keel down the center of the carapace and two pairs of prefrontal plates between the eyes that distinguishes them

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from the green sea turtles. Young hawksbill turtles are between 1.5 and 1.9 inches (3.8 to 4.8 centimeters) long at hatching and are generally black or very dark brown above and below. The hawksbill is a carnivorous turtle that feeds along the benthic substrate in coastal areas. Its diet consists of tunicates, sponges, crustaceans, and gastropods.

Hawksbill sea turtle nesting in the U.S. is restricted to the southeastern coast of Florida and the Florida Keys, where they are nocturnal nesters (NMFS 1993).

Biological Conclusion: No Effect

Appropriate foraging and nesting habitat for the hawksbill sea turtles in the form of coastal benthic substrate areas and ocean-facing beaches does not exist in the Bishop Road project limits. Project implementation will not affect the species.

Bald eagle (Haliaeetus leucocephalus)

Federal Status: THREATENED

State Status: THREATENED

The mature bald eagle (usually 4+ years in age) can be identified by its large white head and short white tail. The body plumage is dark-brown to chocolate-brown in color. Bald eagles can easily be distinguished from other birds by their flat wing soar. They are primarily associated with large bodies of water where food is plentiful. Eagle nests are found in proximity to water (usually within 0.5 mile [0.8 kilometer]) with a clear flight path to the water, in the largest living tree in an area, with an open view of the surrounding land. Human disturbance can cause nest abandonment. The breeding season for the bald eagle begins in December and January. Fish are the major food source, although forage items include coots, herons, wounded ducks, and carrion.

Biological Conclusion: May Affect: Not Likely to Adversely Affect

Since July 6, 1999, the bald eagle has been under consideration by the USFWS for a proposed de-listing of its threatened status. However, the raptor will still be protected under the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act, and populations will continue to be monitored for at least another five years under provisions of the ESA.

Bald eagles are a year-round resident and transient species in North Carolina. Weyerhaeuser personnel reported a bald eagle nesting site south of the Bishop Road site, and a mature bald eagle sighting above the Scranton Creek and Pungo River.

Habitat for bald eagles exists within the Bishop Road site. The Pungo River and its tributaries provide foraging habitat, and the undeveloped status of the site provides a clear flight path to the water. The portions of the site that contain riverine forested wetlands and the 30-year-old pine flatwood provide nesting habitat. ARCADIS performed a field survey for the bald eagle in November 2002. No evidence of bald eagle nests was observed along the perimeter of the timber stands adjacent to Tarklin Creek. It is recommended that a new survey be conducted prior to final design of the mitigation activities such that any bald eagles that may have moved into the area may be documented. The proposed mitigation activities are not likely to adversely affect the onsite nesting or foraging habitat of the bald eagle.

Kemp's Ridley sea turtle (Lepidochelys kempii)

Federal Status: ENDANGERED

State Status: ENDANGERED

The Kemp's Ridley sea turtle is the smallest of the Atlantic sea turtles, ranging in length from 23.0 to 27.5 inches (58 to 70 centimeters) long and weighing between 80 and 100 pounds (36 and 45 kilograms). It is the only sea turtle with an almost circular carapace. Coloration is olive green above and yellow below. The carapace has five costals on each side, with the first one touching the nuchal. The underside has four enlarged scutes on the bridge, each of which is pierced by a pore near the posterior edge. Hatchling turtles are about 1.5 to 1.8 inches (3.8 to 4.4 centimeters) long and are dark gray with a short streak of light gray along the rear edge of the front flipper. Adult turtles usually occur only in the Gulf of Mexico while juveniles and immature individuals range between tropical and temperate areas of the Atlantic coast. The Kemp's Ridley sea turtle is carnivorous throughout its life cycle, with crabs, shrimp, gastropods, clams, and jellyfish as a major portion of the diet (NMFS 1992b).

Biological Conclusion: No Effect

North Carolina's only documented nest of Kemp's Ridley sea turtles was noted in 1992 on Long Beach in Brunswick County. Appropriate nesting or foraging habitat for Kemp's Ridley sea turtle in the form of shallow salt waters and ocean-facing beaches is

not available in the Bishop Road project limits. No impacts to this sea turtle will occur from project implementation.

Red-cockaded woodpecker (Picoides borealis)

Federal Status: ENDANGERED

State Status: ENDANGERED

The red-cockaded woodpecker (RCW) is 7.1 to 7.9 inches (18 to 20 centimeters) long with a wingspan of 13.8 to 15.0 inches (35 to 38 centimeters). It is identified by plumage that is entirely black and white except for small red streaks on the sides of the nape of the male. The back of the RCW is black with white horizontal stripes, and the bird has a large white cheek patch surrounded by a black cap, nape, and throat. The woodpecker's diet is composed mainly of insects, including ants, beetles, wood-boring insects, caterpillars, and corn earworms, if available. About 16 to 18 percent of the diet includes seasonal wild fruit (USFWS 1999).

The RCW inhabits open pine forests in the southeastern United States. The RCW is unique among woodpeckers because it nests exclusively in living pine trees. The bird uses open, old growth stands of southern pines, particularly longleaf pine (*Pinus palustris*), for foraging and nesting habitat. Slash, pond, or loblolly pines (*P. elliottii* and *P. serotina*) will also be utilized if longleaf pine is not available. A forested stand must contain at least 50 percent pine and lack a thick understory. The birds excavate nests in pines greater than 60 years old and contiguous with pine stands at least 30 years of age. The foraging range of the RCW may extend 500 acres (200 hectares) and must be contiguous with suitable nesting sites. In good, well stocked pine habitat, sufficient foraging substrate can be provided on 80 to 125 acres (32.4 to 50.6 hectares).

Living pines infected with red-heart disease (*Formes pini*) are often selected for cavity excavation because the inner heartwood is usually weakened. Cavities are located from 12 to 100 feet (3.6 to 30.3 meters) above ground level and below live branches. These trees can be identified by "candles," a large encrustation of running sap that surrounds the tree below the cavity. Clusters consist of one to many of these candle trees. The RCW lays its eggs in April, May, and June; the eggs hatch approximately 38 days later. Most often, the parent birds and some of their male offspring from previous years form a family unit called a group. Commonly, these groups are comprised of three to five birds. Rearing the young birds becomes a shared responsibility of the group. However, a single pair can breed successfully without the benefit of the helpers.

Biological Conclusion: May Affect: Not Likely to Adversely Affect

Habitat for RCW exists within the project area. Large tracts of forest containing loblolly pine that could be potential habitat are located on the adjacent Weyerhaeuser pine plantation property. However, these stands of trees are less than 40 years old and exhibit a moderately dense understory. No colonies of RCWs have been reported at this or surrounding locations. Proposed project construction is not likely to adversely affect the RCW. Preservation of existing wet pine flatwoods is expected to increase the amount of habitat available for RCW at the Bishop Road site by preventing future logging activities and allowing the 30-year-old pine trees to further mature.

West Indian manatee (Trichechus manatus)

Federal Status: ENDANGERED

State Status: ENDANGERED

The West Indian manatee is a Sirenian, which are sometimes called sea cows. They are large mammals that spend their entire lives in water. These manatees are about 10 feet (3.0 meters) long and can weigh as much as 1,000 pounds (454 kilograms). Their forelimbs are modified to form flippers, their hindlimbs are reduced to nothing more than a vestigial pelvis, and their tail is enlarged and flattened horizontally to form a fluke or paddle. Their nostrils are on top of their snouts and are closed by valves except when they surface to breathe about every 3 to 4 minutes. The lips are large and mobile, and they are covered with stiff bristles. Manatees are herbivores whose main food sources are submerged, emergent, and floating aquatic plants, but they will occasionally eat small fish. They can consume as much as 10 percent of their body weight in wet vegetation each day. Manatees spend their time eating, resting, and traveling. Between October and April, or months when the water temperature falls below 70 degrees Fahrenheit (21 degrees Centigrade), they can be found in warm coastal waters or near warm water outfalls around southern Florida. During summer months, they may migrate as far north as coastal Virginia in search of an adequate food supply (USFWS 1999).

Biological Conclusion: No Effect

Critical habitat areas have been designated in Florida as required by the current recovery plan. Any manatees occurring in North Carolina coastal waters would most likely occur in the Pamlico Sound. Appropriate habitat for this species in the form of

open water accessible from the ocean does not exist within the Bishop Road project limits. No impacts will occur to this species due to project implementation.

Sensitive jointvetch (Aeschynomene virginica)

Federal Status: THREATENED

State Status: ENDANGERED

Sensitive jointvetch is an herbaceous annual of the legume family and native to the eastern United States. The leaves, consisting of 30 to 56 leaflets, are supported on stems that grow between 3.25 to 8.0 feet (1.0 to 2.4 meters) tall. The leaflet surfaces are gland-dotted, and the leaves are sensitive to touch. The vetch has the typical butterfly-like legume flowers, which are arranged in a long raceme. The flowers are yellow with red streaks and bloom from June through September or later. The fruit is a loment, consisting of 4 to 10 segments, each containing a single seed. The fruit turns dark brown when ripe. Sensitive jointvetch grows in intertidal zones usually at the marsh edge near the upper limits of tidal fluctuation. Critical to the survival of this annual species is the presence of bare to sparsely vegetated substrate for seed germination and growth. These areas include accreting point bars, low swales, and meander zones of tidal rivers. This plant is a species that grows for a relatively short period at a particular location and maintains itself by colonizing new, recently disturbed habitats where it may compete successfully with other early successional species.

Biological Conclusion: May Affect: Not Likely to Adversely Affect

Two populations of sensitive jointvetch are known in North Carolina. One of the populations is immediately adjacent to the Bishop Road site within the roadside ditch along the western side of US 264 between the Silverthorne Road extension and the terminus of Bishop Road. Field investigators verified the presence of these plants during surveys conducted in the fall of 2001 and the summer of 2002. While the Bishop Road site previously exhibited limited areas of habitat in the cutover areas along the marsh edges, sensitive jointvetch was not found to occur in these locations during a survey for the plant, which was conducted in the fall of 2001. An additional survey was conducted in the summer of 2002 to determine if any new plants had colonized the project site. The plant was not found to occur in any area that will be disturbed by the mitigation construction activities proposed herein. A third survey was conducted by representatives of USFWS and ARCADIS in the summer of 2005 to determine if the known population noted previously was still there and to determine if

new plants had colonized the project site. No individuals of the known population were observed, and no new populations were observed. Habitat for the species is present within the project site, but no impacts to individuals are anticipated to occur due to construction activities. Restoration of the tidal freshwater marsh habitat is expected to increase the amount of habitat available for sensitive jointvetch at the Bishop Road site.

Seabeach amaranth (Amaranthus pumilus)

Federal Status: THREATENED

State Status: THREATENED

Seabeach amaranth is an annual plant with pink-red or reddish-colored fleshy stems and small rounded leaves that are 0.5 to 1.0 inch (1.3 to 2.5 centimeters) in diameter. The spinach-green, glossy leaves are normally clustered toward the tip of the stem and have a small notch at the rounded tip. The plants are dioecious, and the inconspicuous flowers and fruits are borne in clusters along the stems. Flowering occurs throughout the growing season, extending from early June through late fall. Germination occurs from April to July, when the plant initially forms a small, unbranched sprig that branches profusely into a clump. These clumps can reach as much as 1 foot (0.3 meter) in diameter and consist of 5 to 20 branches. Seabeach amaranth often forms mats by abundant branching of these dense clumps. It is found on Atlantic Ocean barrier island beaches in overwash flats, lower foredunes, and upper strands of noneroding beaches. Small, temporary populations may also be established in other habitats such as soundside beaches, foredune blowouts, and sand and shell material placed as beach replenishment or dredge spoil. Seabeach amaranth is intolerant of competition and does not occur on moderately vegetated sites (Weakley, et al. 1995). Succession of vegetation from annual to perennial dominance reduces habitat availability and would likely exclude these plants as vegetation succession progresses. Seabeach amaranth is also threatened by construction of beach stabilization structures, beach erosion, tidal inundation, beach grooming, insect infestation and herbivory, feral animals, and off-road vehicles.

Biological Conclusion: No Effect

Seabeach amaranth acts as a fugitive species, able to occupy open habitat as it becomes available on sandy beach-like shores of the Pamlico Sound. Habitat for this plant is not available within the Bishop Road project limits. No impacts to this species will occur as a result of project implementation.

2.6 Cultural Resources

A review of properties eligible for the National Register of Historic Places at the State Historic Preservation Office (SHPO) was conducted for the Bishop Road site and the surrounding areas. According to the files, there are no National Register properties within a 1-mile (1.6-kilometer) radius of the site. In addition, the North Carolina Office of State Archaeology was contacted to determine if any documented archaeological sites occur within or near the site. No sites were identified within a 1mile (1.6-kilometer) radius of the Bishop Road site. However, it should be noted that a cemetery is adjacent to the Bishop Road site north of Silverthorne Road at the western edge of the agricultural field. An archaeological survey was requested by the SHPO and has been performed in the portions of the site abutting Tarklin Creek and Scranton Creek in which construction activities are proposed to occur. The findings have not yet been documented by TRC; however, they are anticipated to be documented prior to finalization of this document and therefore are anticipated to be included in the final version of this document.

2.7 Potential Constraints

One potential constraint to restoration of wetland hydrology within the site is a property corner that abuts the shoulder of West Muriel Road near the eastern extent of the timber cutover area. A roadside ditch is located at the toe of slope adjacent to West Muriel Road that carries water flowing in a southwesterly direction through the site past the property corner.

2.7.1 Property Owner

The NCDOT purchased the Bishop Road site from Weyerhaeuser in the spring of 2002. The primary point of contact regarding ownership and stewardship issues is:

Gregory J. Thorpe, Ph.D. Environmental Management Director North Carolina Department of Transportation Post Office Box 25201 Raleigh, North Carolina 27611

The development of the site for wetland restoration has been transferred to NCEEP. Therefore, project related issues should be directed to:

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Julia C. Hunt Eastern Project Manager II North Carolina Ecosystem Enhancement Program 1652 Mail Service Center Raleigh, NC 27699-1652

2.7.2 Site Access

The Bishop Road site is accessible via US 264 and several gravel roads that traverse the site. Bishop Road is an improved gravel road. Silverthorne Road, East and West Muriel Roads, Tarklin Creek Road, and Weyerhaeuser Service Road are unimproved gravel and soil roads (Figure 2). All of the above-mentioned roads currently provide access to the interior portions of the site.

2.7.3 Utilities

No utilities are known to be located within the site. No constraints due to existing utilities are anticipated within the site.

2.7.4 FEMA/Hydrologic Trespass

The Federal Emergency Management Association (FEMA) Flood Insurance Rate Map of Hyde County, North Carolina (Community-Panel Numbers 370133 7644-J) indicates that the site is in a FEMA Flood Zone AE (EL7), areas of flooding (FEMA 2003). Flood Zone AE (EL7) indicates that those areas less than 7 feet (2.1 meters) above MSL are subject to inundation by a 100-year flood, as determined by detailed methods.

Hydrologic trespass is addressed in Sections 3.2.2 and 5.2.

2.7.5 Environmental Hazards

2.7.5.1 Database Search

ARCADIS contracted Environmental Data Resources, Inc. (EDR) to search the federal, state, and local databases in April 2001 to determine whether the Bishop Road site or neighboring areas have a regulatory history of environmental problems that could have an adverse impact on the site. The databases were searched using the America Society for Testing and Materials (ASTM) standard search radius for each database (ASTM 2000). A copy of the EDR report is provided in Appendix B. The search results

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indicate that there are no known environmental hazards at or near the Bishop Road site. The database search expired in October 2001; however, the results are not anticipated to have changed since the date of the original search due to no new facilities being observed within a one-mile (1.6-kilometer) radius of the site. The databases searched are listed below.

Federal ASTM Standard

- National Priorities List (NPL)
- Proposed NPL
- Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS)
- CERCLIS No Further Remedial Action Planned (CERC-NFRAP)
- Corrective Action Report (CORRACTS)
- Resource Conservation and Recovery Information System, which includes information on Treatment, Storage, and/or Disposal (RCRIS-TSD)
- Resource Conservation and Recovery Information System Small and Large Quantity Generator and/or Transporter (RCRIS-SQG and RCRIS-LQG)
- Emergency Response Notification System (ERNS)

State ASTM Standard

- Inactive Hazardous Sites Inventory (SHWS)
- List of Solid Waste Facilities (SWF/LF)
- Leaking Underground Storage Tanks (LUST)
- Petroleum Underground Storage Tank Database (UST)

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Federal ASTM Supplemental

- Superfund (CERCLA) Consent Decrees (CONSENT)
- Records of Decision (ROD)
- Delisted NPL
- Facilities Index System (FINDS)
- Hazardous Materials Information Reporting System (HMIRS)
- Material Licensing Tracking System (MLTS)
- Mines Master Index File (MINES)
- Federal Superfund Liens (NPL Liens)
- PCB Activity Database System (PADS)
- RCRA Administrative Action Tracking System (RAATS)
- Toxic Chemical Release Inventory System (TRIS)
- Toxic Substances Control Act (TSCA)
- FIFRA/TSCA Tracking System FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act)/TSCA (FTTS)

State or Local ASTM Supplemental

- Hazardous Substance Disposal Site (NC HSDS)
- Incident Management Database (IMD)

EDR Proprietary Databases

Former Manufactured Gas Sites (Coal Gas)

2.7.5.2 Transaction Screening

In addition to the database search, a field reconnaissance of the site was performed to identify potential environmental hazards, including Recognized Environmental Concerns (RECs). RECs are defined as the presence of any hazardous substances or petroleum products in structures on the property or in the ground, groundwater, or surface water on the property.

Small quantities of domestic and construction debris were noted at the site. These items included one larger refrigerator/freezer, one small chest freezer, several pieces of polyvinyl chloride (PVC) pipe, and several pieces of vinyl siding along West Muriel Road. A kerosene heater, stove, and several wooden items were discovered at the end of East Muriel Road. One abandoned automobile was noted at the end of Silverthorne Road. Due to the site's proximity to the Pungo River, hurricane and seasonal floodwaters may be responsible for the deposition of some debris. No RECs were identified.

Based on conversations with Bryant Hardison, Acquisition Forester, Weyerhaeuser, on 17 April 2001, there are no known RECs on the property. A list of questions associated with the Phase 1 Environmental Site Assessment Transaction Screening is provided in Appendix C.

2.7.5.3 Chain of Title

Deed records were reviewed at the Weyerhaeuser Office in Washington, North Carolina. According to the deed for the property, Weyerhaeuser purchased the site in August 1948 from J. W. Wells and wife, Ruth A. Wells. This deed was recorded in Hyde County, Bargain and Sale Book 62, Page 486, and in the Registration of Land Titles Book 3, Page 253. The Wells family was issued a certificate rather than a deed when they purchased the property from Bernard B. Shaw and wife, Fay D. Shaw, in January 1946.

Project Site Wetlands

3. Project Site Wetlands (Existing Conditions)

3.1 Jurisdictional Wetlands

Section 404 of the Clean Water Act (CWA) requires regulation of discharges into "Waters of the United States." The United States Environmental Protection Agency (USEPA) is the principal administrative agency of the CWA; however, the United States Army Corps of Engineers (USACE) has the responsibility for implementation, permitting, and enforcement of the provisions of Section 404 of the CWA. The USACE regulatory program is defined in 33 CFR 320-330.

Water bodies, including lakes, rivers, and streams, are subject to jurisdictional consideration under the Section 404 program. Wetlands are also identified as "Waters of the United States." Wetlands, as defined in 33 CFR 328.3, are those areas that are inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support, and under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Any action that proposes to place fill in these areas falls under the jurisdiction of the USACE under Section 404 of the CWA (33 U.S.C. 1344). "Waters of the United States" are also regulated by the NCDWQ.

All construction, site maintenance, and land management practices implemented within the mitigation site will need to comply with regulations related to jurisdictional wetlands.

According to the National Wetlands Inventory (NWI) maps, palustrine and emergent wetland types are present along the northern, southern, and western property boundaries of the Bishop Road site. As NWI mapping is not ground-truthed, the maps generally provide incomplete and/or inaccurate information regarding the location and type of wetlands present. In order to confirm NWI mapping, wetland delineations were performed in November 2001 by ARCADIS field investigators and verified by the USACE (Figure 3).

Based on the wetland delineations, the site contains 577.5 acres (233.7 hectares) of jurisdictional wetlands and 114.2 acres (46.2 hectares) of non-jurisdictional areas. Figure 3 shows the location of the existing areas determined to be jurisdictional and non-jurisdictional during the delineation, and the results are summarized in Table 2. USACE Routine Wetland Determination Data Forms are presented in Appendix D.

Project Site Wetlands

Hydrophytic vegetation and hydric soils, as verified by the soil profile analysis discussed in Section 3.3, are present throughout the entire 691.7-acre (279.9-hectare) site. However, natural hydrology has been altered by numerous drainage ditches along roadways and throughout the pine flatwood areas.

The depth of the water table is affected by numerous factors, including microtopography, the presence or absence of roadside ditches, minor drainage, and the age and type of vegetation. Both pine and hardwood wet flats experience saturated soil conditions at any season of the year, but drier conditions usually occur during the growing season when evapotranspiration rates are highest. Growing season is defined as the number of consecutive days where the temperature has not gone below an index temperature for specific vegetation. Based on data collected by the climate station in New Holland, the Hyde County growing season generally ranges from March 20 to November 22 and includes 247 days.

Occurrences of plant species that have adapted to wetland conditions often suggest the presence of wetland hydrology. The National List of Vascular Plant Species that Occur in Wetlands is generally used to determine whether the dominant vegetation at a site is an indicator of wetland hydrology (Reed 1988). An area with 50 percent or more of dominant vegetation that is classified as facultative (FAC), facultative wetland (FACW), or obligate wetland (OBL) is used as an indicator of wetland hydrology. FAC vegetation is 34 to 66 percent as likely to occur in wetlands as non-wetlands. FACW plants occur 67 to 99 percent of the time in wetlands, but can occasionally be found in non-wetlands. Under natural conditions, OBL plants occur more than 99 percent of the time in wetlands. Vegetation and is used to assist with the delineation of jurisdictional wetlands (Environmental Laboratory 1987). Existing successional vegetation at the site is comprised of predominantly hydrophytic vegetation that falls within these three categories.

3.2 Hydrologic Characterization

The primary hydrologic inputs at the site are wind driven tides, groundwater, seepage, and precipitation while the primary outputs are likely surface runoff and evapotranspiration. Since the Pungo River and its tributaries form the southern, western, and northwestern site boundaries, inundation from storm surges is also a likely source of water. Tide and salinity data from various sampling stations on the Pungo River indicate that the waters adjacent to the Bishop Road site have a salinity less than 0.5 parts per thousand (ppt) and are affected by wind driven tides. Evaluation

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of the marsh areas on the Bishop Road site revealed that the wind driven tides influence onsite hydrology.

The average annual rainfall for Hyde County, as reported by the State Climate Office of North Carolina (SCO) from 1961 to 1990 was between 50 and 56 inches (127.0 to 142.2 centimeters) (2001). Rainfall data collected at the New Holland climate station, which is approximately 16 miles (25.7 kilometers) east of the project area, show the highest levels of rainfall during the last 30 years have typically occurred during the summer months (NRCS 1999).

The natural drainage of the site and adjacent areas has been altered to facilitate agriculture and timber production. Several drainage ditches have been installed along the roads and across the agricultural fields within adjacent properties help to drain surface runoff (Figure 4). Elevations of the existing ditches along Bishop Road, Silverthorne Road, West Muriel Road, and East Muriel Road were surveyed in February 2006 to determine the drainage patterns for surface water runoff along the roadways and adjacent areas that may drain across the roadway corridors. Discussions with a 35-year resident of Bishop Road were also conducted to confirm drainage patterns and to obtain any historical flood information. Profiles of the ditches are provided in the attached Plan Sheets (Appendix E), and ditch location and flow direction are depicted in Figure 4. A summary of the survey data observed follows.

The southern half of the portion of Bishop Road that lies between US 264 and Silverthorne Road drains to the south into an outfall ditch on the west side of US 264 near the Bishop Road intersection. The outfall drains directly toward Scranton Creek, which is located a few hundred feet south of the Bishop Road intersection. The northern half of this portion of Bishop Road drains to the north and connects to ditches along Silverthorne Road. A 21-inch (53-centimeter) diameter concrete pipe culvert is below Bishop Road at the Silverthorne Road intersection and drains from east to west. According to the local resident, the section of Bishop Road between US 264 and Silverthorne Road floods three or four times annually due to backwater from Scranton Creek.

The ditches within the adjacent properties and along the section of Bishop Road from the Silverthorne Road intersection to a point approximately 4,000 feet (1,219 meters) north (the limit of the agricultural fields) drain to three pipe culverts crossing Bishop Road. The pipes all drain from east to west and collect runoff from the fields. The outfall ditches at the downstream end of the pipes extend to a small creek, which drains to the southwest, crosses Silverthorne Road and extends to Scranton Creek. The local

resident reported that this section of Bishop Road does not flood, although the ditches fill to the roadway shoulder several times annually.

The ditches in the northern section of Bishop Road between Muriel Road and the northern limit of agricultural fields drain to the north and connect to the ditches along East and West Muriel Roads. The section of Bishop Road south of the northern portion of the site contains no roadway ditches. Surface runoff from the existing roadway corridor flows south toward the ditches that begin at the limit of the agricultural fields.

Ditches along Silverthorne Road drain toward two pipe culverts crossing the road. These pipes drain from north to south and ultimately discharge into Scranton Creek, which is approximately 500 feet (152 meters) south of Silverthorne Road. The western end of Silverthorne Road includes a section approximately 600 feet (183 meters) long with no roadway ditches. Surface runoff in this area drains toward a marsh that is situated perpendicular to and on both sides of the roadway within this area.

Ditches extend along both sides of the entire length of East Muriel Road. In general, the ditches slope from west to east beginning at the Bishop Road intersection. The ditches end approximately 100 feet (30.5 meters) beyond the eastern end of the roadway in a topographically lower area and do not appear to be directly connected to outfall ditches. Surface runoff from these ditches would discharge to the topographically lower area and may flood portions of the roadway as well. Any runoff beyond the top of banks would remain within the Bishop Road site and flow north toward Tarklin Creek as shallow concentrated flow or as sheet flow, crossing East Muriel Road if necessary to reach Tarklin Creek. The local resident has never observed any flow beyond the top of the banks of these ditches.

Ditches extend along both sides of the entire length of West Muriel Road and are connected to each other around the southern terminus of the road. Any runoff beyond the top of banks would remain within the Bishop Road site and flow toward Tarklin Creek to the north or Scranton Creek to the south as shallow concentrated flow or as sheet flow. The ditch along the southern side of West Muriel Road connects to two outfall ditches that flow south to Scranton Creek. The local resident has never observed any flow beyond the top of the banks of these ditches.

3.2.1 Drainage Alteration Plan

The attached Plan Sheets (Appendix E) illustrate the proposed drainage pattern alteration for the site. The existing drainage ditches throughout the site which convey surface and groundwater to Tarklin Creek, Scranton Creek and the Pungo River will be filled. This will raise groundwater elevation to within 12 inches of the ground surface. The existing ditches along the property line will be maintained to prevent hydrologic trespass onto the adjacent properties.

One new ditch will be constructed to prevent water from backing up onto an adjacent property (Sheet 5). The property corner is located immediately south of West Muriel Road ditch. Currently, the water in this ditch flows to the west and then turns to the south in a connecting ditch before flowing into Scranton Creek, as described in Section 3.2. The new ditch will begin at the property corner and flow in a northerly direction approximately 100 feet (30.5 meters). Water from the new ditch will then seep into Tarklin Creek. The ditch will maintain the current groundwater elevations in the area.

3.2.2 Drainage Alteration Analysis

Analysis of the drainage alteration proposed at the site show adjacent properties will not be negatively affected. The existing drainage ditches on adjacent private properties will be maintained to minimize the potential for hydrologic trespass. A small section of ditch and the excavation of a new ditch will prevent hydrologic trespass at a property corner west of the Bishop Road and West Muriel Road intersection.

3.2.3 Hydrologic Budget for Restoration Site

The fact that hydrology indicators are not present over the entire site (the nonjurisdictional areas) and are closely related to roadside and drainage ditches, the hydrologic output of the site is greater than the input. The system of drainage ditches routes the majority of surface flow associated with precipitation and groundwater off the site into adjacent water bodies. This flow pattern results in a deficit in the water budget, hence the lack of hydrology indicators within the non-jurisdictional areas of the site.

Filling the drainage ditches will greatly reduce, if not eliminate, the hydrologic output from the site associated with the ditches. It will also raise groundwater elevations closer to the ground surface, thus restoring the hydrology in the non-jurisdictional areas.

3.3 Soil Characterization

According to Gagnon (1999), one soil association is present at the Bishop Road site, the Hydeland-Acredale-Argent association. Soil associations generally consist of one or more major soils and some minor soils or miscellaneous areas. These associations provide a broad perspective of the soils and landscapes in a particular area. They establish a basis for comparing the potentials of large areas for general kinds of land use.

The Hydeland-Acredale-Argent association is composed of nearly level, very poorly drained, and poorly drained soils that have a mineral surface layer and a loamy or clayey subsoil. The association occurs along broad, flat interstream areas, in depressions, and along the outer edges of pocosins. Its composition is approximately 33 percent Hydeland soils, 26 percent Acredale soils, 19 percent Argent soils, and 22 percent minor soils, including Brookman, Chapanoke, Weeksville, Yeopim, and Pasquotank soils (Gagnon 1999). Based on Gagnon (1999), 12 soil mapping units cover the project site (Figure 5). Each unit is listed and briefly described in Section 3.3.1.

Hydric soils are defined as soils that are saturated, flooded, or ponded long enough during the growing season to develop anaerobic conditions that favor the growth and regeneration of hydrophytic vegetation (Cowardin, et al. 1979). Soils referred to as "Hydric A" are completely hydric throughout the mapped soil unit. "Hydric B" soils are non-hydric soils that contain inclusions of hydric soils. These inclusions are usually situated in depressional areas or along the border with other soil units. All soils mapped within the Bishop Road site are either "Hydric A" or "Hydric B" (Gregory 2001) (Figure 6).

Soil moisture conditions that maintain aquic conditions as defined in Keys to Soil Taxonomy (NRCS 1998) can be correlated to the hydric soil conditions of jurisdictional wetlands. The hydrology criterion required by the USACE wetland delineation manual (Environmental Laboratory 1987) is inundation or saturation to within 12 inches (25.4 centimeters) of the soil surface continuously for at least 5 percent of the growing season in most years. Soils with aquic conditions are those that have continuous or periodic saturation and where the presence of redoximorphic features indicates the reduction of ferrous iron and manganese in the soil. Sixty-four (64) percent of the Bishop Road site is underlain by soils that have been taxonomically described as having aquic moisture regimes (NRCS 1998). Another 32 percent of the project area is underlain by soils that are classified as histosols, which are organic

hydric soils. The remaining 4 percent of the site is underlain by soils that do not fall into either of these taxonomic groups but are classified as hydric. Restoration of the hydrologic function at the mitigation site will restore and improve the wetland soil conditions and allow further development of the hydric characteristics of the soils at the site.

Ninety-six (96) soil profiles were hand-augered and examined, and the data were recorded on USACE Data Forms for Wetland Determination. The data forms are presented in Appendix D, and the 96 soil profile locations are shown on Figure 6. A description of some characteristics of the soils series mapped within the Bishop Road site follow in Section 3.3.1, and additional information pertaining to each of the soil series is presented in Table 3. However, these soils have been modified by the recurring disturbance associated with silvicultural practices and a lack of normal hydrologic conditions caused by the maintained drainage ditches.

3.3.1 Taxonomic Classification (including series)

3.3.1.1 Acredale silt loam (AcA). Typic Endoaqualf.

The poorly drained soil occurs on broad, flat interstream areas and is listed as a Hydric A soil. The soil developed from loamy and silty marine and fluvial parent materials. The soil is characterized by moderate to high percentages of organic matter in the surface layer, extending to a depth of 7 inches (17.8 centimeters). The mapped series consists of 95 percent Acredale soil with similar inclusions and 5 percent contrasting inclusions. Examples of similar inclusions are intermingled, small areas that have a dark surface layer that is 7 to 10 inches (17.8 to 25.4 centimeters) thick. Contrasting inclusions include intermingled areas of Argent soils that have more clay in the subsoil than the Acredale soil, intermingled areas of Yonges soils that have a sandier subsoil than the Acredale soil, and the very poorly drained Brookman and Hydeland soils in depressions and low areas on interstream divides.

3.3.1.2 Argent loam (ArA). Typic Endoaqualf.

Argent loam is classified as a poorly drained soil occurring along broad, flat interstream areas. It is listed as a Hydric A soil and developed from clayey marine and fluvial parent materials. The soil is characterized by a 5-inch (12.7-centimeter) surface layer that is composed of moderate to high levels of organic matter, including partially decomposed leaves, roots, and twigs. The composition of the mapped series consists of 90 percent Argent soil with similar inclusions and 10 percent of contrasting

inclusions. Similar inclusions are intermingled, small areas that have a dark surface layer that is 7 to 10 inches (17.8 to 25.4 centimeters) thick. Contrasting inclusions consist of very poorly drained Brookman and Hydeland soils in depressions and in areas further from drainage ways, areas of intermingled Acredale and Yonges soils that have less clay in the subsoil than the Argent soil, and small areas that are ponded for brief periods.

3.3.1.3 Belhaven muck (BnA). Terric Medisaprist.

Belhaven muck is classified as a very poorly drained soil occurring along forested floodplains and the freshwater marshes of Lake Mattamuskeet. It is listed as a Hydric A soil and is characterized by dark reddish-brown muck throughout the upper 40 inches (101.6 centimeters) that is underlain by mucky sandy loam. The soil developed from marine and fluvial sediments. The composition of the mapped series is approximately 90 percent Belhaven muck and similar inclusions and 10 percent contrasting inclusions. The small areas of similar inclusions generally have a thin, mineral surface layer. The contrasting inclusions are intermingled areas of Dorovan soils that have more than 51 inches (129.5 centimeters) of muck, areas that have less than 16 inches (40.6 centimeters) of muck and are near the edge of the map unit, and small areas that are ponded for long or very long periods.

3.3.1.4 Bolling loamy fine sand (BoA). Aquic Hapludalf.

The soil is classified as a moderately well drained soil occurring on smooth to slightly rounded ridges along the upland edge of marshes and creeks bordering the Pungo River. It is characterized by having moderate to high levels of organic matter in the 6-inch (15.2-centimeter) surface layer and low levels in the subsurface layers. Bolling loamy fine sand is listed as a Hydric B soil. The soil developed out of loamy marine and fluvial parent material. Its composition is 80 percent Bolling soil and similar inclusions and 20 percent contrasting inclusions. The similar inclusions commonly associated with the map unit are not listed in the Soil Survey of Hyde County, North Carolina (Gagnon 1999). Examples of contrasting inclusions are poorly drained Yonges soils in depressions and drainage ways, intermingled areas of the somewhat poorly drained Fork soils in depressions and at the edge of the map unit, and very poorly drained Dorovan soils on floodplains near the edge of the map unit.

3.3.1.5 Brookman loam (BrA). Typic Umbraqualf.

Brookman loam is a very poorly drained soil occurring on broad, flat interstream areas, depressions, and the outer edge of pocosins. It is listed as a Hydric A soil. The soil is characterized by a seven-inch (17.8-centimeter) surface layer containing high to very high levels of organic matter. Its composition is 90 percent Brookman soil and similar inclusions and 10 percent contrasting inclusions. The similar inclusions are intermingled small areas with less than 8 inches (20.3 centimeters) of muck on the surface. The contrasting inclusions include intermingled areas of Hydeland soils that have a silty subsoil, Pettigrew soils with a muck surface layer that is 8 to 16 inches (20.3 to 40.6 centimeters) thick, poorly drained Argent soils, and small areas that are ponded for brief to very long periods.

3.3.1.6 Chapanoke silt loam (ChA). Aeric Endoaquult.

The soil is situated on smooth ridges on the upland edge of creeks and marshes, near the Pungo River and its tributaries. Chapanoke silt loam developed from marine and fluvial sediments and has a three-inch (7.6-centimeter) surface layer with moderate to high levels of organic matter. Chapanoke silt loam is listed as a Hydric B soil. It is classified as somewhat poorly drained and is composed of 85 percent Chapanoke soils and similar inclusions and 15 percent contrasting inclusions. Small areas of similar inclusions are those that have a dark surface layer that is 7 to 10 inches (17.8 to 25.4 centimeters) thick or those that are at the outer edge of the map unit and have slopes of more than 2 percent. Contrasting inclusions include poorly drained Acredale soils on the outer edge of the map unit, poorly drained Argent soils with a clayey subsoil on the outer edge of the map unit, and intermingled areas of Yeopim soils that are moderately well drained.

3.3.1.7 Fork fine sandy loam (FkA). Aeric Endoaquult.

Fork fine sandy loam is classified as a somewhat poorly drained soil occurring on low, smooth ridges along the Pungo River. The parent material of the Fork series is marine and fluvial sediments. It is listed as a Hydric B soil and has a surface layer that is 8 inches (20.3 centimeters) thick. Organic matter content is moderate to high in the surface layer and low in the subsoil. Its composition is 85 percent Fork soils and similar inclusions and 15 percent contrasting inclusions. The similar inclusions are intermingled, small areas that have a surface layer greater than 7 inches (17.8 centimeters) thick. The contrasting inclusions include the poorly drained Yonges and

the moderately well drained Bolling soils near the outer edge of the map unit, and intermingled areas of Chapanoke soils that have a silty subsoil.

3.3.1.8 Hydeland silt loam (HyA). Typic Umbraqualf.

The soil is situated on broad, flat interstream areas, depressions, and the outer edge of pocosins. It is classified as a very poorly drained soil and is listed as a Hydric A soil. The soil developed from loamy marine and fluvial sedimentary parent material. Hydeland silt loam is characterized by a 6-inch (15.2-centimeter) thick surface layer with high to very high levels of organic matter that extend into the upper portions of the subsoil. The composition of Hydeland silt loam is 90 percent Hydeland soil and similar inclusions and 10 percent contrasting inclusions. Similar inclusions are small, intermingled areas that have an organic surface layer less than 8 inches (20.3 centimeters) thick and small, intermingled areas that have a dark surface layer 7 to 10 inches (17.8 to 25.4 centimeters) thick. The contrasting inclusions include poorly drained Acredale soils that are on the outer edge of the map unit and have a surface layer less than 7 inches (17.8 centimeters) thick, Roper soils that are on the outer edge of the map unit and have a muck surface layer more than 8 inches (20.3 centimeters) thick, Brookman soils that are on the outer edge of the map unit and have more clay in the subsoil than the Hydeland soil, Weeksville soils that are on the outer edge of the map unit and have less clay in the subsoil than the Hydeland soil, and small areas that are ponded for very brief to long periods.

3.3.1.9 Longshoal mucky peat (LfA). Typic Medisaprist.

The very poorly drained soil is situated in brackish marshes adjacent to rivers, creeks, and the Pamlico Sound. The soil developed out of organic material over marine and fluvial sediments. Longshoal mucky peat is listed as a Hydric A soil and is characterized by dark reddish-brown mucky peat in the upper 12 inches (30.5 centimeters) and dark reddish-brown to very dark brown muck from 12 inches to 72 inches (30.5 to 182.9 centimeters) deep. Organic matter content is very high throughout the soil profile. It consists of 90 percent Longshoal soil and similar inclusions and 10 percent contrasting inclusions. The similar inclusions are small areas that have a mineral surface layer less than 16 inches (40.6 centimeters) thick and are near the edge of the sound and bays. Contrasting inclusions are Delway soils that are on the outer edge of the map unit and have a muck layer 16 to 51 inches (14.6 to 129.5 centimeters) thick and intermingled, small areas that have more than 22 inches (55.9 centimeters) of mucky peat on the surface.

3.3.1.10 Stockade mucky sandy loam (StA). Typic Umbraqualf.

The soil is classified as a very poorly drained soil occurring on broad, flat interstream areas and depressions. The parent material of the soil is marine and fluvial sediment. Stockade mucky sandy loam is listed as a Hydric A soil. Organic matter content is high to very high in the 6-inch-thick (15.2-centimeter-thick) surface layer and in the upper portions of the subsoil. Its composition is 90 percent Stockade and similar inclusions and 10 percent contrasting inclusions. The similar inclusions consist of small, intermingled areas that have less than 8 inches (20.3 centimeters) of muck in the surface layer. Contrasting inclusions include Newholland soils near the outer edge of the map unit that have a sandier subsoil; Hydeland soils near the outer edge of the map unit that have a siltier subsoil; Wasda, Conaby, Pettigrew, and Roper soils near the outer edge of the map unit that have a muck surface layer more than 8 inches (20.3 centimeters) thick; Yonges soils near the outer edge of the map unit that have a dark surface layer less than 7 inches (17.8 centimeters) thick; intermingled, small areas of Portsmouth soils that have less than 35 inches (88.9 centimeters) of loamy material over sand; and small, intermingled areas that are ponded for brief periods.

3.3.1.11 Yeopim silt loam (YeA). Aquic Hapludult.

The moderately well drained soil occurs along the upland edge of creeks and marshes along the Pungo River and its tributaries and is listed as a Hydric B soil. The soil developed from marine and fluvial sediments. Yeopim silt loam has a silt loam subsoil and is characterized by moderate to high levels of organic matter in the thin surface layer and low levels thereof in the underlying material. The mapped series is composed of 80 percent Yeopim soil and similar inclusions and 20 percent contrasting inclusions. The similar inclusions are small areas that have slopes of more than 3 percent and small areas that have a clayey subsoil. The contrasting inclusions associated with Yeopim silt loam are poorly drained Acredale soils in depressions and drainage ways and somewhat poorly drained Chapanoke soils in depressions and at the edge of the map unit.

3.3.1.12 Yonges silt loam (YoA). Typic Endoaqualf.

Yonges silt loam occurs on broad, flat interstream areas and depressions. It is classified as poorly drained and is listed as a Hydric A soil. The soil developed from marine and fluvial sedimentary parent material. The surface layer is 7 inches (17.8 centimeters) thick and contains moderate to high levels of organic matter. The composition of the Yonges silt loam map unit is 85 percent Yonges soil and similar

inclusions and 15 percent contrasting inclusions. The similar inclusions include small, intermingled areas that have a surface layer that is 7 to 10 inches (17.8 to 25.4 centimeters) thick. The contrasting inclusions are Stockade soils near the outer edge of the map unit and with a surface layer more than 10 inches (25.4 centimeters) thick, Acredale soils near the outer edge of the map unit and with more silt in the subsoil, Argent soils near the outer edge of the map unit and with more clay in the subsoil, and somewhat poorly drained Fork soils near the outer edge of the map unit.

3.4 Plant Community Characterization

This section describes the existing vegetation and associated wildlife that occur within the project area. The proposed mitigation area is composed of different vegetative communities based on current and historic land use, topography, soils, hydrology, and disturbance. Scientific nomenclature and common names (when applicable) are provided for each plant and animal species listed. Subsequent references to the same organism include only the common name.

Community boundaries within the site are generally well defined due to long-term timber management. Distribution and composition of these communities reflect variations in micro-topography, soils, hydrology, disturbance, and past and present land uses. Four plant communities are present at the Bishop Road site: tidal freshwater marsh, pine flatwood, timber cutover, and riverine forested wetland. Subcategories of the tidal freshwater marsh and pine flatwood communities have been generated to further define the onsite vegetative communities. The plant communities present onsite are depicted on Figure 7, and their areas of cover are provided in Table 4.

3.4.1 Tidal Freshwater Marsh

Approximately 194.2 acres (78.6 hectares) of tidal freshwater marsh are present onsite. Four tidal freshwater marsh subcategories consisting of marsh, marsh pond, marsh sloughs, and the Weyerhaeuser mitigation site are present adjacent to Tarklin Creek, Scranton Creek, and the Pungo River. All tidal freshwater marsh areas are jurisdictional wetlands.

The marsh area is approximately 176.0 acres (71.2 hectares) in size and is bound by Tarklin Creek to the northwest, Scranton Creek to the south, and the Pungo River to the west. In the areas adjacent to the existing pine stand, the transition from timber to marsh is abrupt. The dominant vegetation within the marsh area is needlerush (*Juncus*)

roemerianus), and sawgrass (*Cladium jamaicense*) and cordgrasses (*Spartina cynosuroides* and *S. patens*) are the co dominant species.

An approximately 2.2-acre (0.9-hectare) marsh pond is in the southeastern corner of the site on the west side of Bishop Road, near the intersection with US 264. The dominant vegetation of the marsh pond includes water lily (*Nymphaea* sp.), pennywort (*Obolaria virginica*), cattail (*Typha latifolia*), sawgrass, rushes (*Juncus* sp.), broomsedge (*Andropogon virgatum*), loblolly bay (*Gordonia lasianthus*), and chokeberry (*Aronia arbutifolia*).

Marsh sloughs are throughout the site adjacent to marsh communities. The marsh sloughs comprise approximately 11.4 acres (4.6 hectares) of the site. Several onsite roadside ditches and offsite agricultural and roadside ditches discharge into the marsh sloughs. Herbaceous species such as sawgrass, cattail, cordgrass, and needlerush comprise the dominant vegetation along the marsh sloughs. In areas closest to Scranton and Tarklin Creeks, sawgrass, needlerush, and cordgrass represent approximately 90 percent of the herbaceous cover. As the sloughs extend inland, the vegetation transitions to include herbaceous cover of cattail in addition to the species previously noted.

Weyerhaeuser received a notice of violation from the North Carolina Department of Environment and Natural Resources (NCDENR) Division of Coastal Management (DCM) for land clearing activities that occurred in August 2000. According to a November 1, 2000 letter sent to Weyerhaeuser from the DCM, site preparation for reforestation activities impacted approximately 5 acres (2.0 hectares) of jurisdictional coastal wetlands. Because of this violation, Weyerhaeuser was required to provide 5.0 acres (2.0 hectares) of onsite marsh restoration. The 5.0-acre (2.0-hectare) tidal freshwater marsh mitigation site was completed prior to the sale of the property to NCDOT in the spring of 2002 and is excluded from the NCEEP mitigation site.

3.4.2 Pine Flatwood

Pine plantations normally have various aged stands of pine maintained for standard timber rotation. The pine stands historically maintained by Weyerhaeuser at the Bishop Road site and now considered pine flatwoods consist primarily of loblolly pines ranging from approximately 5 years old to 30 years old and cover approximately 399.6 acres (161.8 hectares). The youngest stands are composed of 5-year-old saplings, cover approximately 45.3 acres (18.3 hectares), and a majority of the southeastern portion of the site. Of the 399.6 acres (161.8 hectares), 92.4 acres (37.4 hectares) were

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determined to be non-jurisdictional areas, and 307.2 acres (124.4 hectares) were determined to be jurisdictional wetlands. The average height of the pines in the 5-year-old stand is 7 feet (2.1 meters), allowing for a dense growth of successional species to continue to dominate this area. The early successional species include herbaceous and woody vegetation such as greenbrier (*Smilax* sp.), broomsedge, yellow jessamine (*Gelsemium sempervirens*), wax myrtle (*Myrica cerifera*), silverling (*Baccharis halimifolia*), chokeberry, sweet gum (*Liquidambar styraciflua*), red maple (*Acer rubrum*), and titi (*Cyrilla racemiflora*). Species such as spike-rush (*Eleocharis* sp.) and royal fern (*Osmundo regalis*) occur in depressions in the inter-bed areas.

The stands of 7 to 10-year-old pines are located along East Muriel Road, the southern corner of the West Muriel Road and Bishop Road intersection, the northwestern corner of the Weyerhaeuser Service Road intersection with US 264, and a majority of the southwestern and southern portion of the site. The stands cover approximately 239.9 acres (97.1 hectares), and 184.5 acres (74.7 hectares) were determined to be jurisdictional wetlands. The average height of the pines in the 7 to 10-year-old stand is approximately 10 feet (3 meters), which is resulting in a thinning of the successional species noted within the 5-year-old stand. Vegetative species other than loblolly pine noted within this community include greenbrier, yellow jessamine, blackberry (*Rubus argutus*), wax myrtle, sweet gum, red maple, titi, and spike-rush.

A stand of 15-year-old pines is within the northwestern portion of the site, between West Muriel Road and the convergence of Tarklin Creek and the Pungo River. The stand covers approximately 30.2 acres (12.2 hectares), and all but 0.2 acre (0.1 hectare) of the stand was determined to be a jurisdictional wetland. The area has a sparse understory of woody vines and shrubby hardwoods that include greenbrier, yellow jessamine, giant cane (*Arundinaria gigantea*), red bay (*Persea borbonia*), wax myrtle, sweet bay (*Magnolia virginiana*), red maple, chokeberry, sweet gum, and bracken fern (*Pteridium aquilinum*).

Stands of approximately 30-year-old pines are on the northwest side of the intersection of West Muriel Road and Bishop Road, and in the southwest corner of the US 264 and Weyerhaeuser Service Road intersection. These stands cover a total of approximately 84.2 acres (34.1 hectares). Of the stands, 58.2 acres (23.6 hectares) were determined to be jurisdictional wetlands, and 26.0 acres (10.5 hectares) were determined to be non-jurisdictional areas. The stands exhibit a sparse understory dominated by woody vines and shrubby trees. The full canopy provides extensive shading, and a thick layer of pine needles may prevent most herbaceous vegetation from growing in this stand. Understory species included sphagnum moss (*Sphagnum* sp.), spleenwort (*Asplenium*

sp.), bracken fern, greenbrier, yellow jessamine, giant cane, red bay, wax myrtle, sweet bay, red maple, chokeberry, and sweet gum.

3.4.3 Timber Cutover

Weyerhaeuser clearcut approximately 33.1 acres (13.4 hectares) of the 30-year-old pine stand previously located east of the curve in West Muriel Road before NCDOT purchased the property in the spring of 2002. The timber cutover area is dominated by herbaceous vegetation and is in an early successional state. Of the 33.1 acres (13.4 hectares), 30.4 acres (12.3 hectares) were determined to be jurisdictional wetlands, and 2.7 acres (1.1 hectares) were determined to be non-jurisdictional areas.

3.4.4 Riverine Forested Wetland

A riverine forested wetland associated with the headwaters of Tarklin Creek comprises approximately 45.3 acres (18.3 hectares) of the Bishop Road site. All of this plant community is considered jurisdictional wetland. The riverine forested wetland abuts the northeastern most property boundary and is accessed by Weyerhaeuser Service Road. The dominant canopy vegetation of the riverine forested wetland is bald cypress (*Taxodium distichum*), loblolly pine, sweet gum, water oak (*Quercus nigra*), and red maple. The understory of woody shrubs and vines includes sweet gum, red maple, silver maple (*A. saccharinum*), wax myrtle, tag alder (*Alnus serrulata*), greenbrier, poison ivy (*Toxicodendron radicans*), and royal fern.

3.4.5 Biotic Resources

3.4.5.1 Wildlife and Wildlife Habitat

A combination of many biotic and abiotic factors determines the inherent productivity of a forested wetland site and its capacity to support a community of wildlife species. The abundance of wildlife species varies with the temporal context of factors affecting populations. Controlling or limiting factors will have different short-term (months, seasons) and long-term (years, decades) effects. Historical events continue to influence present-day wildlife populations and the range of practicable management options.

Principal abiotic factors in forested wetlands are soil, water, weather, topography, and disturbance. Soils have the major influence on the inherent fertility of a site and reflect other considerations such as the predominant historical role of climate and hydrology. Abiotic factors are an important determinant of a site's ability to function as wildlife

habitat. These factors have both direct and indirect effects on wildlife populations. Direct effects include mortality caused by natural events such as fires, storms, drought, unusual temperatures, and flooding. Indirect effects include adverse impacts on reproduction and survival.

An important stand-scale biotic feature affecting wildlife abundance and diversity in forested wetlands is the structural diversity of vegetation in vertical and horizontal dimensions. Increased structural diversity promotes more opportunities to forage, nest, and escape from predators.

Species observed directly, or by evidence of scat or tracks, are denoted by an asterisk. Many birds utilize open habitat areas such as marsh environments and timber cutover because the diverse vegetation provides foraging and breeding sites. Commonly observed avian species may include red-winged blackbird* (Agelaius phoeniceus), Eastern bluebird* (Sialia sialis), marsh wren* (Cistothorus palustris), blue jay (Cyanocitta cristata), northern cardinal* (Cardinalis cardinalis), and fish crow* (Corvus ossifragus). Waterfowl can be found in open water habitats such as the onsite marsh pond. Species likely to occur within the site include mallard (Anas platythynchos), black duck (A. rubripes), merganser (Mergus sp.), and Canada goose* (Branta canadensis). Larger birds of prey often nest in large trees adjacent to the open land and water of marshes. Large birds of prey anticipated to occur within the site include osprey (Pandion haliaetus), red-tail hawk* (Buteo jamaicensis), and bald eagle*. The shrubby and forested portions of the Bishop Road site are likely to support woodland birds such as gray catbird* (Dumetella carolinensis), wood thrush* (Hylocichla mustelina), blue jay, Carolina chickadee* (Parus carolinensis), cardinal*, red-bellied woodpecker (Melanerpes carolinus), northern flicker* (Colaptes auratus), pileated woodpecker* (Dryocopus pileatus), mourning dove* (Zenaida macroura), downy woodpecker* (Picoides pubescens), and boat-tailed grackle* (Quiscalus major).

Marsh rabbits* (*Sylvilagus palustris*) and/or eastern cottontails* (*S. floridanus*), raccoon (*Procyon lotor*), and white-tailed deer* (*Odocoileus virginianus*) may be the most common mammals found in this area. Less common mammals in the area may include marsh rice rat (*Oryzomys palustris*), cotton mouse (*Peromyscus gossypinus*), Eastern gray squirrel (*Sciurus carolinensis*), muskrat (*Ondatra zibethicus*), mink (*Mustela vison*), Virginia opossum (*Didelphis virginiana*), red fox (*Vulpes vulpes*), river otter* (*Lutra canadensis*) and black bear* (*Ursus americanus*). Reptiles expected to occur at the site include common kingsnake (*Lampropeltis getula*), red-bellied water snake* (*Nerodia erthrogaster*), black rat snake* (*Elaphe obsoleta obsoleta*) and

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cottonmouth (*Agkistrodon piscivorus*). Although amphibians were not observed at the site, southern toad (*Bufo terrestris*), bullfrog (*Rana catesbeiana*), green frog (*R. clamitans*), Eastern box turtle (*Terrapene carolina carolina*) and Eastern mud turtle (*Kinosternon subrubrum*) are expected to inhabit the area based on the habitat available. Fire ants* (*Solenopsis* sp.) were observed within the Bishop Road site.

Reference Wetlands

4. Reference Wetlands

A reference wetland site optimally is a functioning climax wetland community, which is near the project area and with characteristics similar to those that are to be restored at the mitigation site. The reference site characteristics should include similar soils, vegetation, and hydrology as the proposed restoration site. Unfortunately, large portions of the coastal wet pine flatwood areas in Hyde County have been impacted by silviculture and agriculture during the last century. Nearby undisturbed habitats similar to the Bishop Road site, which could be used as reference wetlands, are not available.

In order to design the mitigation site for a climax community representing the natural steady state for a non-riverine pine flatwood community, the vegetative species found in common pine flatwood stands was researched. In addition, a property exhibiting mature vegetation situated opposite US 264 near the project site was used as a potential reference site. This property is owned and managed by Mr. Bruce Cameron. The site was historically covered with planted pine similar to the Bishop Road site. However, silvicultural management was converted to wildlife and vegetation management during the last 50 to 60 years. The absence of thinning, select cutting, and clear cutting has allowed the community to climax with pine as a co-dominant species rather than a dominant species.

The existing onsite marsh areas were used as reference wetlands for the two restoration areas along Tarklin Creek Road, and the restoration area along Bishop Road east of the existing open water marsh pond. The existing marsh pond area adjacent to Bishop Road near the intersection with US 264 and marsh sloughs along Scranton and Tarklin Creeks was used as reference wetlands for the marsh pond restoration area, and the marsh sloughs restoration areas, respectively (Figure 8).

The existing riverine forested wetland community in the northeast corner of the site was used as a reference wetland for the riverine forested wetland restoration area along the Weyerhaeuser Service Road. The existing riverine forested wetland community is north of the East Muriel Road terminus adjacent to the Tarklin Creek headwaters.

4.1 Hydrologic Characterization and Gauge Data Summary

Gauge data is not yet available for the reference wetland locations. Groundwater gauges were installed within the Bishop Road site in March 2006 to allow monitoring of groundwater levels within the reference wetlands and the areas to be restored to jurisdictional wetlands both before and after mitigation construction activities have

Reference Wetlands

been conducted. The gauges are scheduled to be monitored throughout 2006 in order to establish a groundwater level baseline for comparison to post-mitigation groundwater data that will be collected by the gauges installed within the proposed restoration areas.

4.2 Soil Characterization

4.2.1 Taxonomic Classification (including series)

Soils underlying Mr. Cameron's property include Acredale silt loam, Argent loam, Brookman loam, Chapanoke silt loam, Hydeland silt loam, Stockade mucky sandy loam, and Yonges silt loam. All of these soils occur within the Bishop Road site.

The existing onsite marsh pond is mapped in the soil survey (Gagnon 1999) as open water and Argent loam. The existing marsh sloughs are underlain by Argent loam, Belhaven muck, Bolling loamy fine sand, Chapanoke silt loam, Fork fine sandy loam, Hydeland silt loam, Longshoal mucky peat, and Yonges silt loam.

The existing riverine forested wetland community is underlain by Acredale silt loam, Belhaven muck, Longshoal mucky peat, Stockade mucky sandy loam, and Yonges silt loam. The riverine forested reference wetland is also located fully within the Bishop Road site. All soils listed in this section are described in detail in Section 3.3.

4.2.2 Profile Description

Profile descriptions for all soils mapped within reference wetland areas are included in Section 3.3.1.

4.3 Plant Community Characterization

4.3.1 Community Descriptions - All Strata

During a site survey on Mr. Cameron's property in August 2001, sample plot locations were evaluated within the non-riverine forested wetland and within the tidal freshwater marsh adjacent to Scranton Creek. Field investigators noted pond pine in addition to many different species of hardwoods throughout the vegetative stratum, including willow oak (*Q. phellos*), swamp chestnut oak (*Q. michauxii*), red bay, sweet bay, sweet gum, and black gum (*Nyssa sylvatica*).

Reference Wetlands

Additional surveys of hydrophytic vegetation found in the successional communities at the Bishop Road site were also used as a reference for the type of herbaceous plants, woody vines, and shrubs that will likely occur on the mitigation site through natural seeding. These species are mainly pioneer species that are expected to quickly invade the area once clearing has begun.

Within the existing marsh pond and sloughs, herbaceous species, such as sawgrass, cattail, needlerush, and cordgrass, comprise the dominant vegetation, with woody shrubs, such as marsh mallow (*Hibiscus moscheutos*), wax myrtle, loblolly bay, chokeberry, and silverling, occurring sporadically along the inland perimeter of the marsh.

The existing riverine forested wetland will be preserved and is expected to provide a natural seed source for regeneration that will supplement the vegetation planted in the restoration areas. Dominant canopy vegetation within this portion of the site includes bald cypress, loblolly pine, sweet gum, water oak, and red maple. The understory, vine, and groundcover strata within this community are dominated by sweet gum, red maple, silver maple, wax myrtle, tag alder, greenbrier, poison ivy, and royal fern.

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5. Project Site Restoration Plan

5.1 Restoration Project Goals and Objectives

Restoration and preservation activities can be accomplished simultaneously to expedite both time and labor considerations. A conceptual wetland mitigation design is provided in Figure 8. Table 5 provides a summary of proposed communities, mitigation types, existing vegetation communities, and estimated acreages.

The proposed tidal freshwater marsh mitigation consists of restoring non-jurisdictional areas impacted by construction of roads and timbering operations to tidal freshwater marsh communities, and preserving the existing jurisdictional marsh pond, marsh sloughs, and marsh areas. The proposed non-riverine pine flatwood mitigation consists of restoring existing non-jurisdictional pine flatwood, timber cutover areas, and roadbeds to non-riverine pine flatwood communities, and preserving existing jurisdictional pine flatwood and timber cutover areas. The proposed riverine forested wetland mitigation consists of restoring a non-jurisdictional area impacted by construction of the Weyerhaeuser Service Road to a riverine forested wetland, and preserving existing jurisdictional riverine forested wetland areas.

Filling the on-site drainage ditches and removing the earthen roads will reduce the amount of suspended solids leaving the site via the ditches. Sediment from the ditches and earthen roads is currently carried by water in the ditches to adjacent bodies of water during storm events. Filling the ditches will eliminate the concentrated flow by allowing the majority of precipitation to infiltrate and not run off the site through the ditches.

Replacing the pine plantation with a natural plant community and restoring wetland characteristics within the site will create more diverse wildlife habitat on-site than currently exists. The pine plantations are periodically maintained to facilitate the growth of loblolly pines by eliminating competing understory trees. This maintenance reduces the vegetation diversity on the site and temporarily impacts wildlife. The periodic harvesting of the pine will also be eliminated, thereby further reducing temporary impacts to plant communities and associated wildlife.

5.1.1 Target Wetland Communities/ Buffer Communities

Based on the data collected from reference vegetation locations and Classification of the Natural Communities of North Carolina, A Third Approximation (Schafale and

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Weakley 1990), communities likely to occur naturally within the Bishop Road site were determined. Slight variations in topography, as well as hydrology and soil types, influence the plant species and community types that will occur in a coastal wetland. Considering these variables, as well as existing conditions at the site, three mitigation communities are proposed: tidal freshwater marsh, non-riverine pine flatwood, and riverine forested wetland.

5.2 Hydrologic Trespass

The filling of ditches and removal of road beds may result in hydrologic trespass in one location. A property corner west of the intersection of Bishop Road and West Muriel Road is located immediately south of one of the drainage ditches. The property is currently in pine plantation. In order to reduce the potential for hydraulic trespass, a 100-foot (30-meter) section of the ditch (50 feet [15 meters] east and west of the property corner) will not be filled. A new ditch will be constructed from the existing ditch, extending to the north across the existing roadbed. This ditch will continue to drain the adjacent property.

Hydraulic trespass is not expected to be an issue for the remaining adjacent residences, agricultural fields, and privately owned pine stands along Bishop Road. Continued maintenance of the existing drainage ditches on adjacent properties is anticipated to provide sufficient drainage for these areas.

5.3 Hydrologic Modifications

5.3.1 Narrative of Modifications

Wetland functions are self-sustaining properties that exist in the natural environment and provide a perceived benefit, or value, to humankind. The wetland functions that provide the greatest values include flood water retention, erosion and sediment control, wildlife habitat, water supply and aquifer recharge, pollution control by nutrient reduction and removal, and recreation.

The most important factor in wetland mitigation design is the hydrologic function of the site. When proper hydrologic function occurs, hydric soil development and growth of hydrophytic vegetation can occur (Mitsch and Gosselink 2000). Hydrologic conditions at the Bishop Road site depend on the various inputs of climate and seasonal precipitation; overland flooding from stormwater runoff, tides and storm surges; surface water retention; and depth to groundwater. Removal of topographic constraints

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to hydrologic functions across the site, such as drainage ditches and bedding elevations, will allow reestablishment of the natural hydrology.

5.3.2 Scaled Schematic of Modifications

See design sheets (Appendix E) for proposed modifications.

5.4 Soil Restoration

5.4.1 Narrative and Soil Preparation and Amendment

The roadbeds for Bishop Road, Silverthorne Road, East and West Muriel Roads, Tarklin Creek Road, and the Weyerhaeuser Service Road were constructed using the soil excavated for the roadside ditches as fill material. The average cross-section of the Weyerhaeuser-maintained roads is approximately 60 feet (18.3 meters), measured from the outside edges of the adjacent ditches. The 60-foot-wide (18.3-meter-wide) corridor centered on these roadbeds (30 feet [9.1 meters] from the roadway centerline) will be excavated in the areas of proposed restoration. Existing vegetation within the corridor will be removed before the excavation work commences. The fill material excavated from the roadbeds and spoil pile berms, when present, will be used to fill the roadside drainage ditches. The roadway areas will be graded to match adjacent natural elevations and ripped to eliminate compaction. Groundwater gauge data will be required to confirm the wetland hydrology restoration potential.

Within the restoration areas with bedding rows and skidder tracks, the rows will be eliminated by pushing the bedded materials into the furrows adjacent to the bedding rows. These areas will be disked to break up the plow pan and reduce soil compaction that may have resulted from historic management practices.

5.5 Natural Plant Community Restoration

5.5.1 Narrative and Plant Community Restoration

The presence of vegetation provides several important functions within a wetland. These functions include water storage, sediment retention, nutrient removal, and wildlife habitat. The various layers of vegetation, from herbaceous to woody canopy, provide benefits to multiple communities of wildlife.

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As previously stated, the 684.8 acres (277.2 hectares) of proposed mitigation do not include the 5.0-acre (2.0-hectare) Weyerhaeuser mitigation site, 0.9 acre (0.4 hectare) of Silverthorne Road that has recently been extended from Bishop Road to US 264, and 0.7 acre (0.3 hectare) of Silverthorne Road to be retained west of the intersection of Bishop Road. The proposed mitigation estimates are conservatively based and do not reflect any changes or modifications that may occur from site conditions during construction.

5.5.1.1 Natural Communities Proposed for Wetland Restoration

Three communities are proposed for restoration at the Bishop Road mitigation site: tidal freshwater marsh, non-riverine pine flatwoods, and riverine forested wetlands. Some of the existing ditches that carry surface water to Tarklin Creek, Scranton Creek, and the Pungo River will be filled as a part of the restoration plan. The existing vegetation within the non-jurisdictional areas of the site will be removed. Elevations will be modified to either match the adjacent jurisdictional areas or to return it to its natural state. The existing ditches within the Bishop Road site that provide hydrologic connectivity between the offsite ditches and Tarklin Creek, Scranton Creek, and the Pungo River will be retained in order to prevent hydraulic trespass to the adjacent properties (Figure 4). The proposed restoration areas are shown in Figure 9 and are listed in Table 5.

5.5.1.1.1 Tidal Freshwater Marsh

Tidal freshwater marshes typically occur along the margins of estuaries and along drowned rivers and creeks that experience tidal flooding. Flooding may not occur regularly, depending on landscape position. Moderate to high nutrient levels from an accumulation of organic matter can support varied and dense herbaceous vegetation. Some seasonal succession may occur, with a dominance of fleshy broad-leaved plants such as pennywort and pickerelweed transitioning to perennials and graminoids such as cordgrass, sawgrass, and wild rice (*Zizania aquatica*) (Schafale and Weakley 1990). A shrub and tree canopy is absent. These marshes grade into various wetland and upland communities, depending on topography and soil type. Most of these marsh areas have organic soils, with some mineral soils developing where sediments have accumulated from overland erosion of adjacent areas.

The waters of Scranton Creek, Tarklin Creek, and the Pungo River abut the Bishop Road site, are influenced by wind driven tides, and are expected to have little saltwater influence (Geise, et al. 1979). Soil maps of the existing outer marsh areas along the

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perimeter of the mitigation site show an organic Longshoal (LfA) mucky peat. This soil transitions to a mineral Fork (FkA) fine sandy loam or Chapanoke (ChA) silt loam in the inner marsh areas along the marsh sloughs connected to the creeks. The Longshoal soil units are expected to have saturated conditions, with water at or near the soil surface throughout the year. Dominant vegetation in these areas is perennial and consists of grass species such as those described by Schafale and Weakley (1990). The inner marsh soils, Fork and Chapanoke, are expected to have saturated conditions during most of the year due to poor drainage characteristics.

5.5.1.1.2 Non-Riverine Pine Flatwood

Since few undisturbed areas of natural communities exist near the Bishop Road site, the non-riverine areas are best represented by the two systems described by Schafale and Weakley (1990) as a wet pine flatwood and a non-riverine wet hardwood forest, presented below. For this mitigation site, the combination of these systems proposed for preservation and restoration, respectively, at the Bishop Road site is referred to as a non-riverine pine flatwood.

Wet pine flatwood communities occur on flat, wet Coastal Plain mineral soils, are seasonally saturated by high groundwater levels and precipitation, and support a dominant canopy of loblolly or pond pine. Canopy openings provide areas for shrubby hardwood species such as inkberry (*Ilex glabra*), red bay, and staggerbush (*Lyonia mariana*) and herbaceous species such as bracken fern and broomsedge. Wet pine flatwoods occur mostly in the outer and middle Coastal Plain on sites that are drier than pine savannas.

Non-riverine wet hardwood forests are found in the outer parts of embayed sections of the Coastal Plain along poorly drained interstream flats (Schafale and Weakley 1990). The fine-textured mineral soils include poorly drained loams or clays that are seasonally saturated. Precipitation, high water tables, and overland flow are the primary causes of saturation. A combination of bottomland oak or mixed hardwood vegetation located on interstream flats distinguishes this community from other swamp forests or mixed hardwood forests. Typical canopy species include swamp chestnut oak, laurel oak (*Q. laurifolia*), cherrybark oak (*Q. pagodaefolia*), tulip poplar (*Liriodendron tulipifera*), red maple, and black gum. Understory shrubs and woody vines include pawpaw (*Asimina triloba*), ironwood (*Carpinus caroliniana*), spicebush (*Lindera benzoin*), redbay, wax myrtle, poison ivy, and muscadine (*Vitis* sp.).

5.5.1.1.3 Riverine Forested Wetland

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The natural riverine communities associated with the tidally influenced creeks of the Coastal Plain are best represented by Schafale and Weakley's (1990) cypress-gum swamp (blackwater type). These swamps occur along the sloughs, swales, and floodplains of blackwater rivers and creeks in the Coastal Plain. The seasonally to semi-permanently flooded soils may be organic medisaprists or mineral soils with an aquic moisture regime. These riverine areas are characterized by their highly variable flow regimes, with short periods of flooding and periods of low flow. Undisturbed communities are dominated by a canopy of swamp tupelo (*Nyssa biflora*) and bald cypress, and have a dense shrub understory of red maple, redbay, titi, and fetterbush (*Lyonia* sp.). Scattered canopy openings provide habitat for herbaceous species such as sedges, rushes, and pennywort.

The hydrology of the headwater area is expected to be saturated throughout the year, with periodic flooding due to tidal influences, precipitation, and overland flow. Since few natural undisturbed areas exist at the Bishop Road site, the vegetation in this community is expected to be a result of impacts from timber management. The canopy is dominated by bald cypress and loblolly pine, with a shrub layer of sweet gum, red maple, tag alder, Southern red cedar (*Juniperus silicicola*), and wax myrtle. Woody vines and herbaceous species include poison ivy, greenbrier, and royal fern. Natural succession to a climax wetland forest similar to the cypress-gum swamp (blackwater type) community described above is expected to occur over time.

5.5.1.2 Restoration Methodology

5.5.1.2.1 Methods for Restoring Tidal Freshwater Marsh Wetlands

The restoration plan includes approximately 3.3 acres (1.3 hectares) of tidal freshwater marsh restoration. Four non-jurisdictional areas of existing roadbeds will be restored to tidal freshwater marsh after removal of the roadbeds and filling of roadside ditches. Excavation equipment will be used to remove the existing vegetation and reduce the elevation of the roadbeds to match the adjacent jurisdictional areas. The four areas comprise approximately 1.1 acres (0.4 hectare). Approximately 2.2 acres (0.9 hectare) of 5-year-old pine flatwood will also be restored to tidal freshwater marsh.

Site Preparation

One marsh slough restoration area is near the western terminus of Silverthorne Road. The existing roadbed transects a marsh slough that extends from Scranton Creek to north of Silverthorne Road. The removal of fill material from approximately 0.1 acre

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(0.04 hectare) of the roadbed is anticipated to restore the hydrology of the marsh slough.

Two marsh restoration areas are in the northern portion of the site along Tarklin Creek Road where a bridge previously crossed Tarklin Creek. Material from approximately 0.7 acre (0.3 hectare) of roadbed will be removed in these areas and used to fill the adjacent drainage ditches. Removal of the roadbed material is anticipated to restore tidal freshwater marsh habitat and improve the hydrologic connection to the marsh communities east of Tarklin Creek Road.

A marsh restoration area is in the southeastern most portion of the site along Bishop Road. Material from approximately 0.3 acre (0.1 hectare) of roadbed will be removed and used to fill the adjacent drainage ditches. Removal of the roadbed material and filling of the roadside ditches is anticipated to restore tidal freshwater marsh habitat and provide a hydrologic connection to the adjacent existing marsh pond.

One marsh pond restoration area is in the southeastern most portion of the site west of Bishop Road and abuts the northern edge of the existing marsh pond area. The marsh pond restoration area presently consists of approximately 2.2 acres (0.9 hectare) of 5-year-old pine flatwood that is bedded and planted with loblolly pines. Excavation equipment will be used to remove the existing vegetation, eliminate the existing bedding rows by pushing the bedded materials into the furrows between the rows, and to match the existing adjacent marsh pond elevation.

Soils

The dominant soils in these proposed restoration areas were identified as either an Argent loam or a Longshoal mucky peat. These soils are both listed on the state hydric soils list as Hydric A soils. Figure 5 shows the soil units mapped at the Bishop Road site. The Argent soil unit is a poorly drained soil taxonomically identified as an Endoaqualf soil, meaning it is classified as a endoaquic soil. Endoaquic are soils that are in such a landscape position that the regional water table is at or near the soil surface for extended periods of time. The presence of an aquic condition is indicated by redoximorphic features within the soil profile, such as iron or manganese concretions or oxidized root channels. The Longshoal soil unit is a very poorly drained soil that is taxonomically identified as a Medisaprist, which is a saprist soil located in a temperate climate. Saprist soils are organic soils in which the organic material has reached the most decomposed stage (Brady and Weil 2000).

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Hydrology

The tidal freshwater marsh restoration is anticipated to be provided by removing roadbed fill material, filling roadside drainage ditches, and eliminating the existing bedding rows in the pine flatwood. The cut and fill associated with the marsh slough area near the western terminus of Silverthorne Road and the marsh area in the northern portion of the site will provide hydrologic connections between the existing marsh areas. Excavation of the marsh pond area north of the existing marsh pond will increase the acreage of onsite marsh ponds from approximately 2.2 acres (0.9 hectare) to approximately 4.4 acres (1.8 hectares). Periodic wind driven tidal influence will provide additional hydrologic input of surface water to these portions of the site (Gagnon 1999).

Vegetation

Species to be planted within the tidal freshwater marsh restoration areas include herbaceous vegetation such as sawgrass, needlerush, and cordgrass (Table 6). Plantings will be approved by NCEEP, with an estimated 3.3 acres (1.3 hectares) being planted for tidal freshwater marsh restoration. Natural seeding from a variety of native perennial herbaceous plants and successional shrub species that occur in the project area is expected to colonize the restored tidal freshwater marsh areas. These species are likely to include a variety of sedges (OBL to FACW) and rushes (OBL to FACW) within the marsh, chokeberry (FACW), wax myrtle (FAC), and silverling (FAC) along the boundaries. Some of the woody species have rapid growth rates as compared to the herbaceous species that will be planted. The fast-growing woody species will provide shading for the installed plantings while they become established at the site. Recommended species for installation in the tidal freshwater marsh restoration areas are included in Table 6. Figure 9 shows the locations of the proposed tidal freshwater marsh restoration areas.

Spacing of installed plants will depend on species habit for rate of growth and spreading as well as existing conditions at the site. The marsh grasses will be planted on 3-foot (0.9-meter) centers. Planting density will be 4,840 plants per acre.

5.5.1.2.2 Methods for Restoring Non-Riverine Pine Flatwood Wetlands

The non-riverine pine flatwood restoration areas include approximately 109.3 acres (44.2 hectares) of non-jurisdictional areas within the existing pine flatwood, timber cutover, and roadbed areas throughout the site. The 5-year-old pine flatwood in the

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southeastern portion of the site along Bishop Road will provide approximately 8.0 acres (3.2 hectares) of restoration to this community. The non-riverine pine flatwood restoration areas consist of approximately 56.1 acres (22.7 hectares) of existing 10-year-old pine flatwood along East Muriel Road and south of West Muriel Road adjacent to Bishop Road, north of the Weyerhaeuser Service Road, and north, south, and west of Silverthorne Road. Approximately 26.0 acres (10.5 hectares) of existing 30-year old pine flatwood north and south of the Weyerhaeuser Service Road, north and west of West Muriel Road, and east of Tarklin Creek Road will be included in the non-riverine pine flatwood restoration areas. The non-riverine pine flatwood restoration areas will also include approximately 0.2 acre (0.1 hectare) of 15-year old pine flatwood west of West Muriel Road and approximately 2.7 acres (1.1 hectares) of timber cutover adjacent to West Muriel Road. Additionally, approximately 16.3 acres (6.6 hectares) of roadbed will be removed and restored to non-riverine pine flatwood.

Site Preparation

The non-riverine pine flatwood restoration area within the 10-year-old pine stand adjacent to East and West Muriel Roads includes the highest elevation within the Bishop Road site. The restoration area will be cleared and grubbed to remove the existing vegetation, which includes rows of planted pine as well as successional herbaceous and woody species. Bedding rows will be eliminated by pushing the bedded materials into the furrows adjacent to the bedding rows throughout the restoration area. The site will be disked to break up the plow pan and reduce soil compaction that may have resulted from historic management practices.

The two non-riverine pine flatwood restoration areas west of Silverthorne Road in the 10-year-old pine flatwood, which are approximately 5.5 acres (2.2 hectares) and 3.9 acres (1.6 hectares) in size, are topographically higher than the adjacent cutover area, which may be due to the bedding rows and timber slash debris. In order to restore the groundwater hydrologic influence, the natural elevation and surface topography will be restored. Soil cut from this area will be used to fill the roadside ditches within restoration areas, as well as provide replacement soil, as needed, for the roadbeds after fill material is removed.

Restoration is anticipated to be accomplished by removing 16.3 acres (6.6 hectares) of existing roadbed fill material and using it to fill the adjacent drainage ditches. The roadbeds proposed to be removed are on portions of Bishop Road, Silverthorne Road, Tarklin Creek Road, and the entire roadbed section of East and West Muriel Roads and the Weyerhaeuser Service Road.

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The 30-year-old pine flatwood south of the Weyerhauser Service Road and north of East Muriel Road will not be cleared. Currently, the areas lack hydrology indicators required to be jurisdictional. Removing the roadbed and filling the ditches will restore the hydrology. It is not necessary to clear the trees and replant as hydrophytic vegetation exists in these areas. These areas provide the only RCW habitat on site.

Soils

The dominant soils in this proposed restoration area were identified as Acredale silt loam, Argent loam, Chapanoke silt loam, and Hydeland silt loam. The Acredale, Argent, and Hydeland soil series are listed on the state hydric soils list as Hydric A soils, and the Chapanoke soil series is listed on the state hydric soils list as a Hydric B soil. Figure 5 depicts the soil mapping units mapped within the Bishop Road site. The Acredale and Argent soil units are poorly drained soils taxonomically identified as Endoaqualf soils, meaning they are classified as endoaquic soils. The Chapanoke soil unit is a somewhat poorly drained soil taxonomically identified as an Endoaqualt soil, meaning it is classified as an endoaquic soil. The Hydeland soil unit is a very poorly drained soil taxonomically identified as an Umbraqualf soil, meaning it is classified as an umbric soil with aquic conditions. Umbric soils are those that have thick, dark, organic-rich surface horizons.

Hydrology

Based on the mapped soil units, the non-riverine pine flatwood restoration areas are expected to have seasonal saturation at or near the soil surface. However, extensive draining and historic land use practices have reduced the groundwater hydrologic influence to these areas. The hydrologic regime to be restored to the areas is seasonally inundated or saturated to within 12 inches (30.5 centimeters) of the surface for 5 to 12.5 percent of the growing season. The wetland hydrology in these areas is anticipated to be restored by removing roadbed fill material, filling roadside drainage ditches, and reducing the existing elevations to match those of the adjacent jurisdictional areas. As a result of the cut and fill work, the normal water table is expected to return to within 12 inches (30.5 centimeters) of the soil surface for more than 5 percent of the growing season.

Vegetation

Vegetative species to be planted within the non-riverine pine flatwood restoration areas will be approved by NCEEP and may include species such as green ash (*Fraxinus*)

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pennsylvanica) (FACW), pond pine (FACW), bald cypress (OBL), swamp tupelo (OBL), and swamp chestnut oak (FACW-). Natural seeding from existing native woody vine, shrub, and tree species, such as loblolly pine, wax myrtle, and chokeberry, present in adjacent areas is expected to occur. Table 6 includes a list of recommended plant species for use in the non-riverine pine flatwood restoration areas.

Plant spacing intervals are anticipated to range from 6 to 10 feet (1.8 to 3.0 meters) with an average of eight feet (2.4 meters). Planting density for hardwoods and needle-leaved trees will be 680 stems per acre with an estimated 109.3 acres (44.2 hectares) being planted for the non-riverine pine flatwood restoration. A minimum of 50 percent coverage will be provided by planted pine species in order to achieve a pine-dominated community.

5.5.1.2.3 Methods for Restoring Riverine Forested Wetland

Site Preparation

The restoration plan provides for restoration of approximately 1 acre (0.4 hectare) of riverine forested wetland. The riverine forested wetland restoration area consists of the northern portion of the Weyerhaeuser Service Road. The roadbed will be removed, and the roadside ditches will be filled. Excavation equipment will be used to remove the existing vegetation and reduce the elevation of the roadbeds to match the adjacent jurisdictional areas.

Soils

The dominant soils in this proposed restoration area were identified as Belhaven muck and Yonges silt loam. Figure 5 depicts the soil units mapped within the Bishop Road site. The Belhaven and Yonges series are listed on the state hydric soils list as Hydric A soils. The Belhaven soil unit is a very poorly drained soil taxonomically identified as a Medisaprist. The Yonges soil unit is a poorly drained soil that is taxonomically identified as an Endoaquulf.

Hydrology

Based on the mapped soil units found in this proposed restoration area, the area is expected to have seasonal saturation at the soil surface or inundation. However, extensive draining and land use practices have reduced the groundwater hydrologic influence in this area. The hydrologic regime to be restored to the area is inundated or

Project Site Restoration Plan

saturated to within 12 inches (30.5 centimeters) of the surface for 12.5 to 25 percent of the growing season and is expected to experience periodic overbank flooding. Removing roadbed fill material and filling roadside drainage ditches will be completed in order to restore the hydrology in the area. As a result of the cut and fill work, the hydrologic connection to the Tarklin Creek headwaters is anticipated to be improved, and the normal water table level is expected to return to within 12 inches (30.5 centimeters) of the soil surface for 25 to 75 percent of the growing season.

Hydraulic trespass is not expected to be an issue for the adjacent offsite areas. Continued maintenance of the existing offsite drainage ditches by Weyerhaeuser should provide sufficient drainage for these areas.

Vegetation

The riverine forested wetland restoration area is expected to have hydrologic input from adjacent existing riverine forested wetlands; therefore, the area will require species tolerant of frequent flooding and saturated conditions throughout the year. Species to be planted will be approved by NCEEP and may include both hardwood and needle-leaved species such as water tupelo (*N. aquatica*) (OBL), bald cypress (OBL), Atlantic white cedar (*Chamaecyparis thyoides*) (OBL), overcup oak (*Q. lyrata*) (OBL), and pond pine (FACW+). Natural seeding from existing, native woody vine, shrub, and tree species, such as red maple, sweet gum, chokeberry, and wax myrtle, from adjacent areas is also expected to occur.

Plant spacing is anticipated to be at eight-foot (2.4-meter) intervals. The final spacing determination will be based on total planting area and total number of trees to be planted. Planting density for hardwoods and needle-leaved trees will be 680 stems per acre with an estimated 1 acre (0.4 hectare) being planted for this riverine forested wetland restoration.

5.5.2 On-Site Invasive Species Management

As with all ground disturbing activities, the establishment of invasive species is a concern. Newly disturbed ground provides a medium for early succession vegetation, some of which is considered invasive, to establish and out-compete the desired vegetation. Fast-growing species, such as sweet gum and red maple, can develop dense stands in mitigation sites, particularly in the coastal plain. If left unchecked, these species can overtake the site, wasting the time and money spent planting the desired species.

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The performance of planted woody vegetation will be documented during the monitoring period. If it becomes evident that sweet gum and red maple are out-competing the planted trees, remedial actions will be taken. These actions could include cutting, physically removing, or herbicidal treatment of the undesired species. Before any action is taken, options will be discussed with EEP and an implementation plan developed. The threshold for triggering invasive species management is greater than 40 percent composition of sweet gum or red maple in all monitoring plots or greater than 60 percent of both species after 2 years.

To prevent the introduction of invasive species from other sites, the contractor will be required to power wash all construction equipment prior to it entering the Bishop Road site. Also, the tidal marsh areas will be constructed first. This will prevent the spread of any invasives already occurring on site to these areas.

5.6 Natural Plant Community Preservation

The restoration plan provides for the preservation of approximately 189.6 acres (76.7 hectares) of tidal freshwater marsh, approximately 320.0 acres (129.6 hectares) of jurisdictional non-riverine pine flatwood, approximately 61.6 acres (24.9 hectares) of jurisdictional riverine forested wetland. The existing tidal freshwater marsh areas at the Bishop Road site have a well-established herbaceous community that includes various species such as sawgrass, needlerush, and cordgrass. The non-riverine pine flatwood preservation areas consist of 34.3 acres (13.9 hectares) of 5-year-old pine flatwood, 167.5 acres (67.8 hectares) of 10-year-old pine flatwood, 30.0 acres (12.1 hectares) of 15-year-old pine flatwood, 58.2 acres (23.6 hectares) of 30-year-old pine flatwood, and 30.4 acres (12.3 hectares) of timber cutover. The riverine forested wetland preservation area consists of 16.3 acres (6.6 hectares) of 10-year-old pine flatwood and 45.3 acres (18.3 hectares) of existing riverine forested wetland. The existing riverine forested wetland community associated with Tarklin Creek will provide a natural seed source for regeneration that will supplement the vegetation in the preservation area.

Performance Criteria

6. Performance Criteria

In order to determine if the restoration site is performing as designed, performance criteria to monitor the development of the site are required. Monitoring provides quantitative data and documentation of changes occurring at the site. The criteria including monitoring vegetation development, changes in groundwater elevations and soil profile analysis. All post-construction monitoring data will be compared to preconstruction data and all previous years' data. This comparison will show whether the site is progressing towards the desired outcome.

6.1 Devices

A search for available hydrologic data provided by federal and state agencies confirmed that no publicly available data currently exist for this portion of Hyde County. Therefore, in order to monitor the hydrologic regime of the site, groundwater gauges were installed in the tidal freshwater marsh, non-riverine pine flatwood, and riverine forested wetland restoration areas. Ten 40-inch (101.6-centimeter) Remote Data Systems (RDS) water level gauges were installed in the restoration areas along the existing roadbeds, within the 15- and 30-year-old pine stands adjacent to West Muriel Road, and within the 10-year-old pine stands along East Muriel and Bishop Roads and US 264. Additionally, four 40-inch (101.6-centimeter) RDS water level gauges were installed in the existing wetland areas within the site. The data from these gauges will be used as a reference for comparison of the data collected by the gauges placed within the restoration areas.

6.2 Wetlands

Data from all monitoring gauges will be recorded on a daily basis and collected five times during the 2006 monitoring period in order to establish the groundwater levels during the entire growing season. The groundwater data will be compared with monthly precipitation data in order to estimate the return cycle for water inputs.

Groundwater gauges have been installed within the non-riverine pine flatwood, riverine forest wetland restoration areas and onsite reference areas. The data collected from the restoration site gauges will be used to determine the hydrologic success of the restoration. The reference areas are located near and, in some instances, adjacent to the restoration areas. Therefore, the groundwater levels within the restoration areas should be very similar to those in the reference areas. If groundwater levels within the restored areas do not meet the criteria of within 12 inches (30.5 centimeters) of surface

Performance Criteria

for 5 to 12.5 percent of the growing season, then the levels will be compared to those in the adjacent reference areas. If there is a significant difference in groundwater levels, remedial actions will be coordinated with NCEEP.

6.3 Vegetation

Vegetation success within the restored non-riverine pine flatwood area will be measured by survivability over a 5 year monitoring period. Success will be based on the survival of 260 stems per acre after 5 years. An intermediate benchmark of 320 stems per acre surviving after 3 years will be used to determine if the area may meet the 5-year survival rate without requiring contingency measures. A survey of vegetation during the growing season (mid-March to mid-November) will be conducted annually over the 5 year monitoring period in order to determine survival rate of the installed plantings. This survey will track the total mortality on an annual basis and be used to calculate survivability at the end of 5 years. Survival of fewer than 320 stems per acre at the end of 3 years and fewer than 260 stems per acre at the end of 5 years will require the identification and implementation of appropriate contingency measures by the NCEEP. If the contingency measures involve re-planting an area, then the monitoring timeline for the re-planted area will be reset to year one.

The above performance criteria will be applied to restoration areas that are cleared and replanted. Vegetation within the 30-year-old pine communities will not be cleared and replanted. Therefore, vegetation monitoring will not be conducted in this community.

A total of 35 permanent woody vegetation monitoring plots measuring approximately 1,076 square feet (100 square meters) will be located and marked for each annual monitoring event. The planted individuals will be marked such that they can be found in successive years. Mortality will be determined from the difference between the previous year's living planted seedlings and the current year's living planted seedlings. The location of some of the vegetation monitoring plots will be tied to the groundwater monitoring wells in order to collect data on both hydrologic and vegetative success at a single location. The remaining vegetation monitoring plots will be located in other areas of the site in order to capture variation in topography, hydrology, soil conditions, and species selection throughout the disturbed areas.

Invasive species will not be counted toward meeting the vegetation success criteria. A maximum of 20 percent of the site species composition may be composed of invading species. Anticipated invasive species include primarily red maple and sweet gum.

Performance Criteria

Remedial action, as discussed in Section 5.4.2, may be required if invasive species are found to present a problem during the monitoring period.

6.4 Schedule Reporting

Monitoring results will be documented on an annual basis as evidence that the mitigation goals are being achieved. A mitigation monitoring report following NCEEP format will be completed for each year's monitoring and submitted. The report will discuss the conditions of the site relative to the standards previously discussed for mitigation success. If standards are not met, NCEEP will perform appropriate remedial activities to satisfy the regulatory team.

6.5 Final Dispensation

The NCEEP will maintain ownership of the site until all mitigation activities are completed and determined to be successful. Final dispensation of the Bishop Road mitigation site is anticipated to go to NCWRC based on a letter dated December 18, 2001 from NCWRC to ARCADIS expressing interest in the site. ARCADIS requested confirmation of NCWRC's interest in the site. No response has been received to date. Final dispensation of the site will be addressed in the final version of this document. Upon final dispensation of the site, the deed will state that the property will be managed for the purpose of mitigation in perpetuity.

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Tables

Table 1. Protected Species Listed for Hyde County, North Carolina

Common Name	Scientific Name	Federal Status	State Status	Preferred Habitat	Habitat Available
<u>Vertebrates</u>					
Shortnose sturgeon	Acipenser brevirostrum	Е	E	brackish water of large rivers and estuaries; spawns in freshwater areas	No
American alligator	Alligator mississippiensis	T(S/A)	Т	great river swamps, lakes, bayous, marshes, and other water bodies of Florida and the Gulf and Lower Atlantic Coastal Plains	Yes
American eel	Anguilla rostrata	FSC	-	oceanic and coastal waters; may inhabit freshwater rivers, streams, and ponds	Yes
Red wolf	Canis rufus	E (XN)	SR	upland and lowland forests, shrublands, coastal prairies and marshes, and other	Yes
Loggerhead sea turtle	Caretta caretta	Т	т	nests on beaches; forages in ocean and sounds	No
Piping plover	Charadrius melodus	т	т	ocean beaches and island-end flats	No
Green sea turtle	Chelonia mydas	T*	Т	nests on beaches; forages in ocean and sounds	No
Timber rattlesnake	Crotalus horridus	-	SC	forested wetland areas	Yes
Black-throated green warbler	Dendroica virens waynei	FSC	SR	forests, thickets, or old fields	Yes
Leatherback sea turtle	Dermochelys coriacea	Е	E	oceans, rarely in sounds	No
Little blue heron	Egretta caerulea	-	SC	forests or thickets on maritime islands	No
Snowy egret	Egretta thula	-	SC	forests or thickets on maritime islands	No
Tricolored heron	Egretta tricolor	-	SC	forests or thickets on maritime islands	No
Hawksbill sea turtle	Eretomochelys imbricata	E	-	oceans, rarely in sounds	No
Peregrine falcon	Falco peregrinus	-	E	herbaceous wetland, forests, tidal flats, and urban locations near water	Yes
Bald eagle	Haliaeetus leucocephalus	Т	Т	mature forests near large bodies of water such as lakes and sounds	Yes
Outer Banks kingsnake	Lampropeltis getula sticticeps	-	SC	maritime forests, thickets, and grasslands on the Outer Banks	No
Black rail	Laterallus jamaicensis	FSC	SR	brackish marshes, rarely fresh marshes	No
Kemp's Ridley sea turtle	Lepidochelys kempii	Е	Е	oceans and sounds	No
Carolina diamondback terrapin	Malaclemys terrapin centrata	-	SC	salt or brackish waters	Yes
Carolina salt marsh snake	Nerodia sipedon williamengelsi	-	SC	salt or brackish marshes	Yes
Red-cockaded woodpecker	Picoides borealis	Е	Е	mature open pine forests, mainly in longleaf pine	No
Glossy ibis	Plegadis falcinellus	-	SC	forests or thickets on maritime islands	No
Black skimmer	Rynchops niger	-	SC	sand flats on maritime islands	No
Pigmy rattlesnake	Sistrurus miliarius	-	SC	moist to wet lowlands	Yes
Least tern	Sterna antillarum	-	SC	beaches and other edges of water with less than 20 percent vegetative cover	No
Common tern	Sterna hirundo	-	SC	edges of water; nests on sandy to stony beaches, matted vegetation, or marsh islands	Yes
Gull-billed tern	Sterna nilotica	-	SC	salt or brackish waters, plowed fields, and, less frequently, freshwater marshes	Yes
West Indian manatee	Trichechus manatus	Е	E	warm waters of estuaries and river mouths	No
Vascular Plants					
Sensitive jointvetch	Aeschynomene virginica	Т	Т	freshwater to slightly brackish tidal marshes and wet ditches	Yes
Seabeach amaranth	Amaranthus pumilus	Т	Т	ocean beaches and island-end flats	No
Saltmarsh spikerush Carolina grasswort	Eleocharis halophila Lilaeopsis carolinensis	-	Т** Т	brackish and freshwater marshes freshwater marshes, pools, tidal marshes	Yes Yes
Grassleaf arrowhead	Sagittaria weatherbiana	FSC	SR-T	fresh to slightly brackish marshes, streams, swamps, and pond margins	Yes
Small-leaved meadow-rue	Thalictrum macrostylum	FSC**	SR-L	bogs and wet woods	Yes
Dune blue curls	Trichostema sp. 1	FSC	SR-L	dunes, openings in maritime forest and scrub	No

Notes:

 (XN) Experimental, nonessential Experimental, nonessential population of an endangered species are treated as threatened species on public land, for consultation purposes, and as species proposed for listing on private land. T Threatened A taxon "likely to become endangered within the foreseeable future throughout all or a significant portion of its range." FSC Federal Species of Concern As pecies that may or may not be listed in the future (formerly C2 candidate species or species under consideration for listing for which there is insufficient information to support listing.) SC Special Concern Any species of wild animal native or once-native to North Carolina which is determined by the N.C. Wildlife Resources Commission to require monitoring but which may be taken under certain regulations. SR Significantly Rare Any species are throughout their ranges with fewer than 100 populations total. -T Throughout The range of the species is limited to North Carolina and adjacent states. Species may have 20-50 populations in North Carolina, but fewer than 50 populations rangewide. * Obscure Record The date and/or location of observation is uncertain. ** Historic Record The species was last observed in the county more than 50 years ago. 	Е	Endangered	A taxon "in danger of extinction throughout all or a significant portion of its range."
TThreatenedA taxon "likely to become endangered within the foreseeable future throughout all or a significant portion of its range."FSCFederal Species of ConcernA species that may or may not be listed in the future (formerly C2 candidate species or species under consideration for listing for which there is insufficient information to support listing.)SCSpecial ConcernAny species of wild animal native or once-native to North Carolina which is determined by the N.C. Wildlife Resources Commission to require monitoring but which may be taken under certain regulations.SRSignificantly RareAny species which has not been listed by the N.C. Wildlife Resources Commission as Endangered, Threatened, or Special Concern species, but which exists in the state in small numbers and has been determined by the N.C. Natural Heritage Program to need monitoringTThroughoutThese species are rare throughout their ranges with fewer than 100 populations totalLLimitedThe range of the species is limited to North Carolina and adjacent states. Species may have 20-50 populations in North Carolina, but fewer than 50 populations rangewide.*Obscure RecordThe date and/or location of observation is uncertain.	(XN)	Experimental, nonessential	
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			in North Carolina, but fewer than 50 populations rangewide.
** Historic Record The species was last observed in the county more than 50 years ago.	*	Obscure Record	The date and/or location of observation is uncertain.
	**	Historic Record	The species was last observed in the county more than 50 years ago.

Existing Community	Estimated Acres (Hectares)	Jurisdictional Acres (Hectares)	Non- Jurisdictional Acres (Hectares)
Pine Flatwood			
5-Year Old Pine	45.3 (18.3)	34.3 (13.9)	11.0 (3.6)
10-Year Old Pine	239.9 (97.1)	183.8 (74.4)	56.1 (22.7)
15-Year Old Pine	30.2 (12.2)	30.0 (12.1)	0.2 (0.1)
30-Year Old Pine	84.2 (34.1)	58.2 (23.6)	26.0 (10.5)
Timber Cutover	33.1 (13.4)	30.4 (12.3)	2.7 (1.1)
Tidal Freshwater Marsh			
Marsh Pond	2.2 (0.9)	2.2 (0.9)	
Marsh Sloughs	11.4 (4.6)	11.4 (4.6)	
Marsh	176.0 (71.2)	176.0 (71.2)	
Weyerhaeuser Mitigation Area	5.0 (2.0)	5.0 (2.0)	
Riverine Forested Wetland	45.3 (18.3)	45.3 (18.3)	
Roadbeds	19.1 (7.7)		19.1 (7.7)
Total Acres (Hectares)	691.7 (279.9)	577.5 (233.7)	114.2 (46.2)

Table 2: Summary of Existing Jurisdictional and Non-Jurisdictional Areas

Symbol	Series	Taxonomy (Subgroup)	Slope (%)	Permeability	Hydric Class.	Drainage Class.*	Available Water Capacity	High Water Table	Shrink- swell Potential
AcA	Acredale silt loam	Typic Endoaqualf	0-2	Slow	А	Ρ	Moderate to High	<1.0 ft	Moderate
ArA	Argent loam	Typic Endoaqualf	0-2	Slow	A	Ρ	Moderate to High	<1.0 ft	Moderate
BnA	Belhaven muck	Terric Medisaprist	0-2	Slow to Rapid	A	VP	High to Very High	<1.0 ft	Low
BoA	Bolling loamy fine sand	Aquic Hapludalf	0-3	Moderate	В	MW	Moderate to High	1.5 ft to 2.5 ft	Low
BrA	Brookman loam	Typic Umbraqualf	0-2	Slow	A	VP	Moderate to High	<1.0 ft	Low to Moderate
ChA	Chapanoke silt Ioam	Aeric Endoaquult	0-2	Moderately Slow	В	SP	High	0.5 ft to 1.5 ft	Low
FkA	Fork fine sandy loam	Aeric Endoaquult	0-2	Moderate	В	SP	Moderate to High	1.0 ft to 2.0 ft	Low
НуА	Hydeland silt Ioam	Typic Umbraqualf	0-2	Moderately Slow	A	VP	Moderate to High	<1.0 ft	Low
LfA	Longshoal mucky peat	Typic Medisaprist	0-1	Moderately Rapid	A	VP	Very High	<0.5 ft	Low
StA	Stockade mucky sandy loam	Typic Umbraqualf	0-2	Moderate	А	VP	Moderate to High	<1.0 ft	Low
YeA	Yeopim silt Ioam	Aquic Hapludult	0-3	Moderately Slow	В	MW	High	1.5 ft to 3.0 ft	Low
YoA	Yonges silt Ioam	Typic Endoaqualf	0-2	Moderately Slow	A	Ρ	Moderate to High	<1.0 ft	Low

Table 3. Existing Soils - Bishop Road Wetland Restoration Site, Hyde County, North Carolina

* MW, P, and VP denote drainage classification (MW=Moderately well-drained, P=Poorly drained, and VP=Very poorly drained)

Community	Estimated Existing Acres (Hectares)
Pine Plantation	
5-Year Old Pine	45.3 (18.3)
10-Year Old Pine	239.9 (97.1)
15-Year Old Pine	30.2 (12.2)
30-Year Old Pine	84.2 (34.1)
Timber Cutover	33.1 (13.4)
Tidal Freshwater Marsh	
Marsh Pond	2.2 (0.9)
Marsh Sloughs	11.4 (4.6)
Marsh	176.0 (71.2)
Weyerhaeuser Mitigation Area	5.0 (2.0)
Riverine Forested Wetland	45.3 (18.3)
Total Acreage	672.6 (272.2)*

Table 4: Natural Vegetative Communities

• Roadbeds, which comprise an additional 19.1 acres (7.7 hectares) of the site, are not included in the total acreage.

Table 5: Summary of Mitigation Types and Existing Vegetative Communities

	Propose	Proposed Mitigation Types	on Types									
	Tidal Fre	Tidal Freshwater Marsh	larsh									
Existing Vegetative Communities	ฟลารท	sybnojs	Marsh	puod		nenem	Non-riverine Pine Flatwoods	le Pine	Riverine Forested Wetland	a ک –		
	Restoration	Preservation	Restoration	Preservation	Restoration	Preservation	Restoration	Preservation	Restoration	Preservation	Weyer- haeuser Mitigation Area	Silverthorne Road
Pine Plantation												
 •5-Year Old Pine 			2.2 (0.9)				8.0 (3.2)	34.3 (13.9)				0.9 (0.4)
 10-Year Old Pine 							56.1 (22.7)	167.5 (67.8)		16.3 (6.6)		
 15-Year Old Pine 							0.2 (0.1)	30.0 (12.1)				-
•30-Year Old Pine							26.0 (10.5)	58.2 (23.6)			-	
Timber Cutover							2.7 (1.1)	30.4 (12.3)				
Tidal Freshwater Marsh												
 Marsh Pond 				2.2 (0.9)								
 Marsh Sloughs 		11.4 (4.6)										
•Marsh						176.0 (71.2)						
 Weyerhaeuser Mitigation Area 											5.0 (2.0)	
Riverine Forested Wetland										45.3 (18.3)		
Roadbeds	0.1 (0.04)				0.3 (0.1)		16.3 (6.6)		1.0 (0.4)			0.7 (0.3)
Total Acres (Hectares)	0.1 (0.04)	11.4 (4.6)	2.2 (0.9)	2.2 (0.9)	0.3 (0.1)	176.0 (71.2)	109.3 (44.2)	320.4 (129.8)	1.0 (0.4)	61.6 (24.9)	5.0 (2.0)	1.6 (0.6)

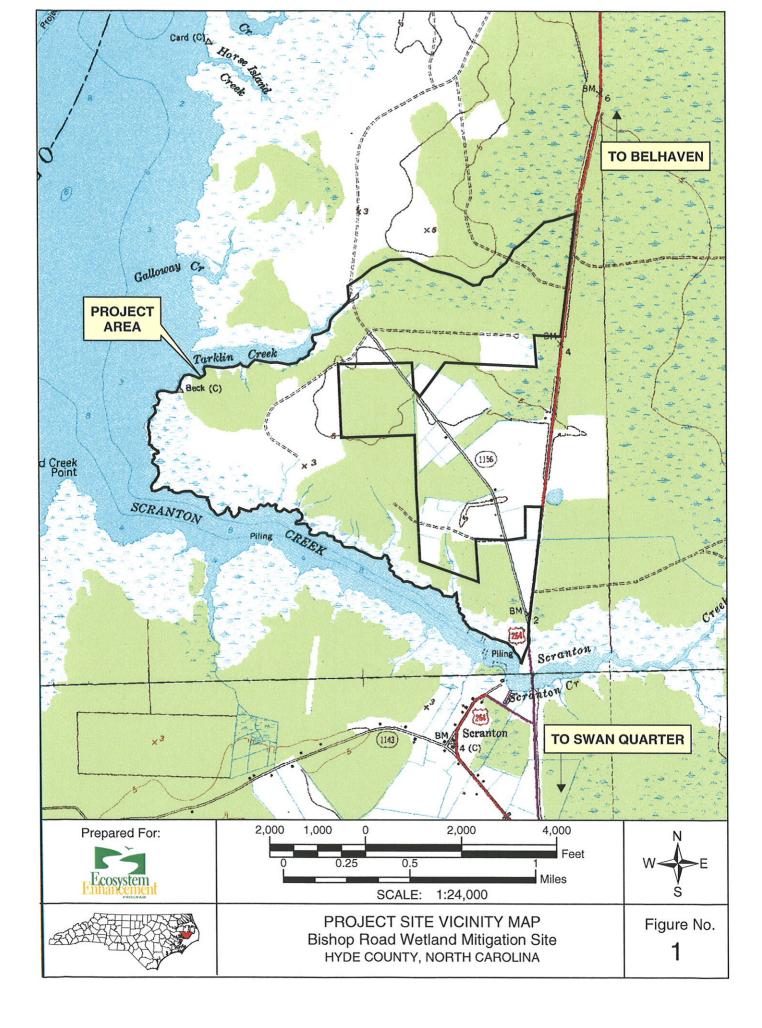
Table 6. Proposed Vegetation and Planting Zones

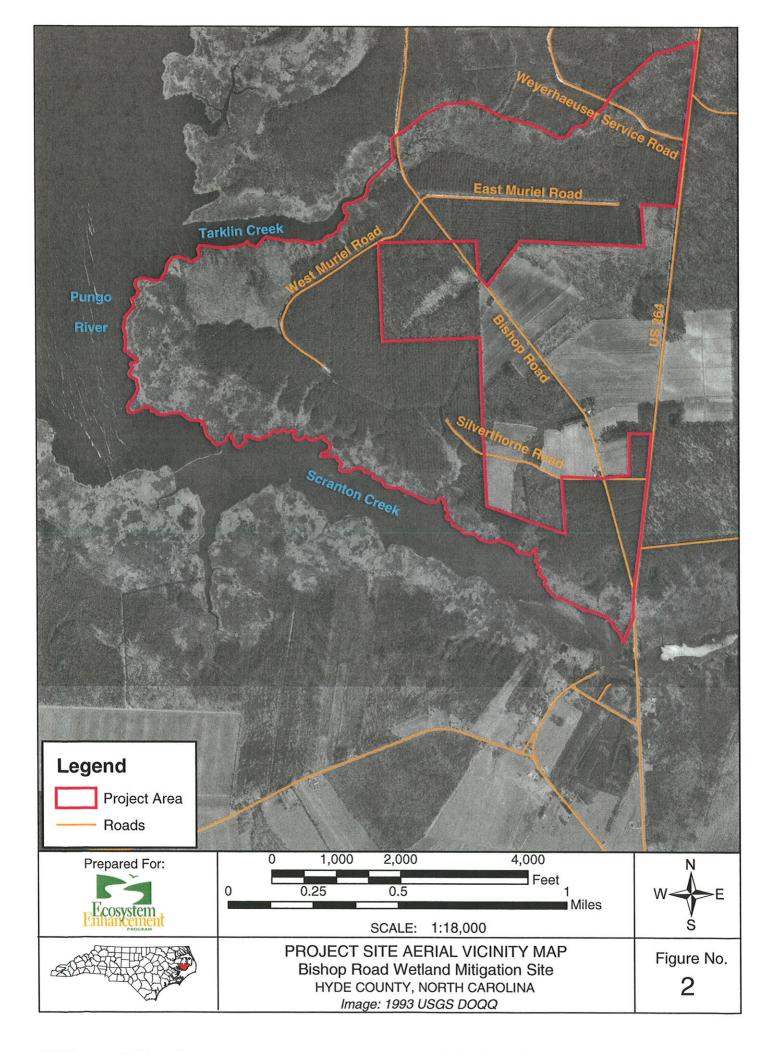
	Tidal Freshwater N	larsh	Non-Riverine Pine Flatwoo	ds	Riverine Forested	
Herbaceous (seed)			Switch grass Slender spikegrass Soft rush Broomsedge Lurid sedge Hop sedge Woolgrass sedge Rough-leaved goldenrod Beggar's ticks	Panicum virgatum Chasmanthium laxum Juncus effusus Andropogon virginicus Carex lurida Carex lupulina Scirpus cyperinus Solidago rugosa Bidens frondosa	Switch grass Slender spikegrass Soft rush Broomsedge Lurid sedge Hop sedge Woolgrass sedge Rough-leaved goldenrod Beggar's ticks	Panicum virgatum Chasmanthium laxum Juncus effusus Andropogon virginicus Carex lurida Carex lupulina Scirpus cyperinus Solidago rugosa Bidens frondosa
Herbaceous (container/plug/bare- root)	Black needlerush Sawgrass Smooth cordgrass Pickerelweed Saltmarsh bulrush Seaside goldenrod Arrow arum Rice cutgrass Monkey flower Duck potato Swamp mildweed Switch grass	Juncus roemerianus Cladium jamaicense Spartina alterniflora Pontederia cordata Scirpus robustus Solidago sempervirens Peltandra virginica Leersia oryzoides Mimulus ringens Sagittaria lancifolia Asclepias incarnata Panicum virgatum	Broomsedge Cinnamon fern Swamp mildweed Sedge Soft rush Slender spikegrass Southern sedge	Andropogon virginicus Osmunda cinnamomea Asclepias incarnata Carex stricta Juncus effusus Chasmanthium laxum Carex glaucescens	Royal fern Arrow arum Monkey flower Netted chain fern Cinnamon fern Sedge Soft rush Southern sedge	Osmunda regalis Peltandra virginica Mimulus ringens Woodwardia areolata Osmunda cinnamomea Carex stricta Juncus effusus Carex glaucescens
Shrub	Rose mallow Swamp rose	Hibiscus moscheutos Rosa palustris	Ti-ti Wax myrtle Choke cherry Highbush blueberry Shining fetterbush Sweetpepper bush America holly	Cyrilla racemiflora Morella cerifera Aronia arbutifolia Vaccinium corymbosum* Lyonia lucida Clethra alnifolia Ilex opacca	Swamp rose Ti-ti Wax myrtle Tag alder Shining fetterbush	Rosa palustris Cyrilla racemiflora Morella cerifera Alnus serrulata Lyonia lucida
Trees			Pond pine Water oak Willow oak Swamp white oak Sweet bay Atlantic white-cedar Loblolly bay	Pinus serotina Quercus nigra Quercus phellos Quercus michauxii Magnolia virginiana Chamaecyparis thyoides Gordonia lasianthus	Bald cypress Water tupelo Water oak Overcup oak Willow oak Sweet bay Water hickory Atlantic white-cedar	Taxodium distichum Nyssa aquatica Quercus nigra Quercus lyrata Quercus phellos Magnolia virginiana Carya aquatica Chamaecyparis thyoides

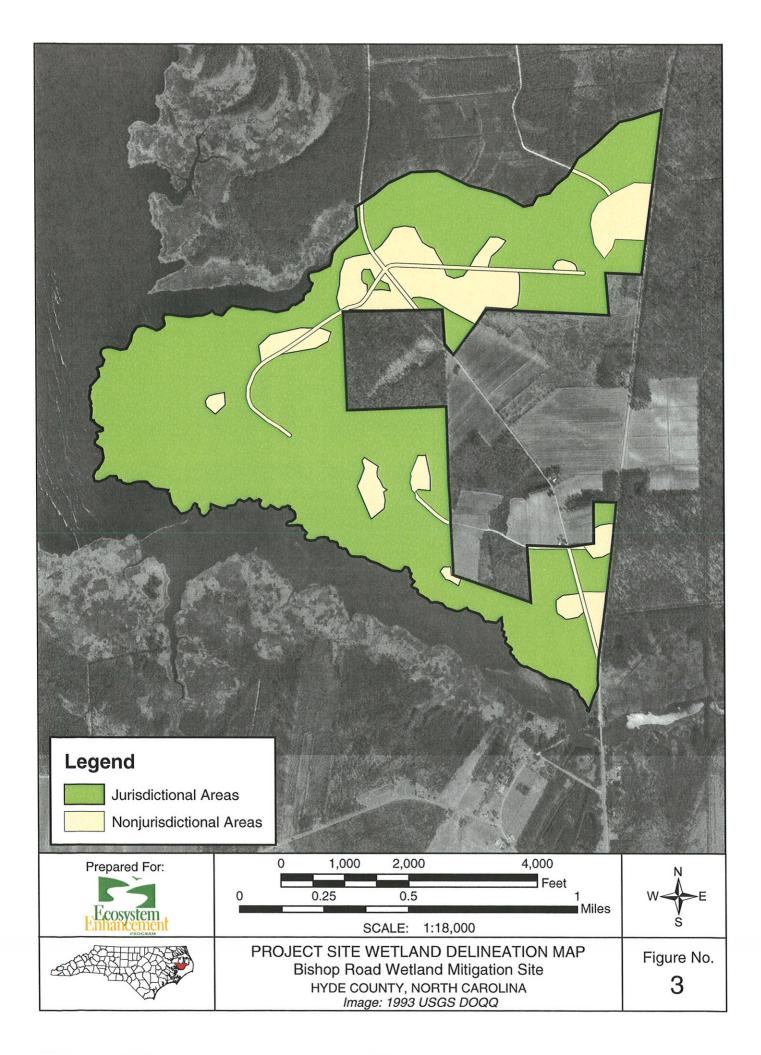
* aka Vaccinium formosum

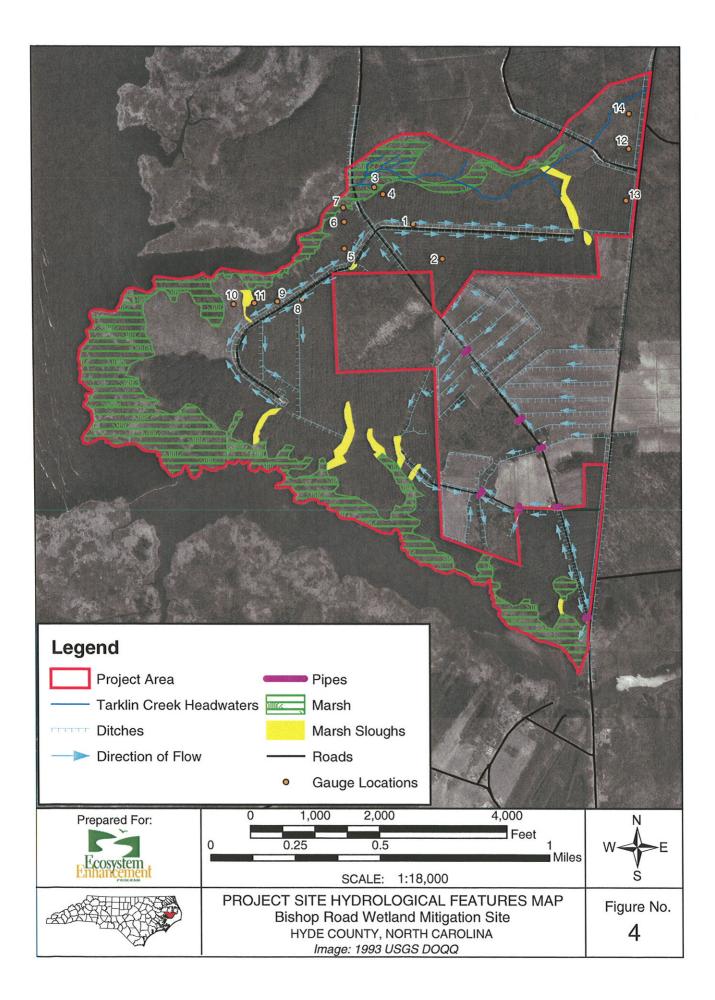
Figures

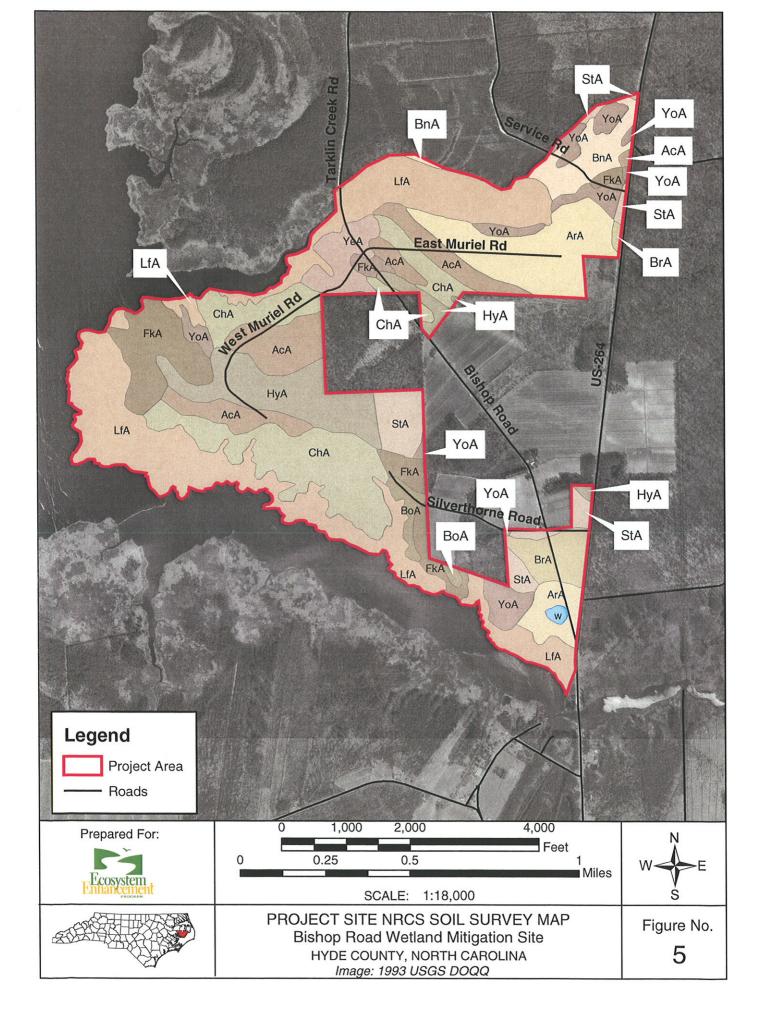
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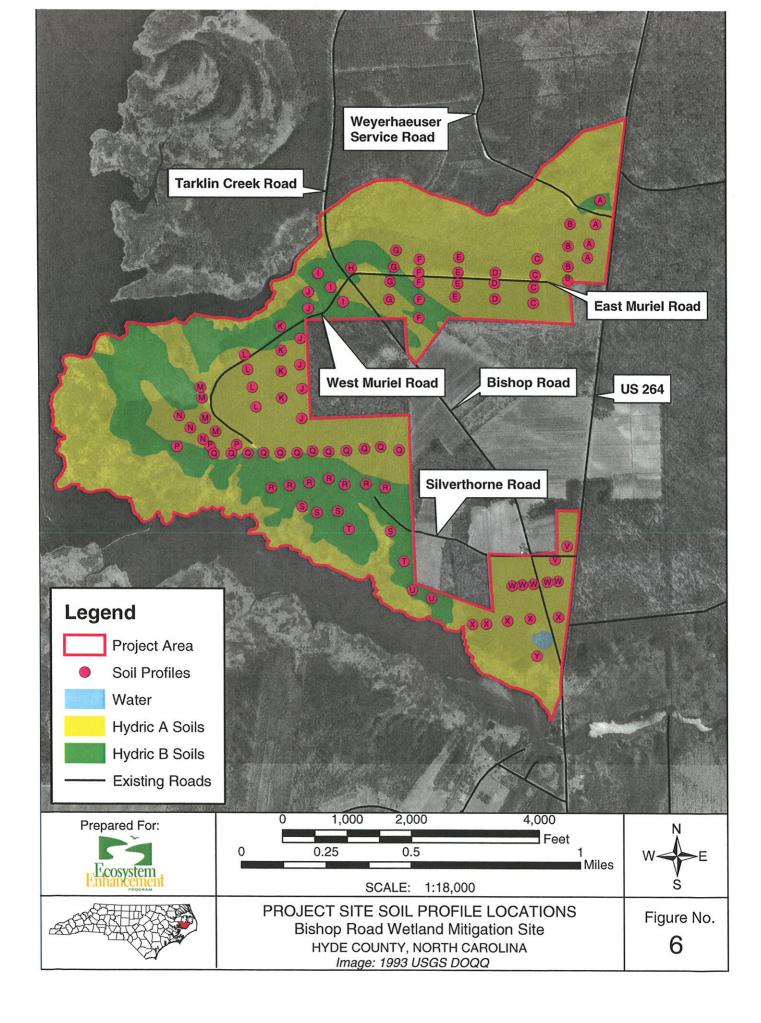


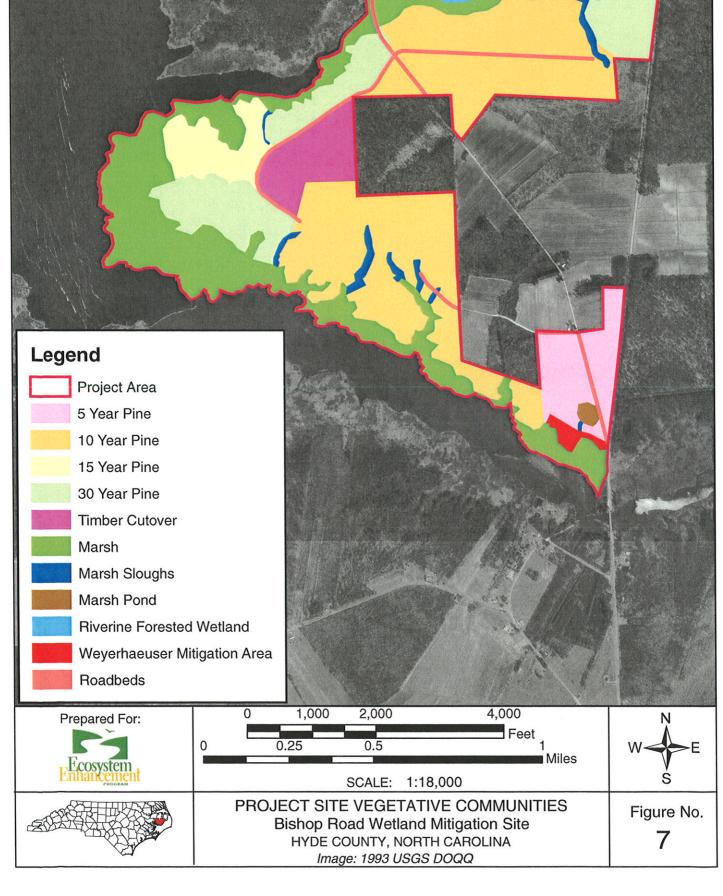


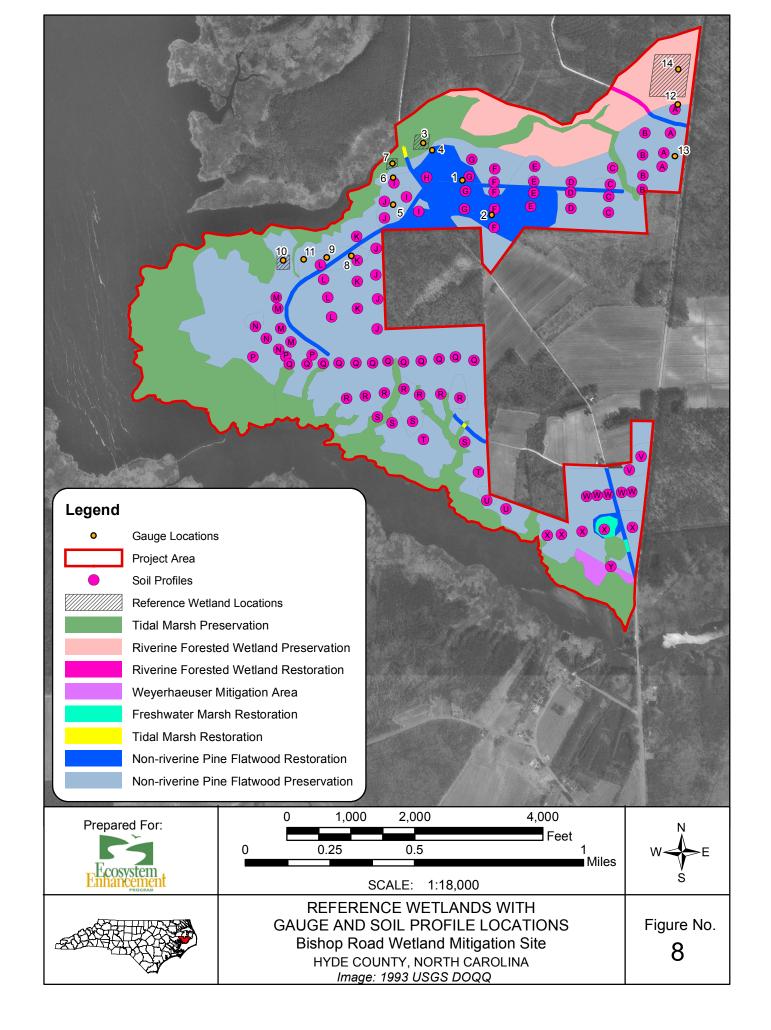


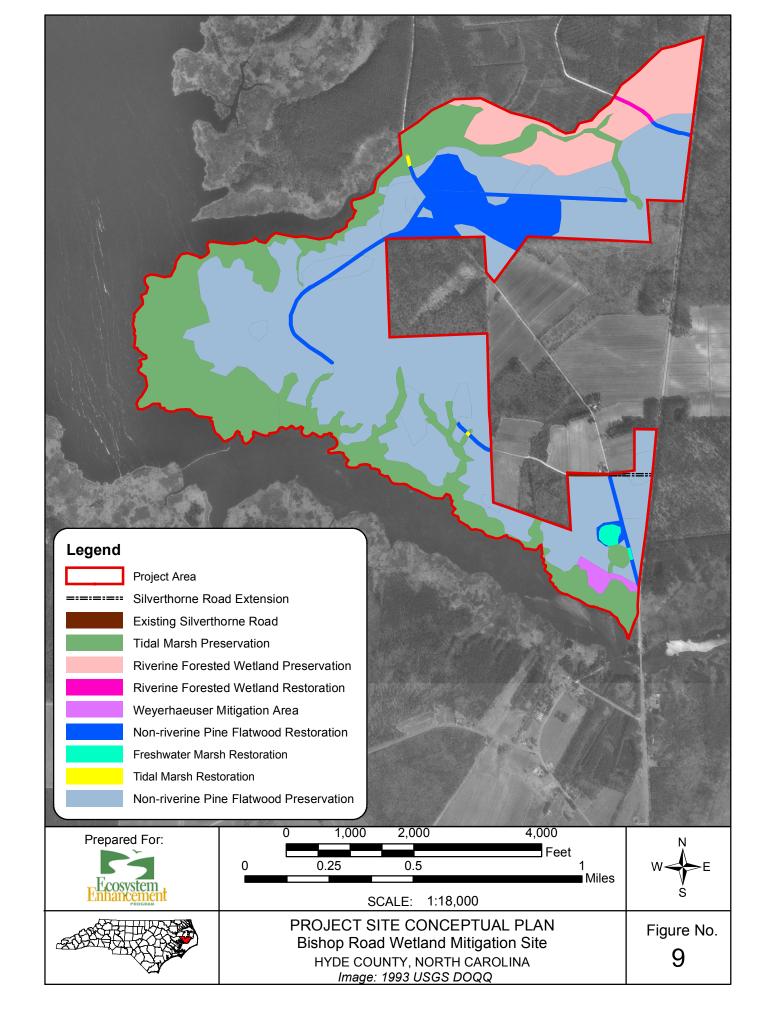










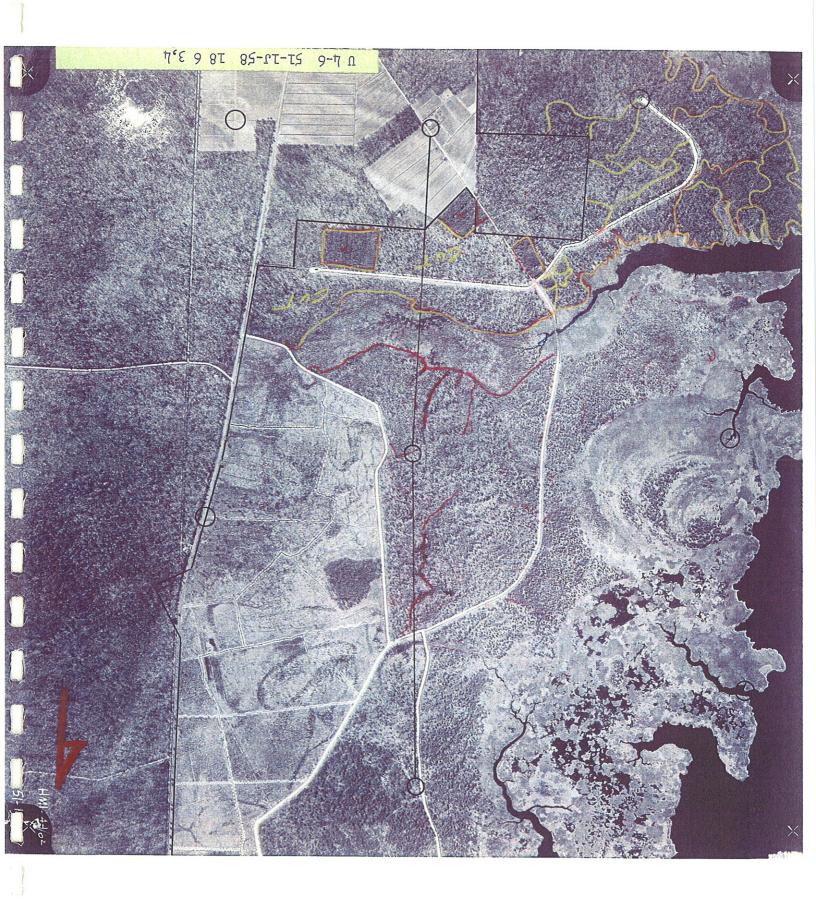


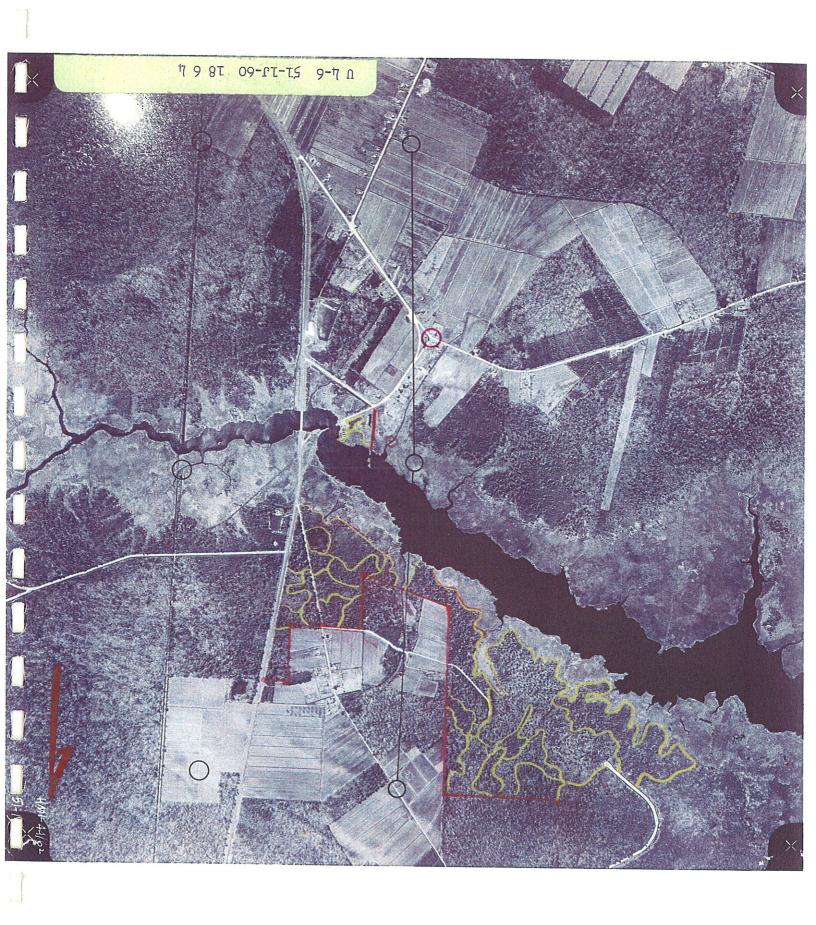
Appendix A

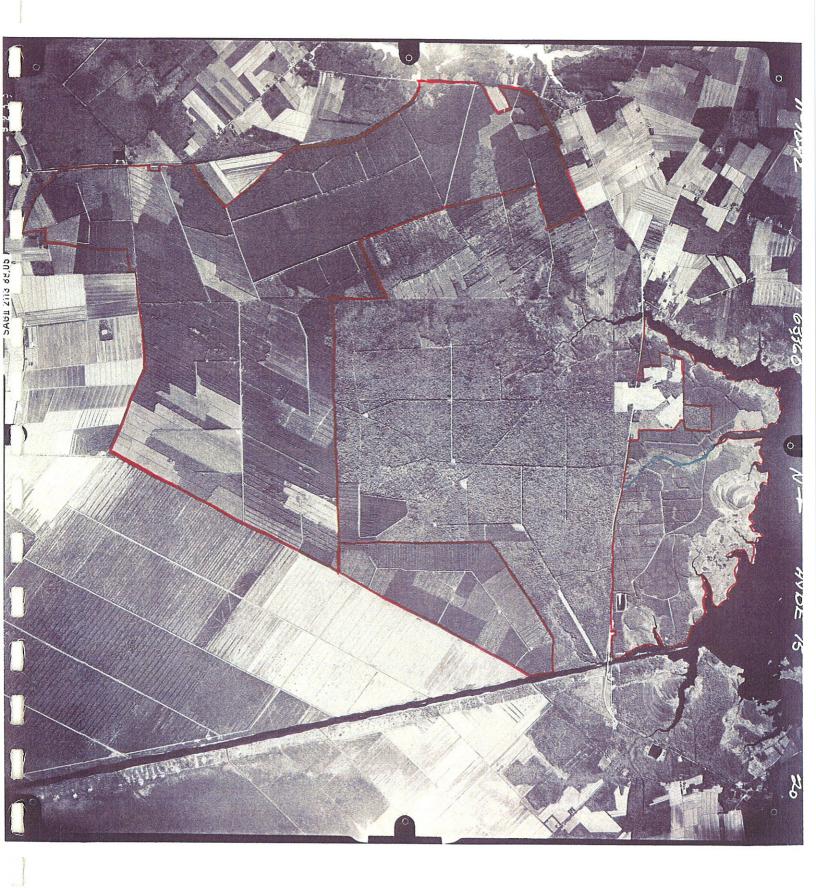
Aerial Photographs – 1958, 1960, 1992, 1997, and 2001

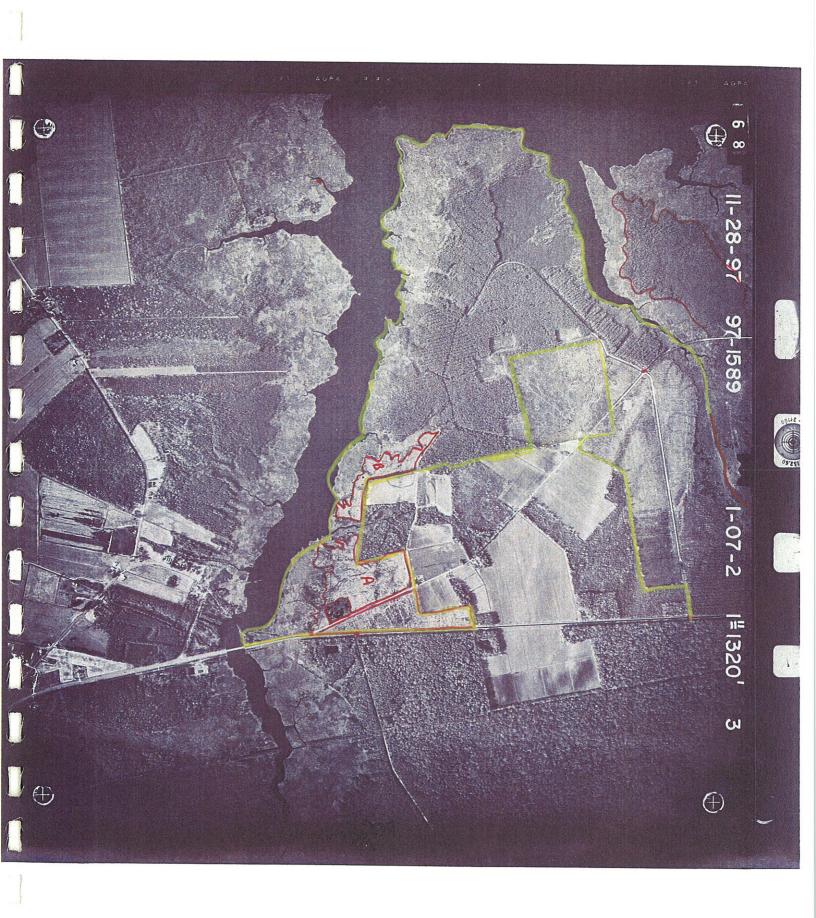
Appendix A

Aerial Photographs - 1958, 1960, 1992, 1997, and 2001











WEYERHAEUSER / NC TIMBERLANDS TRACT : HYDE-6 SCALE : 1" = 1320'

DATE : 03-17-01 SPOT # 10 MAP NO. I-07-02 JOB # 2754 R1F6 NORTH

585 VALLEY VIEW ROAD PELHAM, AL 35124 205.987.1771



Appendix B

Environmental Data Resources, Inc., Report

Appendix B

Environmental Data Resources, Inc., Report

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Government Records Searched/Data Currency Tracking	GR-1

GEOCHECK ADDENDUM

GeoCheck - Not Requested

Thank you for your business. Please contact EDR at 1-800-352-0050 with any questions or comments.

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EXECUTIVE SUMMARY

A search of available environmental records was conducted by Environmental Data Resources, Inc. (EDR). The report meets the government records search requirements of ASTM Standard Practice for Environmental Site Assessments, E 1527-00. Search distances are per ASTM standard or custom distances requested by the user.

TARGET PROPERTY INFORMATION

ADDRESS

SR 1156(BISHOP ROAD)AT US 264 SCRANTON, NC 27875

COORDINATES

Latitude (North): 35.511400 - 35° 30' 41.0" Longitude (West): 76.456300 - 76° 27' 22.7" Universal Tranverse Mercator: Zone 18 UTM X (Meters): 367934.5 UTM Y (Meters): 3930533.8

USGS TOPOGRAPHIC MAP ASSOCIATED WITH TARGET PROPERTY

Target Property: Source:

2435076-E4 PONZER, NC USGS 7.5 min quad index

TARGET PROPERTY SEARCH RESULTS

The target property was not listed in any of the databases searched by EDR.

DATABASES WITH NO MAPPED SITES

No mapped sites were found in EDR's search of available ("reasonably ascertainable") government records either on the target property or within the ASTM E 1527-00 search radius around the target property for the following databases:

FEDERAL ASTM STANDARD

NPL	National Priority List
Proposed NPL	Proposed National Priority List Sites
CERCLIS	Comprehensive Environmental Response, Compensation, and Liability Information
	System
CERC-NFRAP	CERCLIS No Further Remedial Action Planned
CORRACTS	. Corrective Action Report
RCRIS-TSD	Resource Conservation and Recovery Information System
RCRIS-LQG	Resource Conservation and Recovery Information System
RCRIS-SQG	Resource Conservation and Recovery Information System
ERNS	Emergency Response Notification System

STATE ASTM STANDARD

SHWS	. Inactive Hazardous Sites Inventory
	List of Solid Waste Facilities
LUST	Incidents Management Database
	_ Petroleum Underground Storage Tank Database

EXECUTIVE SUMMARY

FEDERAL ASTM SUPPLEMENTAL

CONSENT ROD	Superfund (CERCLA) Consent Decrees Records Of Decision
	National Priority List Deletions
FINDS	Facility Index System/Facility Identification Initiative Program Summary Report
HMIRS	Hazardous Materials Information Reporting System
MLTS	Material Licensing Tracking System
MINES	Mines Master Index File
NPL Liens	Federal Superfund Liens
PADS	PCB Activity Database System
RAATS	RCRA Administrative Action Tracking System
TRIS	Toxic Chemical Release Inventory System
TSCA	Toxic Substances Control Act
FTTS	FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, &
	Rodenticide Act)/TSCA (Toxic Substances Control Act)

STATE OR LOCAL ASTM SUPPLEMENTAL

NC HSDS	Hazardous Substance Disposal Site
IMD	Incident Management Database

EDR PROPRIETARY DATABASES

Coal Gas_____ Former Manufactured Gas (Coal Gas) Sites

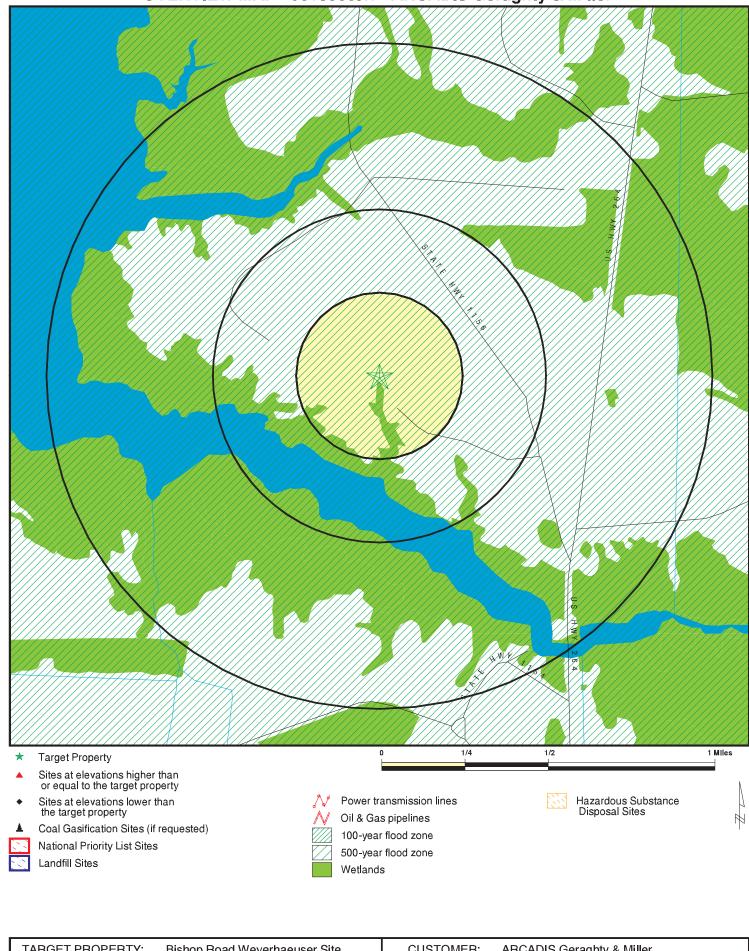
SURROUNDING SITES: SEARCH RESULTS

Surrounding sites were not identified.

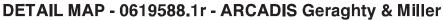
EXECUTIVE SUMMARY

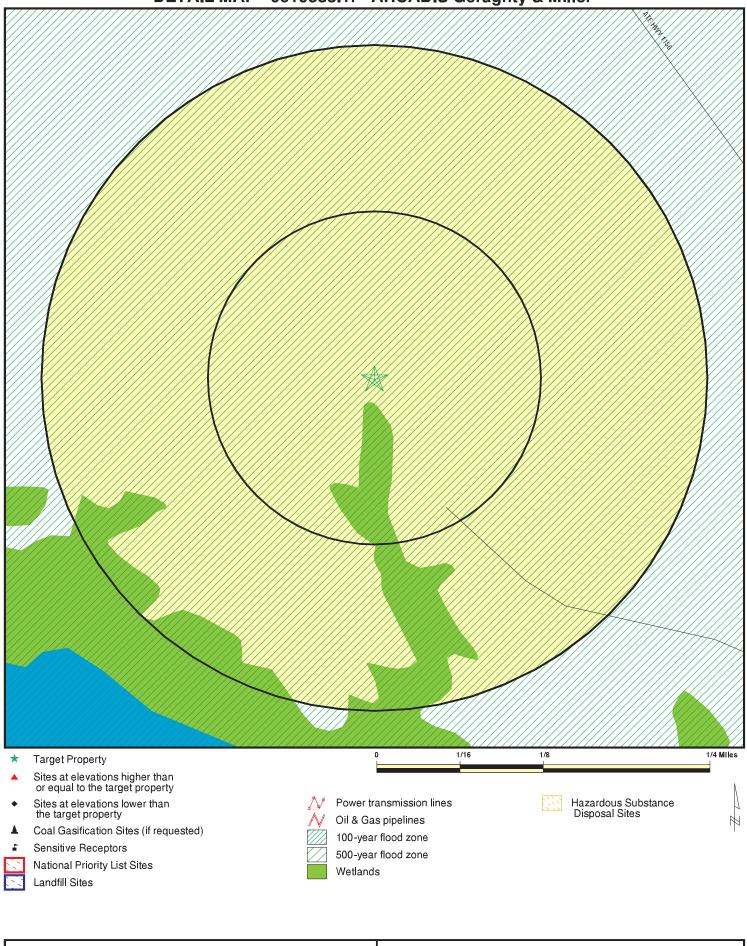
Due to poor or inadequate address information, the following sites were not mapped: There were no unmapped sites in this report.

OVERVIEW MAP - 0619588.1r - ARCADIS Geraghty & Miller



TARGET PROPERTY: ADDRESS: CITY/STATE/ZIP: LAT/LONG: Bishop Road Weyerhaeuser Site SR 1156(Bishop Road)at US 264 Scranton NC 27875 35.5114 / 76.4563 CUSTOMER: CONTACT: INQUIRY #: DATE: ARCADIS Geraghty & Miller Cindy Carr 0619588.1r April 13, 2001 2:03 pm





TARGET PROPERTY: ADDRESS: CITY/STATE/ZIP: LAT/LONG: Bishop Road Weyerhaeuser Site SR 1156(Bishop Road)at US 264 Scranton NC 27875 35.5114 / 76.4563 CUSTOMER: CONTACT: INQUIRY #: DATE: ARCADIS Geraghty & Miller Cindy Carr 0619588.1r April 13, 2001 2:03 pm

MAP FINDINGS SUMMARY

Database	Target Property	Search Distance (Miles)	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
FEDERAL ASTM STANDARD								
NPL Proposed NPL CERCLIS CERC-NFRAP CORRACTS RCRIS-TSD RCRIS Lg. Quan. Gen. RCRIS Sm. Quan. Gen. ERNS		1.000 1.000 0.500 0.250 1.000 0.500 0.250 0.250 TP	0 0 0 0 0 0 0 0 0 NR	0 0 0 0 0 0 NR	0 0 NR 0 0 NR NR NR	0 NR NR 0 NR NR NR NR	NR NR NR NR NR NR NR	0 0 0 0 0 0 0 0 0
STATE ASTM STANDARD								
State Haz. Waste State Landfill LUST UST		1.000 0.500 0.500 0.250	0 0 0 0	0 0 0 0	0 0 0 NR	0 NR NR NR	NR NR NR NR	0 0 0 0
FEDERAL ASTM SUPPLEMENTAL								
CONSENT ROD Delisted NPL FINDS HMIRS MLTS MINES NPL Liens PADS RAATS TRIS TSCA FTTS		1.000 1.000 TP TP TP 0.250 TP TP TP TP TP TP	0 0 NR NR 0 NR NR NR NR NR	0 0 NR NR NR NR NR NR NR NR NR	0 0 NR NR NR NR NR NR NR NR NR NR	0 0 NR NR NR NR NR NR NR NR	NR NR NR NR NR NR NR NR NR	0 0 0 0 0 0 0 0 0 0 0 0 0 0
STATE OR LOCAL ASTM SUPPLEMENTAL								
NC HSDS IMD		1.000 TP	0 NR	0 NR	0 NR	0 NR	NR NR	0 0
EDR PROPRIETARY DATABASES								
Coal Gas		1.000	0	0	0	0	NR	0

TP = Target Property

NR = Not Requested at this Search Distance

* Sites may be listed in more than one database

EDR ID Number Database(s) EPA ID Number

Coal Gas Site Search: No site was found in a search of Real Property Scan's ENVIROHAZ database.

NO SITES FOUND

City	EDR ID	Site Name	Site Address	Zip	Database(s)	Facility ID

NO SITES FOUND

To maintain currency of the following federal and state databases, EDR contacts the appropriate governmental agency on a monthly or quarterly basis, as required.

Elapsed ASTM days: Provides confirmation that this EDR report meets or exceeds the 90-day updating requirement of the ASTM standard.

FEDERAL ASTM STANDARD RECORDS

NPL: National Priority List

Source: EPA

Telephone: N/A

National Priorities List (Superfund). The NPL is a subset of CERCLIS and identifies over 1,200 sites for priority cleanup under the Superfund Program. NPL sites may encompass relatively large areas. As such, EDR provides polygon coverage for over 1,000 NPL site boundaries produced by EPA's Environmental Photographic Interpretation Center (EPIC).

Date of Government Version: 01/23/01 Date Made Active at EDR: 02/16/01 Database Release Frequency: Semi-Annually

Proposed NPL: Proposed National Priority List Sites

Source: EPA Telephone: N/A

> Date of Government Version: 01/23/01 Date Made Active at EDR: 02/16/01 Database Release Frequency: Semi-Annually

Date of Data Arrival at EDR: 02/05/01 Elapsed ASTM days: 11 Date of Last EDR Contact: 02/05/01

Date of Data Arrival at EDR: 02/05/01 Elapsed ASTM days: 11 Date of Last EDR Contact: 02/05/01

CERCLIS: Comprehensive Environmental Response, Compensation, and Liability Information System Source: EPA

Telephone: 703-413-0223

CERCLIS contains data on potentially hazardous waste sites that have been reported to the USEPA by states, municipalities, private companies and private persons, pursuant to Section 103 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). CERCLIS contains sites which are either proposed to or on the National Priorities List (NPL) and sites which are in the screening and assessment phase for possible inclusion on the NPL.

Date of Government Version: 12/28/00 Date Made Active at EDR: 02/28/01 Database Release Frequency: Quarterly Date of Data Arrival at EDR: 12/29/00 Elapsed ASTM days: 61 Date of Last EDR Contact: 03/26/01

CERCLIS-NFRAP: CERCLIS No Further Remedial Action Planned

Source: EPA

Telephone: 703-413-0223

As of February 1995, CERCLIS sites designated "No Further Remedial Action Planned" (NFRAP) have been removed from CERCLIS. NFRAP sites may be sites where, following an initial investigation, no contamination was found, contamination was removed quickly without the need for the site to be placed on the NPL, or the contamination was not serious enough to require Federal Superfund action or NPL consideration. EPA has removed approximately 25,000 NFRAP sites to lift the unintended barriers to the redevelopment of these properties and has archived them as historical records so EPA does not needlessly repeat the investigations in the future. This policy change is part of the EPA's Brownfields Redevelopment Program to help cities, states, private investors and affected citizens to promote economic redevelopment of unproductive urban sites.

Date of Government Version: 12/28/00 Date Made Active at EDR: 02/28/01 Database Release Frequency: Quarterly Date of Data Arrival at EDR: 12/29/00 Elapsed ASTM days: 61 Date of Last EDR Contact: 03/26/01

CORRACTS: Corrective Action Report Source: EPA Telephone: 800-424-9346 CORRACTS identifies hazardous waste handlers with RCRA corrective action activity.

Date of Government Version: 04/20/00 Date Made Active at EDR: 08/01/00 Database Release Frequency: Semi-Annually Date of Data Arrival at EDR: 06/12/00 Elapsed ASTM days: 50 Date of Last EDR Contact: 03/14/01

RCRIS: Resource Conservation and Recovery Information System

Source: EPA/NTIS Telephone: 800-424-9346

Resource Conservation and Recovery Information System. RCRIS includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA).

Date of Government Version: 06/21/00 Date Made Active at EDR: 07/31/00 Database Release Frequency: Semi-Annually Date of Data Arrival at EDR: 07/10/00 Elapsed ASTM days: 21 Date of Last EDR Contact: 01/30/01

ERNS: Emergency Response Notification System

Source: EPA/NTIS

Telephone: 202-260-2342

Emergency Response Notification System. ERNS records and stores information on reported releases of oil and hazardous substances.

Date of Government Version: 08/08/00 Date Made Active at EDR: 09/06/00 Database Release Frequency: Quarterly Date of Data Arrival at EDR: 08/11/00 Elapsed ASTM days: 26 Date of Last EDR Contact: 02/02/01

FEDERAL ASTM SUPPLEMENTAL RECORDS

BRS: Biennial Reporting System Source: EPA/NTIS Telephone: 800-424-9346 The Biennial Reporting System is a national system administered by the EPA that collects data on the generation and management of hazardous waste. BRS captures detailed data from two groups: Large Quantity Generators (LQG) and Treatment, Storage, and Disposal Facilities. Date of Government Version: 12/31/97 Date of Last EDR Contact: 03/19/01 Date of Next Scheduled EDR Contact: 06/18/01 Database Release Frequency: Biennially CONSENT: Superfund (CERCLA) Consent Decrees Source: EPA Regional Offices **Telephone: Varies** Major legal settlements that establish responsibility and standards for cleanup at NPL (Superfund) sites. Released periodically by United States District Courts after settlement by parties to litigation matters. Date of Government Version: N/A Date of Last EDR Contact: N/A Database Release Frequency: Varies Date of Next Scheduled EDR Contact: N/A ROD: Records Of Decision Source: NTIS Telephone: 703-416-0223 Record of Decision. ROD documents mandate a permanent remedy at an NPL (Superfund) site containing technical and health information to aid in the cleanup. Date of Government Version: 09/30/99 Date of Last EDR Contact: 01/09/01 Database Release Frequency: Annually Date of Next Scheduled EDR Contact: 04/09/01 **DELISTED NPL:** National Priority List Deletions Source: EPA

Telephone: N/A

The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) establishes the criteria that the EPA uses to delete sites from the NPL. In accordance with 40 CFR 300.425.(e), sites may be deleted from the NPL where no further response is appropriate.

Date of Government Version: 01/23/01 Database Release Frequency: Semi-Annually Date of Last EDR Contact: 02/05/01 Date of Next Scheduled EDR Contact: 05/07/01

FINDS: Facility Index System/Facility Identification Initiative Program Summary Report Source: EPA

Telephone: N/A

Facility Index System. FINDS contains both facility information and 'pointers' to other sources that contain more detail. EDR includes the following FINDS databases in this report: PCS (Permit Compliance System), AIRS (Aerometric Information Retrieval System), DOCKET (Enforcement Docket used to manage and track information on civil judicial enforcement cases for all environmental statutes), FURS (Federal Underground Injection Control), C-DOCKET (Criminal Docket System used to track criminal enforcement actions for all environmental statutes), FFIS (Federal Facilities Information System), STATE (State Environmental Laws and Statutes), and PADS (PCB Activity Data System).

Date of Government Version: 07/07/00 Database Release Frequency: Quarterly Date of Last EDR Contact: 01/09/01 Date of Next Scheduled EDR Contact: 04/09/01

HMIRS: Hazardous Materials Information Reporting System

Source: U.S. Department of Transportation Telephone: 202-366-4526 Hazardous Materials Incident Report System. HMIRS contains hazardous material spill incidents reported to DOT. Date of Government Version: 05/31/00 Database Release Frequency: Annually

Date of Last EDR Contact: 01/23/01 Date of Next Scheduled EDR Contact: 04/23/01

Date of Next Scheduled EDR Contact: 04/09/01

Date of Next Scheduled EDR Contact: 04/02/01

Date of Last EDR Contact: 01/09/01

Date of Last EDR Contact: 01/02/01

MLTS: Material Licensing Tracking System

Source: Nuclear Regulatory Commission

Telephone: 301-415-7169

MLTS is maintained by the Nuclear Regulatory Commission and contains a list of approximately 8,100 sites which possess or use radioactive materials and which are subject to NRC licensing requirements. To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 01/30/01 Database Release Frequency: Quarterly

MINES: Mines Master Index File

Source: Department of Labor, Mine Safety and Health Administration Telephone: 303-231-5959

Date of Government Version: 08/01/98 Database Release Frequency: Semi-Annually

NPL LIENS: Federal Superfund Liens

Source: EPA

Telephone: 205-564-4267

Federal Superfund Liens. Under the authority granted the USEPA by the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) of 1980, the USEPA has the authority to file liens against real property in order to recover remedial action expenditures or when the property owner receives notification of potential liability. USEPA compiles a listing of filed notices of Superfund Liens.

Date of Government Version: 10/15/91 Database Release Frequency: No Update Planned Date of Last EDR Contact: 02/20/01 Date of Next Scheduled EDR Contact: 05/21/01

PADS: PCB Activity Database System

Source: EPA

Telephone: 202-260-3936

PCB Activity Database. PADS Identifies generators, transporters, commercial storers and/or brokers and disposers of PCB's who are required to notify the EPA of such activities.

Date of Government Version: 01/01/00 Database Release Frequency: Annually Date of Last EDR Contact: 02/12/01 Date of Next Scheduled EDR Contact: 05/14/01

Source: EPA Telephone: 202-564-4104	
RCRA Administration Action Tracking System. RAATS contains re pertaining to major violators and includes administrative and ci actions after September 30, 1995, data entry in the RAATS dat the database for historical records. It was necessary to termina made it impossible to continue to update the information contai	vil actions brought by the EPA. For administration tabase was discontinued. EPA will retain a copy of ite RAATS because a decrease in agency resources
Date of Government Version: 04/17/95 Database Release Frequency: No Update Planned	Date of Last EDR Contact: 03/13/01 Date of Next Scheduled EDR Contact: 06/11/01
 TRIS: Toxic Chemical Release Inventory System Source: EPA Telephone: 202-260-1531 Toxic Release Inventory System. TRIS identifies facilities which reland in reportable quantities under SARA Title III Section 313. 	elease toxic chemicals to the air, water and
Date of Government Version: 12/31/97 Database Release Frequency: Annually	Date of Last EDR Contact: 03/26/01 Date of Next Scheduled EDR Contact: 06/25/01
Source: EPA Telephone: 202-260-1444 Toxic Substances Control Act. TSCA identifies manufacturers and TSCA Chemical Substance Inventory list. It includes data on th site.	•
Date of Government Version: 12/31/98 Database Release Frequency: Every 4 Years	Date of Last EDR Contact: 03/30/01 Date of Next Scheduled EDR Contact: 06/12/01
Source: EPA/Office of Prevention, Pesticides and Toxic Substand Telephone: 202-564-2501 FTTS tracks administrative cases and pesticide enforcement action TSCA and EPCRA (Emergency Planning and Community Right	ons and compliance activities related to FIFRA,
Agency on a quarterly basis. Date of Government Version: 08/30/00 Database Release Frequency: Quarterly	Date of Last EDR Contact: 03/26/01 Date of Next Scheduled EDR Contact: 06/25/01
FTTS INSP: FIFRA/ TSCA Tracking System - FIFRA (Federal Insec Source: EPA	ticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act
Telephone: 202-564-2501	Date of Last EDR Contact: 03/26/01

STATE OF NORTH CAROLINA ASTM STANDARD RECORDS

SHWS: Inactive Hazardous Sites Inventory

Source: Department of Environment, Health and Natural Resources Telephone: 919-733-2801 State Hazardous Waste Sites. State hazardous waste site records are t

State Hazardous Waste Sites. State hazardous waste site records are the states' equivalent to CERCLIS. These sites may or may not already be listed on the federal CERCLIS list. Priority sites planned for cleanup using state funds (state equivalent of Superfund) are identified along with sites where cleanup will be paid for by potentially responsible parties. Available information varies by state.

Date of Government Version: 01/05/01 Date of Data Arrival at EDR: 01/16/01 Date Made Active at EDR: 02/12/01 Elapsed ASTM days: 27 Database Release Frequency: Annually Date of Last EDR Contact: 01/16/01 SWF/LF: List of Solid Waste Facilities Source: Department of Environment, Health and Natural Resources Telephone: 919-733-0692 Solid Waste Facilities/Landfill Sites. SWF/LF type records typically contain an inventory of solid waste disposal facilities or landfills in a particular state. Depending on the state, these may be active or inactive facilities or open dumps that failed to meet RCRA Subtitle D Section 4004 criteria for solid waste landfills or disposal sites. Date of Government Version: 01/02/01 Date of Data Arrival at EDR: 01/30/01 Date Made Active at EDR: 02/28/01 Elapsed ASTM days: 29 Database Release Frequency: Semi-Annually Date of Last EDR Contact: 01/30/01 LUST: Incidents Management Database Source: Department of Environment, Health and Natural Resources Telephone: 919-733-1315 Leaking Underground Storage Tank Incident Reports. LUST records contain an inventory of reported leaking underground storage tank incidents. Not all states maintain these records, and the information stored varies by state. Date of Government Version: 01/25/01 Date of Data Arrival at EDR: 01/29/01 Date Made Active at EDR: 02/28/01 Elapsed ASTM days: 30 Database Release Frequency: Quarterly Date of Last EDR Contact: 01/29/01 UST: Petroleum Underground Storage Tank Database Source: Department of Environment, Health and Natural Resources Telephone: 919-733-1308 Registered Underground Storage Tanks. UST's are regulated under Subtitle I of the Resource Conservation and Recovery Act (RCRA) and must be registered with the state department responsible for administering the UST program. Available information varies by state program. Date of Government Version: 11/09/00 Date of Data Arrival at EDR: 12/08/00 Elapsed ASTM days: 38 Date Made Active at EDR: 01/15/01 Database Release Frequency: Quarterly Date of Last EDR Contact: 03/12/01 STATE OF NORTH CAROLINA ASTM SUPPLEMENTAL RECORDS HSDS: Hazardous Substance Disposal Site Source: North Carolina Center for Geographic Information and Analysis Telephone: 919-733-2090 Locations of uncontrolled and unregulated hazardous waste sites. The file includes sites on the National Priority

Date of Government Version: 06/21/95 Database Release Frequency: Biennially

List as well as those on the state priority list.

IMD: Incident Management Database Source: Department of Health and Natural Resources Telephone: 919-733-1315

> Date of Government Version: 01/25/01 Database Release Frequency: Quarterly

Date of Last EDR Contact: 03/05/01 Date of Next Scheduled EDR Contact: 06/04/01

Date of Last EDR Contact: 01/29/01 Date of Next Scheduled EDR Contact: 04/30/01

EDR PROPRIETARY DATABASES

Former Manufactured Gas (Coal Gas) Sites: The existence and location of Coal Gas sites is provided exclusively to EDR by Real Property Scan, Inc. ©Copyright 1993 Real Property Scan, Inc. For a technical description of the types of hazards which may be found at such sites, contact your EDR customer service representative.

Disclaimer Provided by Real Property Scan, Inc.

The information contained in this report has predominantly been obtained from publicly available sources produced by entities other than Real Property Scan. While reasonable steps have been taken to insure the accuracy of this report, Real Property Scan does not guarantee the accuracy of this report. Any liability on the part of Real Property Scan is strictly limited to a refund of the amount paid. No claim is made for the actual existence of toxins at any site. This report does not constitute a legal opinion.

HISTORICAL AND OTHER DATABASE(S)

Depending on the geographic area covered by this report, the data provided in these specialty databases may or may not be complete. For example, the existence of wetlands information data in a specific report does not mean that all wetlands in the area covered by the report are included. Moreover, the absence of any reported wetlands information does not necessarily mean that wetlands do not exist in the area covered by the report.

Flood Zone Data: This data, available in select counties across the country, was obtained by EDR in 1999 from the Federal Emergency Management Agency (FEMA). Data depicts 100-year and 500-year flood zones as defined by FEMA.

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 1999 from the U.S. Fish and Wildlife Service.



The EDR Radius MapTM **Report**

Bishop Road Weyerhaeuser Site SR 1156(Bishop Road)at US 264 Scranton, NC 27875

Inquiry Number: 0619588.1r

April 13, 2001

The Source For Environmental Risk Management Data

3530 Post Road Southport, Connecticut 06490

Nationwide Customer Service

 Telephone:
 1-800-352-0050

 Fax:
 1-800-231-6802

 Internet:
 www.edrnet.com

Appendix C

Transaction Screening Questionnaire

Appendix C

Transaction Screening Questionnaire

ARCADIS G&M of North Carolina, Inc.

Raleigh, North Carolina

Environmental Compliance Executive Summary				
Job No:	NC601023.0000	Date: 04/17/01		
Site ID:	Weyerhaeuser Site "H-6"	Name of Owner: Weyerhaeuser Corporation		
		Contact: Bryant Hardison, RLS, Acquisition Forester		
Location:	Bishop Road (SR 1156)	Name of Occupant (if different):		
	Hyde County, North Carolina			

Transaction Screen Questionnaire Comments:

- All Transaction Screen questions were answered "NO."
- Limited amounts of illegally dumped trash were observed along Muriel and Silverthorne Roads. The items consisted of domestic and construction-related debris.

Recommendations:

• ARCADIS G&M of North Carolina, Inc. recommends no further inquiry regarding this property and its purchase by North Carolina Department of Transportation for mitigation purposes.

Raleigh, North Carolina

Job No:	NC601023.0000
Site ID:	Weyerhaeuser Site "H-6"

Transaction Screen Questionnaire

Date: 04/17/01 **Name of Owner:** Weyerhaeuser Corporation Contact: Bryant Hardison, RLS, Acquisition Forester **Name of Occupant (if different):**

Location: Bishop Road (SR 1156)

Hyde County, North Carolina

1a. Is the property used for industrial use? NO NO 2a. Did you observe evidence or do you have any prior knowledge that the property has NO NO 2a. Did you observe evidence or do you have any prior knowledge that the adjoining NO NO 2a. Did you observe evidence or do you have any prior knowledge that the adjoining NO NO a. Is the property used as a gasoline station, motor repair facility, commercial printing NO NO facility, dry cleaners, photo developing laboratory, junkyard or landfill, or as a waste Terament, storage, disposal, processing, or recycling facility (if applicable, identify which)? NO NO 3b. Is the adjoining property used as a gasoline station, motor repair facility, commercial NO NO NO mining facility, dry cleaners, bhoto developing laboratory, junkyard or landfill, or as a waste treatment, storage, disposal, processing, or recycling facility (if applicable, identify which)? NO NO 4a. Did you observe evidence or do you have any prior knowledge that the adjoining property has been used as a gasoline station, motor repair facility, dry cleaners, bhoto developing laboratory, junkyard or landfill, or as a waste treatment, storage, disposal, processing, or recycling facility (if applicable, identify which)? MO NO 4a. Did you observe evidence or do you have any prior knowledge that the adjoining property has been used as a gasoline station, motor repair facility, commercial printing facility,	Question	<u>Owner</u>	Occupants (<u>if applicable</u>)	Observed During Site Visit
Ib. saw adjoining property used for an industrial use? NO NO 2a. Did you observe evidence or do you have any prior knowledge that the property has NO NO 2b. Did you observe evidence or do you have any prior knowledge that the adjoining NO NO 7a. Is the property used as gasoline station, motor repair facility, commercial printing NO NO 7a. Is the property used as gasoline station, motor repair facility, commercial printing NO NO 7b. Is the adjoining property used as a gasoline station, motor repair facility, commercial printing facility, dry cleaners, photo developing laboratory, junkyard or landfill, or as a waste treatment, storage, disposal, processing, or recycling facility (if applicable, identify which)? NO 4a. Did you observe evidence or do you have any prior knowledge that the property has NO NO been used as gasoline station, motor repair facility, commercial printing facility, dry cleaners, photo developing laboratory, junkyard or landfill, or as a waste treatment, storage, disposal, processing, or recycling facility (if applicable, identify which)? NO 4b. Joy ou observe evidence or do you have any prior knowledge that the adjoining proper yabs been used as gasoline station, motor repair facility, commercial printing facility, dry cleaners, photo developing laboratory, junkyard or landfill, or as a waste NO forget (1901) to you have any prior knowledge that the adjoining proper yabs benote evidence or do you have any prior knowledge that			(<u>ii upplicubic</u>)	
Tax. Did you observe evidence or do you have any prior knowledge that the property has NQ NQ 2b. Did you observe evidence or do you have any prior knowledge that the adjoining property has been used for an industrial use in the past? NO NO 2b. Did you observe evidence or do you have any prior knowledge that the adjoining property used as a gasoline station, motor repair facility, commercial printing facility, dry cleaners, photo developing laboratory, junkyard or landfill, or as a waste treatment, storage, disposal, processing, or recycling facility (if applicable, identify which)? NO 3a. Is the adjoining property used as a gasoline station, motor repair facility, commercial NQ NO NO abiticity, dry cleaners, photo developing laboratory, junkyard or landfill, or as a waste treatment, storage, disposal, processing, or recycling facility (if applicable, identify which)? NO NO 4a. Did you observe evidence or do you have any prior knowledge that the property has been used as a gasoline station, moor repair facility, commercial printing facility, dry cleaners, photo developing laboratory, junkyard or landfill, or as a waste treatment, storage, disposal, processing, or recycling facility (if applicable, identify which)? NO NO 5a. Are there currently and manged or discarded automotive or industrial bateries, psetial developing laboratory, junkyard or landfill, or as a waste treatment, storage, disposal, processing, or recycling facility (if applicable, identify which)? So 5b. Did you observe evidence or do you have any prior knowledge that the adjoi				
been used for an industrial use in the past? 20. Did you observe evidence or do you have any prior knowledge that the adjoining Property has been used for an industrial use in the past? 30. Is the property used as a gasoline station, motory, inkyard or landfill, or as a waste treatment, storage, disposal, processing, or recycling facility (if applicable, identify which)? 31. Is the adjoining property used as a gasoline station, motor repair facility, commercial NQ Property has been used as a gasoline station, motor repair facility, or memory in the property has been used as a gasoline station, motor repair facility, or pair facility, or mercial NQ Protect evidence or do you have any prior knowledge that the property has NO NO been used as a gasoline station, motor repair facility, commercial printing facility, dry cleaners, photo developing laboratory, junkyard or landfill, or as a waste reatment, storage, disposal, processing, or recycling facility (if applicable, identify which)? 40. Did you observe evidence or do you have any prior knowledge that the adjoining Property has been used as a gasoline station, motor repair facility, commercial printing facility, dry cleaners, photo developing laboratory, junkyard or landfill, or as a waste treatment, storage, disposal, processing, or recycling facility (if applicable, identify which)? 40. Did you observe evidence or do you have any prior knowledge that the adjoining Property has been used as a gasoline station, motor repair facility, commercial printing facility, dry cleaners, photo developing laboratory, junkyard or landfill, or as a waste treatment. storage, disposal, processing, or recycling facility (if applicable, identify which)? 40. Did you observe evidence or do you have any prior knowledge that there have been NO NO NO Property has been used as a gasoline station, motor used at the property or facility? 51. Did you observe evidence or do you have any prior knowledge that there have been NO NO NO NO Property as the facility? 52. Did you observe ev				
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10a. Are there currently any registered or unregistered storage tanks (above or NO YES				
		NO		YES
	underground) located on the property?			

ARCADIS G&M of North Carolina, Inc.

Raleigh, North Carolina

		1 450 2 01
		Transaction Screen Questionnaire
Job No:	NC601023.0000	Date: 04/17/01
Site ID:	Weyerhaeuser Site "H-6"	Name of Owner: Weyerhaeuser Corporation
		Contact: Bryant Hardison, RLS, Acquisition Forester

Name of Occupant (if different):

Location: Bishop Road (SR 1156) Hyde County, North Carolina

Question	Owner	Occupants (<u>if applicable</u>)	Observed During Site Visit
10b. Did you observe evidence or do you have any prior knowledge that there have been	NO		NO
previously, any registered or unregistered storage tanks (above or underground) located			
on the property?			
11a. Are there currently any vent pipes, fill pipes, or access ways indicating a fill pipe	<u>NO</u>		NO
a fill pipe protruding from the ground on the property or adjacent to any structure located			
on the property?			
11b. Did you observe evidence or do you have any prior knowledge that there have been	NO		NO
previously, any vent pipes, fill pipes, or access ways indicating a fill pipe protruding from			
the ground or adjacent to any structure located on the property?			
12a. Are there currently any flooring, drains, or walls located within the facility that are	NO		NO
stained by substances other than water or are emitting foul odors?			
12b. Did you observe evidence or do you have any prior knowledge that there have been	<u>NO</u>		NO
previously, any flooring, drains, or walls located within the facility that were stained by	110		110
substances other than water or were emitting foul odors?			
13a. If the property is served by a private well or non-public water system, is there	NO		NO
evidence or do you have any prior knowledge that contaminants have been identified in	<u>110</u>		110
the well or system that exceeded guidelines applicable to the water system?			
13b. If the property is served by a private well or non-public water system, is there	NO		NO
	<u>NO</u>		NO
evidence or do you have any prior knowledge that the well has been designated as contaminated by any government environmental/health agency?			
	NO		
14. Does the owner or occupant of the property have any knowledge of environmental	<u>NO</u>		
liens or governmental notification relating to past or recurrent violations of			
environmental laws with respect to the property or any facility located on the property?	NO		
15a. Has the owner or occupant of the property been informed of the past existence of	<u>NO</u>		
hazardous substances or petroleum products with respect to the property or any facility			
located on the property?			
15b. Has the owner or occupant of the property been informed of the current existence of	<u>NO</u>		
hazardous substances or petroleum products with respect to the property or any facility			
located on the property?			
15c. Has the owner or occupant of the property been informed of the past existence of	<u>NO</u>		
environmental violations with respect to the property or any facility located on the			
property?			
15d. Has the owner or occupant of the property been informed of the current existence	<u>NO</u>		
of environmental violations with respect to the property or any facility located on the			
property?			
16. Does the owner or occupant of the property have any knowledge of any	NO		
environmental site assessment of the property or facility that indicated the presence			
of hazardous substances or petroleum products on, or contamination of, the property or			
recommended further assessment of the property?			
17. Does the owner or occupant of the property know of any past, threatened, or pending	NO		
lawsuits or administrative proceedings concerning a release or threatened release of any			
hazardous substance or petroleum products involving the property by any owner or			
occupant of the property?			
18a. Does the property discharge waste water, on or adjacent to the property, other than	<u>NO</u>		NO
storm water, into a stormwater sewer system?	<u>- · · ·</u>		
18b. Does the adjoining property discharge waste water, on or adjacent to the property,	NO		NO
other than storm water, into a sanitary sewer system?	<u></u>		<u></u>
19. Did you observe evidence or do you have any prior knowledge that any hazardous	NO		NO
substances or petroleum products, unidentified waste materials, tires, automotive or	110		1.0
industrial batteries, or any other waste materials have been dumped above grade, buried			
and/or burned on the property?			

and/or burned on the property?

ARCADIS G&M of North Carolina

Raleigh, North Carolina

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Transaction Screen Questionnaire				
Job No:	NC601023.0000	Date: 04/17/01		
Site ID:	Weyerhaeuser Site "H-6"	Name of Owner: Weyerhaeuser Corporation		
		Contact: Bryant Hardison, RLS, Acquisition Forester		
Location:	Bishop Road (SR 1156)	Name of Occupant (if different):		
	Hyde County, North Carolina			

Question 20. Is there a transformer, capacitor, or any hydraulic equipment for which there are any records indicating the presence of PCBs?	<u>Owner</u> <u>NO</u>	Occupants (<u>if applicable</u>)	Observed <u>During Site Visit</u> <u>NO</u>
Government Records/Historical Sources Inqu	•		
21. Do any of the following Federal government record systems list the property or any property v	vithin the ci	rcumference of the a	area noted below:
National Priorities List - within 1.0 mile (1.6 km)			NO
CERCLIS List - within 0.5 mile (0.8 km)			NO
RCRA CORRACTS Facilities - within 1.0 mile (1.6 km)			NO
RCRA non-CORRACTS TSD Facilities - within 0.5 mile (0.8 km)			NO
22. Do any of the following state record systems list the property or any property within the circum	nference of	the area noted below	:
List maintained by state governmental agency of hazardous waste sites identified for inver- remediation that is the state agency equivalent to NPL - within approximately 1.0 mile (1		:	NO
List maintained by state governmental agency of sites identified for investigation or reme state equivalent to CERCLIS - within 0.5 mile (0.8 km)	diation that	is the	<u>NO</u>
Leaking Underground Storage Tank (LUST) List - within 0.5 mile (0.8 km)			NO
Solid Waste/Landfill Facilities - within 0.5 mile (0.8 km)			NO

23. Based upon a review of fire insurance maps or consultation with the local fire department serving the property, all as specified in ASTM standards (E 1528-00), are any buildings or other improvements on the property or on an adjoining property identified as having been used for an industrial use or uses likely to lead to contamination of the property? <u>NO</u>

The preparer of this questionnaire must complete and sign the following statements. (For definition of "preparer" and "user" see 5.3 or 3.3.25.)

The questionnaire was completed by:		If the preparer is different than the user, complete the following:		
Name	Lane Sauls	Name of User	N.C. Dept. of Transportation	
Title	Senior Scientist	User's Address	1548 Mail Service Center	
			Raleigh, North Carolina 27699-1548	
Firm	ARCADIS G&M of North Carolina, Inc.			
Address	2301 Rexwoods Drive, Suite 102	User's Phone Number	<u>(919) 733-3141</u>	
	Raleigh, North Carolina 27607			
Phone Number	(919) 782-5511	Preparer's relationship to site	<u>Scientist</u>	
Date	04/17/01	Preparer's relationship to user	Consultant	

The preparer presents to the best of the preparer's knowledge the above statements and facts are true and correct and to the best of the preparer's actual knowledge no material facts have been suppressed or misstated.

Signature

Appendix D

U.S. Army Corps of Engineers Routine Wetland Determination Data Forms

Appendix D

U.S. Army Corps of Engineers Routine Wetland Determination Data Forms

	and the second secon
Project/Site: BISHOP ROAD MITIGATION SITE Applicant/Owner: NCDOT Investigator(s): CINDY CARR, MARTHA BREWSTER, HAROLD BRADY Do Normal Circumstances exist on the site? Yes Is the site significantly disturbed (Atypical Situation)? Yes Is this area a potential Problem Area? Yes (If needed, explain on reverse) Yes	Date: 11/26/2001 County: HYDE State: NORTH CAROLINA No Community ID: No Transect ID: No Plot ID:
VEGETATION	
Dominant Plant Species Stratum Indicator	Dominant Plant Species Stratum Indicator
1. Gelsemium sempervirens vine FAC	9. Smilax rotundifolia vine FAC
2. Pteridium aquilinum herb FACU	10. Myrica heterophylla shrub FACW
3. Vaccinium sp. shrub FACW, FACU	-11
4. Liquidambar styraciflua tree FAC	12.
5. Rubus sp. shrub FAC-, FACW	13
6. Osmunda regalis herb OBL	14
7. Quercus laurifolia tree FACW	15. <u></u>
8. Smilax bona-nox vine FAC	16.
Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC	>-)>50%
Remarks:	
HYDROLOGY	
Recorded Data (Describe in Remarks) Stream, Lake, or tide Gauge Aerial Photographs Other X No Recorded Data Available	Wetland Hydrology Indicators: Primary Indicators: Inundated Saturated in Upper 12 Inches Water Marks Drift Lines Sediment Deposits
Field Observations: Depth of Surface Water: <u>N/A</u> (in.)	Drainage Patterns in Wetlands Secondary Indicators (2 or more required): Oxidized Root Channels in Upper 12 Inches Water-Stained Leaves
Depth to Free Water in Pit: <u>N/A</u> (in.)	Local Soil Survey Data FAC-Neutral Test
Depth to Saturated Soil: <u>N/A</u> (in.)	Other (Explain in Remarks)

Remarks: No indicators were observed

Map Unit Name (Series and Phase): Fork fine sandy loam Taxonomy (Subgroup) Aeric Endoaqualfs			Drainage Class: <u>somewhat poorly</u> Field Observations Confirm Mapped Type? Yes No		
Profile Description: Depth (inches) Hori:	Matrix Color <u>(Munsell Moist)</u>	Mottle Colors (<u>Munsell Moist)</u>	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.	
<u> </u>	e estas independente en una presenta de la set	ne na sere contration de la contration.	n and a star star in the star star star star star star star star	organic	
<u> </u>	<u>10 YR 3/1</u>	10 YR 6/2	few, coarse, faint	granular, friable, sandyloam	
<u> </u>	<u>2.5 Y 6/4</u>	2.5 ¥ 6/8	few, coarse, faint	granular, friable, sandyloam	
<u> </u>	<u>2.5 ¥ 6/4</u>	7.5 YR 5/8	few, fine, distinct	friable, nonsticky, sandyloam	
	· · · · · · · · · · · · · · · · · · ·	10 YR 7/1	few, coarse, distinct		
			· · · · · · · · · · · · · · · · · · ·		
Hydric Soil Indicators:					
Histosol Histic Epiped Sulfidic Odo x Aquic Moista Reducing Co x Gleyed or Lo	r ıre Regime		Concretions High Organic Conten Organic Streaking in Listed on Local Hydr Listed on National H Other (Explain in Re	ic Soils List ydric Soils List	
Remarks: Fo	rk is a Hydric B soil				
WETLAND DET	FERMINATION				
Hydrophytic Vegetation Wetland Hydrology Pres Hydric Soils Present?	ent? Yes	No No Is this S	ampling Point Within a Wet	and? Yes No	
Remarks:					
	المنابع التي والمرابع المنابع المنابع من المن المن المن المن المن المن المن ال			Approved by HQUSACE 3/92	

Project/Site: BISHOP ROAD MT Applicant/Owner: NCDOT Investigator(s): MARTHA BREWST Do Normal Circumstances exist on the Is the site significantly disturbed (Atyp Is this area a potential Problem Area? (If needed, explain on reverse)	ER, HAROLD BRAI)Y Yes Yes Yes	No No	Date: County: State: Community I Transect ID: Plot ID:	NORTH	/26/2001 HYDE I CAROLINA ar old pine A 2
VEGETATION Dominant Plant Species	Stratum	Indicator	Domina	nt Plant Species	Stratum	Indicator
a de la servició de la contra de	and the second of the	FAC	9. Quercu		tree	FAC
1. Liquidambar styraciflua	tree	an area su		<u>s ngru</u>		
2. <u>Acer rubrum</u>	tree	FAC	10	······································	·	
3. <u>Symplocos tinctoria</u>	shrub	FAC	11.			
4. <u>Пех ораса</u>	shrub	FAC-	12.	na an bhailtean 19 m - Carlona an Airtean	i najstrativa. Tr	
5. Vaccinium stamineum	shrub	FACU	13.			
6. Smilax smallii	vine	FACU	14.		<u></u>	2 1
7. Gelsemium sempervirens	vine	FAC	15.	· · · · · · · · · · · · · · · · · · ·		
8. Myrica heterophylla	shrub	FACW	16	196 N. 30	g ang sa	
Remarks:						
HYDROLOGY						۰۰ ۲۰۰۰ ۲۰۰۰ ۲۰۰۰
Recorded Data (Describe in Rema Stream, Lake, or tide Aerial Photographs Other X No Recorded Data Available				Irology Indicators: Indicators: Saturated in Upper 12 Water Marks Drift Lines Sediment Deposits	2 Inches	
Field Observations:			Gerand	Drainage Patterns in ary Indicators (2 or mo		
Depth of Surface Water:	<u>N/A</u> (in.)			Oxidized Root Chanr Water-Stained Leaves	els in Upper 12	l Inches
Depth to Free Water in Pit:	<u>N/A</u> (in.)		X	Local Soil Survey Da	ta.	
Depth to Saturated Soil:	<u>N/A</u> (in.)			FAC-Neutral Test Other (Explain in Rea	narks)	
Remarks: No obvious surface hydrolog	gic indicators.					

SOIL	S
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Map Unit Name (Series and Phase): <u>Yonge</u>	s loam		Drainage Class: <u>poor</u> Field Observations	1 <u>y</u>
Taxonomy (Subgroup) <u>Typic</u>	Endoaqualfs		Confirm Mapped Type?	Yes
Profile Description: Depth (inches) Horizon	Matrix Color (<u>Munsell Moist)</u>	Mottle Colors (<u>Munsell Moist)</u>		Texture, Concretions, Structure, etc. organic duff
<u>2-6"</u>	10 YR 3/1			sandy loam, friable, granular
<u>6-18" Big1</u>	10 YR 7/1	10 YR 6/6	few, medium, faint	sandy loam, friable, granular
<u></u>	<u>5 YR 7/2</u>	7.5 YR 7/6	<u>common, medium, distinct</u>	sandy clay, slightly sticky
۵ (در ۲۰۰۰ در ۲۰۰۰ ۲۰۰۰ ۲۰۰۰ ۲۰۰۰ ۲۰۰۰ ۲۰۰		2.5 YR 8/2	many, coarse, prominent	الله ((((((((((((((((((
n an	a ann an Airte an Air Airte an Airte an Air		an gana ana ang kanang kan Ang kanang ka Ang kanang ka	
Hydric Soil Indicators:				an an an an tha an
Histosol Histic Epipedon Sulfidic Odor X Aquic Moisture Reg Reducing Condition: X Gleyed or Low-Chro	s a constant provident and		Concretions High Organic Content Organic Streaking in S X Listed on Local Hydri Listed on National Hy Other (Explain in Ren	c Soils List dric Soils List
Remarks:			e an	
WETLAND DETERM	AINATION			
Hydrophytic Vegetation Present Wetland Hydrology Present? Hydric Soils Present?	Yes	No No Is th	is Sampling Point Within a Wetle	and? Yes No
Remarks:				
en en en el respersen parte de la managera de la m La managera de la mana		alay in a substantian a substantian Anna a substantian a substan	a para mangana kana sa kana sa Kana sa kana sa	Approved by HQUSACE 3/92

Project/Site: BISHOP ROAD MITIGATION SITE Applicant/Owner: NCDOT Investigator(s): CINDY CARR, MARTHA BREWSTER, HAROLD	Date: 11/26/2001 County: HYDE BRADY, TOM BARRETT State:
Do Normal Circumstances exist on the site? Is the site significantly disturbed (Atypical Situation)? Is this area a potential Problem Area? (If needed, explain on reverse)	YesNoCommunity ID:30 year old pineYesNoTransect ID:AYesNoPlot ID:3
VEGETATION	na hay na para ana ang ang ang ang ang ang ang ang an
Dominant Plant Species Stratum Indice	tor Dominant Plant Species Stratum Indicator
1. Liquidambar syraciflua tree FAC	<u>2 44 1 9. 45 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 </u>
2. Quercus nigra FAC	2 ⁴⁴ - 10. <u></u>
3. Smilax rotundifolia FAC	1 , where 11 , the second se
4. <u>Nex opaca</u> FAC	- 12.
5. <u>Vitis rotundifolia</u> vine FAC	13
6. Toxicondendron radicans vine FAC	I4
7. Chasmanthium laxum herb FACM	
8. Vaccinium stamineum	<u>y</u> 16.
Percent of Dominant Species that are OBL, FACW, or FAC (excludi	ng FAC-). >75%
Remarks:	
HYDROLOGY	
Recorded Data (Describe in Remarks) Stream, Lake, or tide Gauge Aerial Photographs Other X_No Recorded Data Available Field Observations:	Wetland Hydrology Indicators: Primary Indicators: Inundated Saturated in Upper 12 Inches Water Marks Drift Lines Sediment Deposits Drainage Patterns in Wetlands
Depth of Surface Water: <u>N/A</u> (in.)	Secondary Indicators (2 or more required): Oxidized Root Channels in Upper 12 Inches
	Water-Stained Leaves
Depth to Free Water in Pit: <u>N/A</u> (in.)	X Local Soil Survey Data

Remarks: No obvious surface hydrologic indicators.

Map Unit Name (Series and Phase):Argent loamTaxonomy (Subgroup)Typic Endoaqualfs	Drainage Class: <i>poorly or very poorly</i> Field Observations Confirm Mapped Type ² Yes No
	ottle Colors Mottle Texture, Concretions, <u>insell Moist)</u> Abundance/Contrast Structure, etc. organic
<u>2-8"</u> <u>10 YR 3/1</u>	sandy loam, friable, granular
<u></u>	2.5 Y 6/6 few, medium, distinct sandy loam, friable, granular
<u></u>	0 YR 6/6 common, medium, distinct sandy clay, slightly sticky
	5 YR 7/8 common, medium, distinct
Hydric Soil Indicators: Histosol Histic Epipedon Sulfidic Odor X Aquic Moisture Regime Reducing Conditions X Gleyed or Low-Chroma Colors	Concretions High Organic Content in Surface Layer in Sandy Soils Organic Streaking in Sandy Soils X Listed on Local Hydric Soils List Listed on National Hydric Soils List Other (Explain in Remarks)
Remarks:	
WETLAND DETERMINATION	
Hydrophytic Vegetation Present?YesNoWetland Hydrology Present?YesNoHydric Soils Present?YesNo	Is this Sampling Point Within a Wetland? Yes No
Remarks:	
	Approved by HQUSACE 3/92

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		A start the additional and	and the second
Project/Site: BISHOP ROAD MITIGATION SITE Applicant/Owner: NCDOT Investigator(s): CINDY CARR, MARTHA BREWSTER, HAROLD	BRADY, TOM BARRETT	Date: County: State:	11/26/2001 HYDE NORTH CAROLINA
Do Normal Circumstances exist on the site? Is the site significantly disturbed (Atypical Situation)? Is this area a potential Problem Area? (If needed, explain on reverse)	Yes No Yes No Yes No	Community ID: Transect ID: Plot ID:	30 year old pine A 4
VEGETATION	·	and a second	and a start of the second
Dominant Plant Species Stratum Indic	ator <u>Domina</u> r	nt Plant Species Strat	um Indicator
1. <u>Quercus nigra</u> <u>tree</u> FA	C9. <u>Ilex opa</u>	icashri	ub FAC-
2. <u>Quercus michauxii tree FAC</u>	V- 10. <u>Quercus</u>	s phellos tree	e FACW-
3. <u>Magnolia virginiana tree FAC</u>	W 11. Symploc	cos tinctoriashri	ub FAC
4. <u>Acer rubrum tree FA</u>	12.	and a strain and a s	
5. <u>Pteridium aquilinum herb FAC</u>	<u>U</u> 13		
6. <u>Vaccinium stamineum shrub FAC</u>	<u>U</u> 14	· · · · · · · · · · · · · · · · · · ·	;
7. Chasmanthium laxum herb FAC	<u>v-</u> 15	· · · · · · · · ·	
8. <u>Smilax rotundifolia</u> vine FAC	16.		
Percent of Dominant Species that are OBL, FACW, or FAC (exclud Remarks:	ing FAC-).	>75%	
HYDROLOGY Basardad Data (Describe in Remarka)	Wetland Hyd	rology Indicators:	
Recorded Data (Describe in Remarks) Stream, Lake, or tide Gauge Aerial Photographs Other X No Recorded Data Available		Indicators: Inundated Saturated in Upper 12 Inch Water Marks Drift Lines	ατο το τ
Field Observations:		Sediment Deposits Drainage Patterns in Wetlan	nds
Depth of Surface Water: <u>N/A</u> (in.)	Seconda	ry Indicators (2 or more requ Oxidized Root Channels in	Upper 12 Inches
Depth to Free Water in Pit: <u>N/A</u> (in.)		Water-Stained Leaves Local Soil Survey Data	
Depth to Saturated Soil: <u>N/A</u> (in.)		FAC-Neutral Test Other (Explain in Remarks)) (* 1997)) (* 1997)
Remarks: No obvious hydrologic indicators 0-13", however two see	condary indicators exist.		

Map Unit Name (Series and Phase): <u>Hydeland silt loam</u>	Drainage Class: very poorly
Taxonomy (Subgroup) Umbric Endoaqualfs	Field Observations Confirm Mapped Type? Yes No
Profile Description: Matrix Color Mottle Colors Depth Matrix Color Mottle Colors (inches) Horizon (Munsell Moist) (Munsell Moist)	Mottle Texture, Concretions, Abundance/Contrast Structure, etc.
0-13" <u>A 10 YR 3/1</u> wavy boundry	silt loam, friable, granular
<u>13-24+</u> <u>Big</u> <u>2.5 YR 5/2</u>	sandy loam, friable, granular, fine
	n an
Hydric Soil Indicators: Histosol Histic Epipedon Sulfidic Odor X Aquic Moisture Regime Reducing Conditions X Gleyed or Low-Chroma Colors	Concretions High Organic Content in Surface Layer in Sandy Soils Organic Streaking in Sandy Soils X Listed on Local Hydric Soils List Listed on National Hydric Soils List Other (Explain in Remarks)
Remarks:	

WETLAND DETERMINATION

	and the second		
Hydrophytic Vegetation Present?	Yes No		
Wetland Hydrology Present?	Yes No	a an	
Hydric Soils Present?	Yes No	Is this Sampling Point Within a Wetland?	Yes No
	1.16		

Remarks:

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	and the second		the second s		
Project/Site: BISHOP ROAD MITIGATIC Applicant/Owner: NCDOT Investigator(s): MARTHA BREWSTER, HAD			Date: County: State:	H	27/2001 IYDE CAROLINA
Do Normal Circumstances exist on the site? Is the site significantly disturbed (Atypical Situ Is this area a potential Problem Area? (If needed, explain on reverse)	Yes Yes Yes	No	Communit Transect ID Plot ID:		r old pine B I
VEGETATION		· · · · · · · · · · · ·	an an the second	in the second	internationale de la companya de la Companya de la companya de la company Companya de la companya de la company
	atum Indicator	Dominat	nt Plant Species	<u>Stratum</u>	Indicator
1. <u>Quercus rubra</u> tre	ee FACU	9. <u>Ilex opa</u>	<u>1ca</u>	shrub	FAC-
2. Quercus michuaxii tra	eeFACW-	10. <u>Quercus</u>	s nigra	tree	FAC
3. <u>Acer rubrum</u> tre	ee FAC	11. Toxicod	lendron radicans	vine	FAC
4. <u>Smilax bona-nox</u> vii	ne FAC	12.	na serie de la composición de la compo Composición de la composición de la comp	. <u></u>	
5. <u>Smilax rotundifolia</u> vin	ne FAC	13.	and and a second se	- 1945 - 1947 - 1947 - 1947 - 1947 - 1947 - 1947 - 1947 - 1947 - 1947 - 1947 - 1947 - 1947 - 1947 - 1947 - 1947	
6. Chasmanthium laxum he	rb FACW-	14.			
7. Vaccinium stamineum shr	rub FACU	15.		asso factoria e	
8. <u>Myrica cerifera</u> shr	rub FAC+	16.	ti se se se		
Remarks:					
HYDROLOGY					
Recorded Data (Describe in Remarks) Stream, Lake, or tide Gauge Aerial Photographs Other No Recorded Data Available			rology Indicators: indicators: Inundated Saturated in Upper Water Marks Drift Lines	12 Inches	
Field Observations: Depth of Surface Water: <u>N/A</u>		Seconda	Sediment Deposits Drainage Patterns in ury Indicators (2 or m Oxidized Root Char	n Wetlands nore required):	Inches
			Water-Stained Leav Local Soil Survey D	ves	
Depth to Free Water in Pit: <u>N/A</u> Depth to Saturated Soil: N/A			FAC-Neutral Test Other (Explain in R	14.000	
Depth to Saturated Soil: <u>N/A</u>	(III.)			ciliai ksj	an a
Remarks: No obvious surface hydrologic indic	ators				

Map Unit Name (Series and Phase): Taxonomy (Subgroup)	Yonges loam Typic Endoaqualfs		Drainage Class: <u>poorl</u> Field Observations Confirm Mapped Type	
Profile Description: Depth	Matrix Color	Mottle Colors	Mottle	Texture, Concretions,
<u>(inches)</u> <u>Horiz</u>	on (Munsell Moist)	(<u>Munsell Moist</u>)	Abundance/Contrast	Structure, etc.
1-5" A	5 YR 4/1		and a start of the s Start of the start of	silt loam, friable, granular
<u>5-15"</u> <u>B1</u>	<u> </u>	······································		
<u>15-24+ B2</u>	5 YR 7/1	5 YR 5/8	common, distinct, medium	silty clay, plastic
		7.5 YR 7/6	common, distinct, medium	
Hydric Soil Indicators: Histosol Sulfidic Odor X Aquic Moistu Reducing Cor X Gleyed or Low	ure Regime nditions		Concretions High Organic Content i Organic Streaking in Sa X Listed on Local Hydric Listed on National Hyd Other (Explain in Rem	Soils List ric Soils List
	n the B horizon until 15" below th scription indicates mottling begin.			
WETLAND DET	FERMINATION			

Is this Sampling Point Within a Wetland? Yes No

Remarks:

Approved by HQUSACE 3/92

Project/Site: BISHOP ROAD MI Applicant/Owner: NCDOT Investigator(s): CINDY CARR, TOM Do Normal Circumstances exist on the Is the site significantly disturbed (Atyp Is this area a potential Problem Area? (If needed, explain on reverse)	M BARRETT site?	Yes Yes Yes	No No No	Date: County: State: Community Transect ID Plot ID:	NORTH	27/2001 HYDE CAROLINA plantation B 2
VEGETATION						
Dominant Plant Species	Stratum	Indicator	Domina	nt Plant Species	<u>Stratum</u>	Indicator
1. <u>Quercus michauxii</u>	tree	FACW-	9. Vaccini	um stamineum	shrub	FACU
2. Liquidambar styraciflua	tree/shrub	FAC			· · · · · · · · · · · · · · · · · · ·	
3. Quercus nigra	tree/shrub	FAC	11.			
4. <u>Aronia arbutifolia</u>	shrub	FACW	12.	· · · · · · · · · · · · · · · · · · ·	· · · · · · · · · · · · · · · · · · ·	
5. <u>Pinus taeda</u>	tree	planted	13	· · · · · · · · · · · · · · · · · ·		
6. Smilax rotundifolia	vine	FAC	14.			1
7. <u>Smilax smallii</u>	vine	FACU	15.		le par Nue	
8. <u>Pteridium aquilinum</u>	herb	FACU	16.		nta de parte de	
Remarks:						
HYDROLOGY Recorded Data (Describe in Rema Stream, Lake, or tide Aerial Photographs Other				rology Indicators: ndicators: Inundated Saturated in Upper		
X No Recorded Data Available				Water Marks Drift Lines	e segnañ cen co Sensore	
Field Observations:	r Geografia a server por server Geografia a server server Geografia a server server server		Seconda	Sediment Deposits Drainage Patterns in ry Indicators (2 or m	ore required):	
Depth of Surface Water:	<u>N/A</u> (in.)		· · · · · · · · · · · · · · · · · · ·	Oxidized Root Char Water-Stained Leav	es	Inches
Depth to Free Water in Pit:	<u>N/A</u> (in.)		<u></u>	Local Soil Survey D FAC-Neutral Test	e da la la composición de la composición	
Depth to Saturated Soil:	<u>N/A</u> (in.)	an a		Other (Explain in R	emarks)	
Remarks: No hydrological india	cators were observ	ed.				

Map Unit Name (Series and Phase): Argent loam Taxonomy (Subgroup) Typic Endoaqualfs	Drainage Class: <i>poorly or very poorly</i> Field Observations Confirm Mapped Type? Yes No
Profile Description: Matrix Color Mottle Colors Depth Matrix Color Mottle Colors (inches) Horizon (Munsell Moist) (Munsell Moist)	Mottle Texture, Concretions, Abundance/Contrast Structure, etc.
<u>0-3" A 10 YR 4/1</u> 3-8" BE 10 YR 4/2	silt loam, friable, nonsticky
<u>3-8 BE 10 IR 4/2</u> 8-16" B1 2.5 YR 5/1 7.5 YR 5/8	few, fine, distinct silt loam, friable
<u>16-24+</u> <u>B2</u> <u>2.5 Y 6/1</u> <u>7.5 YR 5/8</u>	few, fine, distinct silt clay loam, slightly sticky
Hydric Soil Indicators: Histosol Sulfidic Odor X Aquic Moisture Regime Reducing Conditions X Gleyed or Low-Chroma Colors	Concretions High Organic Content in Surface Layer in Sandy Soils Organic Streaking in Sandy Soils X Listed on Local Hydric Soils List Listed on National Hydric Soils List Other (Explain in Remarks)
Remarks:	
WETLAND DETERMINATION	
Hydrophytic Vegetation Present?YesNoWetland Hydrology Present?YesNoHydric Soils Present?YesNo	this Sampling Point Within a Wetland? Yes No

Remarks:

Approved by HQUSACE 3/92

Project/Site:BISHOP ROAD MITIGATApplicant/Owner:NCDOTInvestigator(s):MARTHA BREWSTER, HADo Normal Circumstances exist on the site?Is the site significantly disturbed (Atypical SiteIs this area a potential Problem Area?(If needed, explain on reverse)	ROLD BRADY	s No	Date: County: State: Community I Transect ID: Plot ID:	H NORTH	7/2001 YDE CAROLINA r old pine B 3
يستعاد والمتعاد والمتعاد المتعاد والمتعاد والمتعاد	en e regenere en en	er ante ante der ante	- 1. B. W.		
VEGETATION Dominant Plant Species	ratum Indicator	Dominant P	lant Species	Stratum	Indicator
1. Liquidambar styraciflua t	ree FAC	9. Smilax bond	a-nox	vine	FAC
2. Acer rubrum	ree FAC	10. <u>Nex opaca</u>	an an Anna An Anna Anna Anna Anna Anna A	shrub	FAC-
3. Quercus nigra	ree FAC	11.	an a		
4. Gelsemium sempervirens v	ine FAC	12.		and a second	
5. Myrica cerifera sł	nrub FAC+	13	an an an An Sara	een eugeneere en erste kinere	a da sara da sa sa
6. Vaccinium arboreum sł	nrub FACU	14			
7. Smilax rotundifolia v	ine FAC	15.		o se ta segura entre	
8. Quercus michauxii t	ree FACW-	16.	, Arg	an a	$\mu = \frac{1}{2} \left[\frac{1}{2} + \frac{1}{2} \right]$
Remarks:					
HYDROLOGY				: · · ·	· · ·
Recorded Data (Describe in Remarks) Stream, Lake, or tide Gauge Aerial Photographs Other X No Recorded Data Available		Sat Wa Dri	cators: indated turated in Upper 12 ater Marks ift Lines	2 Inches	
Field Observations:		Dra	diment Deposits ainage Patterns in '		
Depth of Surface Water: N/A	_(in.)	Ox	ndicators (2 or mo idized Root Chann	els in Upper 12	inches
Depth to Free Water in Pit: N/A	_(in.)	X Loc	ater-Stained Leaves cal Soil Survey Da		
Depth to Saturated Soil: <u>N/A</u>	_(in.)		C-Neutral Test her (Explain in Rei	marks)	
Remarks: No obvious surface hydrologic ind	icalors				

Map Unit Name (Series and Phase):	Argent loam	Drainage Class: poorly to very poorly
Taxonomy (Subgroup)	Typic Endoaqualfs	Field Observations Confirm Mapped Type? Yes No
Profile Description: Depth (inches) $(inches)$ Horizon $0-1"$ O $1-5"$ A $5-15"$ $B1$ $15-24+$ $B2$	Matrix Color (Munsell Moist) Mottle Colors (Munsell Moist) 7.5 YR 4/1	Mottle Texture, Concretions, Structure, etc. Abundance/Contrast organic
Hydric Soil Indicators: Histosol Histic Epipedo Sulfidic Odor X Aquic Moistur Reducing Con X Gleyed or Low Remarks: No mottling in trgent is classi	re Regime ditions r-Chroma Colors	Concretions High Organic Content in Surface Layer in Sandy Soils Organic Streaking in Sandy Soils X Listed on Local Hydric Soils List Listed on National Hydric Soils List Other (Explain in Remarks)

WETLAND DETERMINATION

		a series and a series of the series part is already and the series of the series of the series of the series of
Hydrophytic Vegetation Present? Yes	No	방법 문제 이 문제는 것은 병원은 병원을 다니며 가지 않는다.
Wetland Hydrology Present? Yes	No	
Hydric Soils Present? Yes	No	Is this Sampling Point Within a Wetland? Yes No

Remarks:

Approved by HQUSACE 3/92

Project/Site: BISHOP ROAD MITIGATION SITE Applicant/Owner: NCDOT Investigato(6): CDUDY Do Normal Circumstances exist on the site? Yes Is the site significantly disturbed (Applical Situation)? Yes VEGETATION Yes Verget and Species Stratum Inducator Proceediation Problem Area? It application reverse) Proceediation Problem Area? Verget and Species Stratum Inducator 9. Arrandinaria giganica herb FACW 10. Jourcus michaacti reve Plantes andIII wine FACW 11. Situs smallit wine FACW 13. Scheman Lake, or tide Gauge Procent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-). Stream, Lake, or tide Gauge Primary Indicators: Areard Photographs Other					
is the site significantly disturbed (Axpriced Situation)? Yes No Transect ID: # is this area a potential Problem Area? Yes No Plot ID: # Utraceded, explain on reverse) Dominant Plant Species Stratum Indicator 9. Arandinaria gigantea herb FACW 1. Quercus nigra shrub/ree FAC 9. Arandinaria gigantea herb FACW 2. Liquidambar styraciflua shrub/ree FAC 10. Jancus effusus herb FACW+ 3. Quercus michauxii tree FACW- 11.	Applicant/Owner: NCDOT			County:	HYDE
Dominant Plant Species Stratum Indicator 1. Quercus nigra shrub FAC 9. Arundinaria gigantea herb FACW 2. Liquidambar styraciflua shrub/tree FAC 10. Jancus effusus herb FACW+ 3. Quercus michauxii tree FACW- 11.	Is the site significantly disturbed (Aty Is this area a potential Problem Area?		Yes	No Transect ID:	В
1. Quercus nigra shrub FAC 9. Arunditaria gigantea herb FACW 2. Liquidambar styraciflua shrub/tree FAC 10. Juncus effusus herb FACW+ 3. Quercus michauxii tree FACW- 11.	VEGETATION			an tao amin'ny taona 2008–2014. Ilay kaominina dia kaominina dia kaominina dia kaominina dia kaominina dia kaom I Amin'ny taona 2014. Ilay kaominina dia kaominina dia kaominina dia kaominina dia kaominina dia kaominina dia k	
2. Liquidambar styraciflua shrub/tree FAC 10. Juncus effusus herb FACW+ 3. Quercus michauxii tree FACW- 11.	Dominant Plant Species	Stratum	Indicator	Dominant Plant Species Si	ratum Indicator
3. Quercus michauxii tree FACW- 11. 4. Pirus taeda tree Planted 12. 5. Similax smallii vine FACU 13. 6. Gelsenium sempervirens vine FAC 14. 7. Pteridium aquilinum herb FACU 15. 8. Chasmanthium laxum herb FACW- 16. Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-). >73% Remarks: Stream, Lake, or tide Gauge Primary Indicators:	1. Quercus nigra	shrub	FAC	9. <u>Arundinaria gigantea</u>	herb FACW
4. Pinus taeda tree Planted 12.	2. Liquidambar styraciflua	shrub/tree	FAC	10. Juncus effusus	herb FACW+
5. Stinlax smallit vine FACU 13. 6. Gelsemium sempervirens vine FAC 14. 7. Pteridium aquilinum herb FACU 15. 8. Chasmanthium laxum herb FACW- 16. Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-). >75% Remarks: >75% HYDROLOGY Wetland Hydrology Indicators: Primary Indicators: >75%	3. Quercus michauxii	tree	FACW-		
6. Gelsemium sempervirens vine FAC 14. 7. Preridium aquilinum herb FACU 15. 8. Chasmanthium laxum herb FACW- 16. Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-). >75% Remarks: Wetland Hydrology Indicators: Stream, Lake, or tide Gauge Primary Indicators: Acrial Photographs Imundated Other Saturated in Upper 12 Inches X No Recorded Data Available Water Marks Field Observations: Depth of Surface Water: n/a Depth of Surface Water: n/a (in.)	4. Pinus taeda	tree	Planted	12. <u>- 1</u>	
7. Pteridium aquilinum herb FACU 15. 8. Chasmanthium laxum herb FACW- 16. 9. Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-). >75% Recorded Data (Describe in Remarks) Stream, Lake, or tide Gauge Primary Indicators: Acrial Photographs Wetland Hydrology Indicators: Other Staturated in Upper 12 Inches X. No Recorded Data Available Water Marks Field Observations: Drift Lines Depth of Surface Water: n/a (in.)	5. <u>Simlax smallii</u>	vine	FACU	13.	(1) Second States and the second states are specific to second Spec
8. Chasmanthium laxum herb FACW- 16. Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-). >75% Remarks:	6. Gelsemium sempervirens	vine	FAC	14	
Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-). >75% Remarks: >75% HYDROLOGY	7. Pteridium aquilinum	herb	FACU	15.	
Remarks: Image: Market stream, Lake, or tide Gauge	8. Chasmanthium laxum	herb	FACW-	16.	
HYDROLOGY Recorded Data (Describe in Remarks) Stream, Lake, or tide Gauge Aerial Photographs Other Other XNo Recorded Data Available Field Observations: Drainage Patterns in Wetlands Secondary Indicators (2 or more required): Oxidized Root Channels in Upper 12 Inches	Percent of Dominant Species that are	OBL, FACW, or FA	AC (excluding FAC-		an a
Recorded Data (Describe in Remarks) Wetland Hydrology Indicators: Stream, Lake, or tide Gauge Primary Indicators: Acrial Photographs Inundated Other Saturated in Upper 12 Inches X No Recorded Data Available Water Marks Field Observations: Drift Lines Depth of Surface Water: n/a (in.)	Remarks:				
Field Observations:	Stream, Lake, or tid Aerial Photographs Other			Primary Indicators: Inundated Saturated in Upper 12 In Water Marks Drift Lines	iches
		<u>n/a</u> (in.)		Drainage Patterns in We Secondary Indicators (2 or more t	required):

Depth to Free Water in Pit:

Depth to Saturated Soil:

<u>n/a (in.)</u>

<u>n/a</u> (in.)

Remarks: No hydrologic indicators; however, two secondary indicators are present.

Water-Stained Leaves Local Soil Survey Data х X FAC-Neutral Test Other (Explain in Remarks)

an finan ar share a sheri a sa ta ta ta ta	rgent loam Ypic Endoaqualfs		Drainage Class: <u>poorl</u> Field Observations Confirm Mapped Type	y to very poorly
Profile Description: Depth (inches) Horizon		Mottle Colors (<u>Munsell Moist)</u>	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
<u>0-5"</u> <u>A</u> <u>5-15"</u> <u>B1</u>	<u> </u>	2.5 Y 7/1	<u>common, medium, distinct</u>	silt loam, friable
<u>15-24+</u> <u>B2</u>		7.5 YR 5/8	common, medium, distinct	silty clay loam, firm, sticky
			n an tha an an an tha an an an tha an an an an an Tha an	
		en e		
Hydric Soil Indicators: Histosol Histic Epipedon Sulfidic Odor X Aquic Moisture Reducing Cond X Gleyed or Low-	Regime		Concretions High Organic Content Organic Streaking in S X Listed on Local Hydric Listed on National Hyd Other (Explain in Rem	Soils List ric Soils List
Remarks: WETLAND DETH	RMINATION			
Hydrophytic Vegetation Pr Wetland Hydrology Presen Hydric Soils Present?	esent? ?? Yes	No No No Is this i	Sampling Point Within a Wetla	nd? Yes No
Remarks:				
				Approved by HQUSACE 3/92

Project/Site: BISHOP ROAD MT Applicant/Owner: NCDOT Investigator(s): CINDY CARR, TOM	17 A.			Date: County: State:		I/27/200I HYDE H CAROLINA
Do Normal Circumstances exist on the Is the site significantly disturbed (Atypi Is this area a potential Problem Area? (If needed, explain on reverse)	the second se	Yes Yes Yes	No No No	Commun Transect Plot ID:		pine plantation C I
VEGETATION	a an in the second		a a shekara a kara a sa			
Dominant Plant Species	Stratum	Indicator	Dominar	t Plant Species	Stratum	Indicator
1. Quercus phellos	shrub	FACW-	9. <u>Rubus s</u>	9.	vine	FAC
2. Myrica cerifera	shrub	FAC+	10. <u>Pinus ta</u>	eda	shrub	planted
3. Baccharis halimifolia	shrub	FAC	11.	ana ana amin'ny soratra dia mampika amin'ny soratra dia mampika dia mampika dia mampika dia mampika dia mampika Na kaominina dia mampika dia	·	
4. Quercus nigra	shrub	FAC	12.		· · · · · · · · · · · ·	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
5. Liquidambar styraciflua	shrub	FAC	13.		uzeka kola oktoru. Rođe ni i se kola o e	
6. Dichanthelium consanguineum	herb	FAC	14.		· · · · · · · · · · · · · · · · · · ·	
7. Juncus effusus	herb	FACW+	15.			
8. <u>Smilax smallii</u>	vine	FACU	16.			
Percent of Dominant Species that are O	BL, FACW, or FA	C (excluding FAC-).). ₁	>50		
Remarks:						
HYDROLOGY	d anaphaynan y ch	en de la construction de la constru La construction de la construction d La construction de la construction d	n tara serang serang Serang serang s	ang Santara sa sa s Santara sa	interna contrato estis Anti-	i i kana kwala kwa kwa kwa kwa kwa kwa kwa kwa kwa kw
Recorded Data (Describe in Remain Stream, Lake, or tide of Acrial Photographs Other X No Recorded Data Available	ks) Gauge		Primary Iı	rology Indicators: ndicators: Inundated Saturated in Uppe Water Marks Drift Lines		
Field Observations:			Seconda	Sediment Deposit Drainage Patterns ry Indicators (2 or	s in Wetlands more required):	
Depth of Surface Water:	<u>N/A</u> (in.)	and the second	· · · · · · · · · · · · · · · · · · ·	Water-Stained Le		2 Inches
Depth to Free Water in Pit:	<u>N/A</u> (in.)		X	Local Soil Survey FAC-Neutral Test	t .	
Depth to Saturated Soil:	<u>N/A</u> (in.)			Other (Explain in	Remarks)	
Remarks: No obvious hydrological indi	icators were obser	ved: however, two	secondary indicat	ors exist.		

Map Unit Name (Series and Phase): <u>Argent loc</u>	am	Drainage Class: Field Observations	poorly to very poorly
Taxonomy (Subgroup) <u>Typic Ena</u>	loaqualfs	Confirm Map	
Profile Description: Depth (inches) Horizon 0-4" A	Matrix Color Mottle (Munsell Moist) (Munsel 10 YR 4/1		trast Texture, Concretions, Structure, etc. Silt loam
<u>4-15" Bigl</u>	<u>10 YR 5/1</u> 10 YI	R 6/8 common, coarse, d	listinct silt loam, friable, slightly sticky
<u>15-24+ Btg2</u>	<u>2.5 Y 6/1</u> 2.5 Y	6/8 <u>common, coarse, d</u>	listinct silty clay, firm, slightly sticky
			n and an and a second
la en <u>en en e</u>	n na statu se statu s Na statu se s		
			an <u>an ann an An</u>
Histosol Histic Epipedon Sulfidic Odor X Aquic Moisture Regime Reducing Conditions X Gleyed or Low-Chroma (and a second	Organic Strea X Listed on Loc Listed on Nat	Content in Surface Layer in Sandy Soils aking in Sandy Soils al Hydric Soils List tional Hydric Soils List in in Remarks)
Remarks: Argent is a Hyd	Iric A soil		
WETLAND DETERMIN	NATION	n an	
Hydrophytic Vegetation Present? Wetland Hydrology Present? Hydric Soils Present?	YesNoYesNoYesNo	Is this Sampling Point Within	n a Wetland? Yes No
Remarks:			

Approved by HQUSACE 3/92

Project/Site: BISHOP ROAD MITIGATION SITE Applicant/Owner: NCDOT Investigator(s): CINDY CARR, TOM BARRETT			Date: County: State:	11/27/2001 HYDE NORTH CAROLINA
Do Normal Circumstances exist on the site? Is the site significantly disturbed (Atypical Situation)? Is this area a potential Problem Area? (If needed, explain on reverse)	Yes Yes Yes	No No No	Community ID: Transect ID: Plot ID:	5 year pine plantation C 2
VEGETATION		ang synamic sa	an a	
Dominant Plant Species Stratum	Indicator	Dominan	t Plant Species Str	atum Indicator
1. Myrica cerifera	FAC+	9.		
2. Liquidambar styraciflua shrub	FAC	10.		
3. <u>Baccharis halimifolia</u> shrub	FAC	··· 11. ··· ···	· · · · · · · · · · · · · · · · · · ·	andra and an and an and an and an and an
4. Pinus taeda shrub	planted	12.		
5. Rubus sp. vine	FAC, FACW	13.1	· · · · · · · · · · · · · · · · · · ·	
6. Smilax smallii vine	FACU	14.		
7. Juncus effusus herb	FACW+	15.		
8.		16.	λ	an an an Arrange an Ar Arrange an Arrange an Ar
Percent of Dominant Species that are OBL, FACW, or FAC	C (excluding FAC-	•). ************************************	>75%	
HYDROLOGY	an a sha ti a ta a segma Mari ta a ta			an a construction and the second s
Recorded Data (Describe in Remarks) Stream, Lake, or tide Gauge Aerial Photographs Other X No Recorded Data Available		Primary In	Inundated Saturated in Upper 12 Inc Water Marks Drift Lines	hes
Field Observations: Depth of Surface Water: <u>N/A</u> (in.)		Secondar	Sediment Deposits Drainage Patterns in Wetl y Indicators (2 or more re Oxidized Root Channels i	quired):
Depth to Free Water in Pit: <u>N/A</u> (in.)			Water-Stained Leaves Local Soil Survey Data	
Depth to Saturated Soil: <u>N/A</u> (in.)			FAC-Neutral Test Other (Explain in Remark	s)
Remarks: No obvious hydrological indicators were	observed.			

	oam	Field Observations	Drainage Class: <u>poorly to very poorly</u> Field Observations Confirm Mapped Type Yes No			
	/					
Profile Description: Depth (inches) Horizon	Matrix Color (Munsell Moist)	Mottle Colors (<u>Munsell Moist)</u>	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.		
<u> </u>	7.5 YR 4/1		n en en ser en la recher de la construction de la construction de la construction de la construction de la cons La construction de la construction La construction de la construction d	silt loam		
Btg1	2.5 Y 6/2	2.5 Y 6/4	few, fine, faint	silt loam, slightly sticky, friable		
		5 YR 4/6	common, medium, prominent			
<u>10-24+</u> <u>Bt</u>	2.5 Y 6/8	10 YR 6/8	common, coarse, distinct	clay, firm, sticky		
	na serie de la composition de la compos la composition de la c la composition de la c					
	en e			ang sa		
			ana ana ang ang ang ang ang ang ang ang	en en el papa per com La como dia papa per como		
Hydric Soil Indicators:	na shekara ka sa			anna a' sguidh an Sanna a' Calaiste Sanna a' Sanna a' San Sanna a' Sanna a' San		
Histosol Histic Epipedon	an an an an an an Array. An Anna an Anna	ang balan sa baga pada ang balang sa baga sa	Concretions High Organic Content	in Surface Layer in Sandy Soil		
Sulfidic Odor			Organic Streaking in S	andy Soils		
X Aquic Moisture Regim Reducing Conditions	e 		X Listed on Local Hydric Listed on National Hydric	Soils List		
X Gleyed or Low-Chroma	a Colors	بالمسجود فرجاري الهراجية أستجده	Other (Explain in Ren	arkel and see a second second		
				larkoj		
Remarks:						
Remarks:						
Remarks: WETLAND DETERM	INATION	No.				
Remarks: WETLAND DETERMI Hydrophytic Vegetation Present?	INATION Yes 1	No.				
Remarks: WETLAND DETERMI Hydrophytic Vegetation Present?	INATION Yes Yes	Ňo	his Sampling Point Within a Wetla			
Remarks: WETLAND DETERMI Hydrophytic Vegetation Present? Wetland Hydrology Present?	INATION Yes 1 Yes 1	Ňo				
Remarks: WETLAND DETERMI Hydrophytic Vegetation Present? Wetland Hydrology Present? Hydric Soils Present?	INATION Yes 1 Yes 1	Ňo	his Sampling Point Within a Wetla	nd? Yes No		
Remarks: WETLAND DETERMI Hydrophytic Vegetation Present? Wetland Hydrology Present? Hydric Soils Present?	INATION Yes 1 Yes 1	Ňo	his Sampling Point Within a Wetla			
Remarks: WETLAND DETERMI Hydrophytic Vegetation Present? Wetland Hydrology Present? Hydric Soils Present?	INATION Yes 1 Yes 1	Ňo	his Sampling Point Within a Wetla	nd? Yes No		
Remarks: WETLAND DETERMI Hydrophytic Vegetation Present? Wetland Hydrology Present?	INATION Yes 1 Yes 1	Ňo	his Sampling Point Within a Wetla	nd? Yes No		
Remarks: WETLAND DETERMI Hydrophytic Vegetation Present? Wetland Hydrology Present? Hydric Soils Present?	INATION Yes 1 Yes 1	Ňo	his Sampling Point Within a Wetla	nd? Yes No		
Remarks: WETLAND DETERMI Hydrophytic Vegetation Present? Wetland Hydrology Present? Hydric Soils Present?	INATION Yes 1 Yes 1	Ňo	his Sampling Point Within a Wetla	nd? Yes No		
Remarks: WETLAND DETERMI Hydrophytic Vegetation Present? Wetland Hydrology Present? Hydric Soils Present?	INATION Yes 1 Yes 1	Ňo	his Sampling Point Within a Wetla	nd? Yes No		

Project/Site: BISHOP ROAD MITIGATION SITE Applicant/Owner: NCDOT Investigator(s): CINDY CARR, TOM BARRETT	Date: 11/27/2001 County: HYDE State: NORTH CAROLINA
Do Normal Circumstances exist on the site?YesIs the site significantly disturbed (Atypical Situation)?YesIs this area a potential Problem Area?Yes(If needed, explain on reverse)Yes	s No Transect ID: \hat{C}
VEGETATION	na ana ang ang ang ang ang ang ang ang a
Dominant Plant Species Stratum Indicator	Dominant Plant Species Stratum Indicator
1. <u>Myrica cerifera</u> shrub FAC+	9.
2. <u>Baccharis halimifolia</u> shrub FAC	
3. Pinus taeda shrub planted	11. And the second s
4. Juncus effusus herb FACW+	12. 1 12.
5. Erianthus gigantea herb FACW	13.
6.	14.
len <mark>n</mark> er seiter struger auf der eine eine struger auf der eine struger in der eine struger in der eine struger auf der eine struge	15. A state of the
8. A second line of the second s	16.
Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC	
HYDROLOGY	
Recorded Data (Describe in Remarks) Stream, Lake, or tide Gauge Aerial Photographs Other X No Recorded Data Available Field Observations: Depth of Surface Water: N/A (in.) Depth to Free Water in Pit: 20 (in.) Depth to Saturated Soil: 12 (in.)	Wetland Hydrology Indicators: Primary Indicators: Inundated X Saturated in Upper 12 Inches Water Marks Drift Lines Sediment Deposits Drainage Patterns in Wetlands Secondary Indicators (2 or more required): X Oxidized Root Channels in Upper 12 Inches Water-Stained Leaves X Local Soil Survey Data FAC-Neutral Test Other (Explain in Remarks)
Remarks:	

Map Unit Name (Series and Phase):	Argent loam		Drainage Class: <u>poor</u> Field Observations	ly to very poorly
Taxonomy (Subgroup)	Typic Endoaqualfs		Confirm Mapped Type	Yes No
Profile Description: Depth (inches) Hori 0-1" A		Mottle Colors <u>(Munsell Moist)</u>	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc. silt loam
1-12" Btg		5 YR 5/8	common, medium, distinct s	ilty clay loam, slightly sticky, fi
		5 Y 6/8		
<u>12-24+</u> <u>Btg</u>	2 2.5 ¥ 5/1	10 YR 6/8	common, coarse, distinct	silty clay, very firm, sticky
· · · · · · · · · · · · · · · · · · ·			n Ny INSEE Amerika mampika Insee Amerika	
Hydric Soil Indicators: Histosol Histic Epipe Sulfidic Odo X Aquic Moist X Reducing Co	don r ure Regime		Concretions High Organic Content Organic Streaking in S X Listed on Local Hydric Listed on National Hydroc Other (Explain in Ren	in Surface Layer in Sandy Soil andy Soils Soils List dric Soils List
Remarks: Arg	gent is a Hydric A soil			
WETLAND DE'	TERMINATION	en e	n an	
Hydrophytic Vegetation Wetland Hydrology Pre Hydric Soils Present?	sent? Yes	No No No Is this	Sampling Point Within a Wetla	and? Yes No
Demosiler.				
Remarks:	(1) A start of the spectra start of the second start of the spectra s			

Project/Site: BISHOP ROAD MITIGA Applicant/Owner: NCDOT Investigator(s): CINDY CARR, TOM BAI	en die eine eine der beiden.		Date: County: State:	11/27/2 HYD NORTH CA	E
Do Normal Circumstances exist on the site?	Ye	s No	Community	ID: 5 year pine p	lantation
Is the site significantly disturbed (Atypical S			Transect ID		
Is this area a potential Problem Area?	Ye		Plot ID:	4	
(If needed, explain on reverse)					
VEGETATION					
Dominant Plant Species	Stratum Indicator	Dominan	t Plant Species	Stratum L	<u>idicator</u>
1. Baccharis halimifolia	shrub FAC	9	······		
2. <u>Myrica cerifera</u>	shrub FAC+	10	· · · · ·	· · · · · · · · · · · · · · · · · · ·	a af an an
3. <u>Acer rubrum</u>	shrub FAC	_ 11	· · · · · · · · · · · · · · · · · · ·	· · · · · · · · · · · · · · · · · · ·	
4. Pinus taeda	shrub planted	12.	and a second		a landa i
5. Juncus effusus	herb FACW+	13			• • • •
6		_ 14	· · · · · · · · · · · · · · · · · · ·	· · · · · · · · · · · · · · · · · · ·	
n 7 a <u>- Alexandre de Constante de Const</u>		15		in a straight straigh	
8.		16			
Percent of Dominant Species that are OBL, I Remarks:	3ACW, or FAC (excluding FA	.C-).	>75%		
HYDROLOGY		and a second		n en en grænden. F	na servita Na servita Na servita
Recorded Data (Describe in Remarks) Stream, Lake, or tide Gaug Aerial Photographs Other X No Recorded Data Available	;e	Primary la	Inundated Saturated in Upper 1 Water Marks	12 Inches	
Field Observations:			Drift Lines Sediment Deposits Drainage Patterns in ry Indicators (2 or m		
	(in.)		Oxidized Root Chan Water-Stained Leave	mels in Upper 12 Incl es	nes di si di si
	<u>(</u> in.)	X	Local Soil Survey D FAC-Neutral Test		
Depth to Saturated Soil:N/A	(in.)		Other (Explain in Re	emarks)	· · · · · ·
Remarks: No obvious hydrological in	ndicators were observed; how	ever, two secondary	indicators exist.		· · ·

Map Unit Name (Series and Phase):	Drainage Class: <u>poorly to very poorly</u>
Taxonomy (Subgroup) Typic Endoaqualfs	Field Observations Confirm Mapped Type: Yes No
Profile Description: Matrix Color Mottle Colors Depth (Munsell Moist) (Munsell Moist) (inches) Horizon (Munsell Moist) 0-1" A 7.5 Y 3/2	Mottle Texture, Concretions, Abundance/Contrast Structure, etc. silt loam
<u>1-8" Btg1 5 YR 4/1 7.5 YR 4/3</u>	few, fine, faint silt loam, slightly sticky, friable
<u>8-18" Btg2 7.5 YR 4/1 7.5 YR 4/6</u>	few, fine, distinct silt loam, slightly sticky, friable
<u>18-24+ Btg3 10 YR 5/1 2.5 Y 7/1</u>	common, coarse, distinct silty clay
<u> </u>	common, medium, distinct
andre and a standard standard and a standard standard standard standard standard standard standard standard st Standard standard stan Standard standard sta	na sena seja de la companya de la co La companya de la comp La companya de la comp
1. A set of the set	a da anticipada da anticip Anticipada da anticipada da
Hydric Soil Indicators:	
Histosol Histic Epipedon Sulfidic Odor X Aquic Moisture Regime Reducing Conditions X Gleyed or Low-Chroma Colors	Concretions High Organic Content in Surface Layer in Sandy Soils Organic Streaking in Sandy Soils X Listed on Local Hydric Soils List Listed on National Hydric Soils List Other (Explain in Remarks)
Remarks:	
WETLAND DETERMINATION	
Hydrophytic Vegetation Present?YesNoWetland Hydrology Present?YesNoHydric Soils Present?YesNo	Sampling Point Within a Wetland? Yes No
Remarks:	
	Approved by HQUSACE 3/92
지수는 것이 있는 것은 것이 같아요. 것이 가 봐요.	

Is the site significantly disturbed (Atypical Situation)?	Date: 11/27/2001 County: HYDE State: NORTH CAROLINA es No ransect ID: D Plot ID: 2
VEGETATION	and a second part of the second s Second second
Dominant Plant Species Stratum Indicator	Dominant Plant Species Stratum Indicator
1. Baccharis halimifolia	9. <u>Eupatorium capillifolium herb</u> FACU
2. <u>Myrica heterophylla</u> shrub FACW	10. Erianthus gigantea herb FACW
3. Solidago sp. herb FAC, FACU+	11. Pinus taeda tree planted
4. Juncus effusus herb FACW+	12.
5. <u>Chasmanthium laxum herb FACW-</u>	13
6. <u>Rubus sp.</u> shrub FAC, FACW	14
7. Panicum spp. herb FAC	15.
8. Liquidambar styraciflua tree FAC	16.
Percent of Dominant Species that are OBL, FACW, or FAC (excluding FA Remarks:	AC-). >50%
HYDROLOGY	n ang na salahan na sana na sa Na sana na sana
Recorded Data (Describe in Remarks) Stream, Lake, or tide Gauge Aerial Photographs Other X No Recorded Data Available Field Observations: Depth of Surface Water: N/A (in.) Depth to Free Water in Pit: N/A (in.) Depth to Saturated Soil: N/A (in.)	Wetland Hydrology Indicators: Primary Indicators: Inundated Saturated in Upper 12 Inches Water Marks Drift Lines Sediment Deposits X Drainage Patterns in Wetlands Secondary Indicators (2 or more required): X Oxidized Root Channels in Upper 12 Inches Water-Stained Leaves X Local Soil Survey Data FAC-Neutral Test Other (Explain in Remarks)
Remarks: 1 inch lens of perched water at 20 inches. Some drainage patte	ern but mired by bedding and roots.

.

Map Unit Name (Series and Phase): <u>Argent loam</u>	Drainage Class: <i>poorly to very poorly</i> Field Observations
Taxonomy (Subgroup) Typic Endoaqualfs	Confirm Mapped Type: Yes No
Profile Description: Matrix Color Mottle Color Depth Matrix Color Mottle Color (inches) Horizon (Munsell Moist) (Munsell Moist) 0-1" Oi	
<u>1-8"</u> <u>A</u> <u>2.5 YR 3/1</u>	silt loam, friable, granular
<u></u>	6/8 common, medium, distinct sandy clay, fine
<u>17-24+</u> <u>Big2</u> <u>2.5 YR 5/1</u> <u>2.5 Y 7</u>	1/8 common, medium, distinct many roots
n an	
Hydric Soil Indicators:	
Histosol Histic Epipedon Sulfidic Odor X Aquic Moisture Regime X Reducing Conditions X Gleyed or Low-Chroma Colors	Concretions High Organic Content in Surface Layer in Sandy Soils Organic Streaking in Sandy Soils X Listed on Local Hydric Soils List Listed on National Hydric Soils List Other (Explain in Remarks)
Remarks: 1 inch lens of perched water at 20 inches. Soil with saturated	
WETLAND DETERMINATION	
Hydrophytic Vegetation Present?YesNoWetland Hydrology Present?YesNoHydric Soils Present?YesNo	Is this Sampling Point Within a Wetland? Yes No
Remarks:	
n en	Approved by HQUSACE 3/92

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Project/Site: BISHOP ROAD M Applicant/Owner: NCDOT Investigator(s): MARTHA BREWS	ITIGATION SITE TER, HAROLD BRA	1DY			Date: County: State:	5. S.	11/27/2001 HYDE TH CAROLINA
Do Normal Circumstances exist on the Is the site significantly disturbed (Aty Is this area a potential Problem Area? (If needed, explain on reverse)		Yes Yes Yes	No No No	3	Community Transect ID Plot ID:		vear old pine D 3
VEGETATION		an a					
Dominant Plant Species	Stratum	Indicator	1 1 1 1 1 1	Dominant Pla	ant Species	Stratum	Indicator
1. Baccharis halimifolia	shrub	FAC	9.	Aster dumos	<u>a</u>	herb	FAC
2. <u>Myrica heterophylla</u>	shrub	FACW	10.	Rhexia mari	ana	herb	FACW+
3. Chasmanthium laxum	herb	FACW	11.	Ludwigia ali	ternifolia	herb	OBL
4. Solidago spp.	herb	FACW-	12.	<u>Liquidambar</u>	r styraciflua	tree	FAC
5. <u>Eleocharius sp.</u>	herb	FACW	13.	Pinus taeda	n an	tree	planted
6. Juncus effusus	herb	FACW-	14.	Dichantheliu	um consanguine	um herb	FAC
7. Rubus sp.	shrub	FAC, FACW	15.			1993 (1994) 	
8. <u>Acer rubrum</u>	tree	FAC	16.				
Percent of Dominant Species that are (OBL, FACW, or FA	C (excluding FAC	-).		>75%		
Remarks:							
HYDROLOGY	e de la case de la case La case de la case de	ta ang sang sang sang sang sang sang sang	n ant sail A	antina di Santa Managina di Santa	n an an Maria Araba an	te a solo se a les L	
Recorded Data (Describe in Rem Stream, Lake, or tide Aerial Photographs Other X No Recorded Data Available		1		Satı		12 Inches	
n na sana ang kana a	en Allek, Alexander			Drif Sed	ft Lines iment Deposits		
Field Observations:		an an an an Arabana An an an Arabana an Arabana An Arabana an Arabana an Arabana	- j		inage Patterns ir idicators (2 or m		an a
Depth of Surface Water:	<u>N/A</u> (in.)	e en les atues : Les a	•	X Oxi	dized Root Char ter-Stained Leav	nels in Upper	12 Inches
Depth to Free Water in Pit:	<u>N/A</u> (in.)			X Loc	al Soil Survey D C-Neutral Test		
Depth to Saturated Soil:	<u>N/A</u> (in.)				er (Explain in R	emarks)	
Remarks: Some evidence of standing	water and drainage	pattern, but mired	by beda	ling and/or roo	ots.	eest a se	

Map Unit Name (Series and Phase):	Argent loam		Drainage Class: <u>poort</u>	ly to very poorly
Taxonomy (Subgroup)	Typic Endoaqualfs	and the state of the	Field Observations Confirm Mapped Type	Yes No
Profile Description: Depth (inches) Horiz	Matrix Color <u>(Munsell Moist)</u> 5 YR 3/2	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc. silty loam, organic
<u>1-16"</u> Btg	1 2.5 YR 5/2	7.5 YR 5/6	common, medium, distinct	s <u>ilt clay loam, friable, nonsticky</u>
<u>16-24+</u> <u>Btg</u>	2 <u>2.5 YR 6/1</u>	2.5 YR 5/8	common, medium, distinct	clay loam, slightly plastic
an an an Anna an Anna Anna Anna Anna Anna	andra <u>an an a</u>	ta da anti-arra da arra da arr Arra da arra da		
Hydric Soil Indicators:				
Histosol Histic Epiped Sulfidic Odor X Aquic Moistu X Reducing Co X Gleyed or Lo	r ire Regime		Concretions High Organic Content Organic Streaking in S X Listed on Local Hydric Listed on National Hydric Other (Explain in Ren	Soils List Iric Soils List
Remarks:	Argent is a Hydric A soil			
WETLAND DE	TERMINATION			
Hydrophytic Vegetation Wetland Hydrology Pres Hydric Soils Present?	ent?	No No Is this	Sampling Point Within a Wetla	nd? Yes No
Remarks:				
				Approved by HQUSACE 3/92

n an	
Project/Site: BISHOP ROAD MITIGATION SITE Applicant/Owner: NCDOT Investigator(s): MARTHA BREWSTER, HAROLD BRADY Do Normal Circumstances exist on the site? Yes Is the site significantly disturbed (Atypical Situation)? Yes	Date: 11/27/2001 County: HYDE State: NORTH CAROLINA No Community ID: 5 year old pine Transect ID: D
Is this area a potential Problem Area? Yes	
(If needed, explain on reverse)	
VEGETATION	and an an ann an an tha ann an th An tha an tha
Dominant Plant Species Stratum Indicator	Dominant Plant Species Stratum Indicator
1. <u>Myrica heterophylla</u> shrub FACW	9. <u>Quercus nigra</u> tree FAC
2. <u>Baccharis halimifolia</u> <u>shrub</u> FAC	10. <u>Smilax rotundifolia</u> vine FAC
3. Andropogon virginicus herb FAC-	11. Vaccinium sp. shrub FAC
4. Liquidambar styraciflua tree FAC	12. Solidago spp. herb FAC, FACU+
5. <u>Quercus michauxii tree FACW-</u>	13. Juncus coriaceus herb FACW+
6. Arundinaria gigantea herb FACW	14.
7. Chasmanthium laxum herb FACW-	15.
8. <u>Quercus phellos</u> tree FACW	16. •
Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC	-)>75%
Remarks:	
HYDROLOGY	len al l'estategi que prepière se de la seconda de la s Les desentes de la seconda d Les de la seconda de la sec
Recorded Data (Describe in Remarks)Stream, Lake, or tide GaugeAerial PhotographsOtherNo Recorded Data Available	Wetland Hydrology Indicators: Primary Indicators: Inundated Saturated in Upper 12 Inches Water Marks Drift Lines
Field Observations: Depth of Surface Water: N/A (in.) Depth to Free Water in Pit: N/A (in.) Depth to Saturated Soil: N/A (in.)	Sediment Deposits Drainage Patterns in Wetlands Secondary Indicators (2 or more required): X Oxidized Root Channels in Upper 12 Inches Water-Stained Leaves X Local Soil Survey Data FAC-Neutral Test Other (Explain in Remarks)
Remarks: No obvious surface hydrology: however more than two secondar	v indicators exist.

SOILS				
Map Unit Name (Series and Phase):	Argent loam	۰. ۲۰۰۰ ۲۰۰۱		 Drainage Class:
Taxonomy (Subgroup)	Typic Endoaqualfs	21 (1) 21 2		 Field Observations Confirm Map
	and the second second	· · · ·	19 A.	 an Alatha San Ala

Profile De Depth (inches)	escriptio	<u>n:</u> <u>Horizon</u>		Matrix Color (<u>Munsell Moist)</u>		Mottle Colors Aunsell Moist)		Abunc	Mottle lance/Contrast	Texture, Concretions, Structure, etc.
0-1"		A		5 YR 3/2						l <u>oam, friable, organic, granular</u>
- 1-14"		Btg1	<u>.</u>	10 YR 5/1	· · · · ·	10 YR 5/6	ہ میں م <u>ر</u> ا	few,	distinct, fine	silty clay loam, friable, nonsticky
14-24+		Btg2		5 YR 7/1	· ·	2.5 Y 7/8		coarse, e	common, distinct	silty clay, plastic
er e di				n na Artan		ang Arite Arite			· · · · · · · · · · · · ·	
			•	a an airte a an a'		a fan ei ei stats E			an gana san bana	and the State of the Aller of the State of the
		tere e ty	-				iter en g			
	-	· •	•	and the second s						

Hydric Soil Indicators:

- Histosol Histic Epipedon Sulfidic Odor
- X Aquic Moisture Regime Reducing Conditions
- X Gleyed or Low-Chroma Colors
- Remarks: Argent is a Hydric A soil

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	No	
Wetland Hydrology Present? Yes	No	
Hydric Soils Present?	No	Is this Sampling Point Within a Wetland? Yes No

Remarks:

Approved by HQUSACE 3/92

poorly to very poorly

High Organic Content in Surface Layer in Sandy Soils Organic Streaking in Sandy Soils

No

Confirm Mapped Type? Yes

Concretions

X Listed on Local Hydric Soils List Listed on National Hydric Soils List

Other (Explain in Remarks)

	and the second second				
Project/Site: BISHOP ROAD M Applicant/Owner: NCDOT Investigator(s): CINDY CARR, TO	1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 -			Date: County: State:	11/27/2001 HYDE NORTH CAROLINA
Do Normal Circumstances exist on the Is the site significantly disturbed (Aty Is this area a potential Problem Area? (If needed, explain on reverse)		Yes Yes Yes	No No No	Community II Transect ID: Plot ID:	D: 5 year old pine plantation E 1
VEGETATION			· . · · · · · · · · · · · · · · · · · ·		
Dominant Plant Species	<u>Stratum</u>	Indicator	Dom	inant Plant Species	Stratum Indicator
1. Myrica cerifera	shrub	FAC+	9.		and and a second se
2. Baccharis halimifolia	shrub	FAC	10.		
3. Pinus taeda	shrub	planted	11	· · · · · · · · · · · · · · · · · · ·	la de la companya de
4. <u>Solidago altissima</u>	herb	FACU	12.		
5. <u>Andropogon virginicus</u>	herb	FAC-	13	····	······································
6. Juncus effusus	herb	FACW-	14		
7. <u>Smilax smallii</u>	vine	FACU	15	 	
8.			16		serverse for program in the server of the serverse servers in the serverse servers of the serverse servers and the serverse servers
Percent of Dominant Species that are (Remarks:	DBL, FACW, or FAC	(excluding FAC-))	>50%	
HYDROLOGY	and the second		an a	n de la construcción de la constru La construcción de la construcción d La construcción de la construcción d	
Recorded Data (Describe in Rem Stream, Lake, or tide Aerial Photographs Other X No Recorded Data Available				Hydrology Indicators: ry Indicators: Inundated Saturated in Upper 12 Water Marks Drift Lines	Inches
Field Observations:			 Seco	Sediment Deposits Drainage Patterns in V ndary Indicators (2 or more	
Depth of Surface Water:	<u>N/A</u> (in.)			Oxidized Root Channe Water-Stained Leaves	els in Upper 12 Inches
Depth to Free Water in Pit:	<u>N/A</u> (in.)			X Local Soil Survey Data FAC-Neutral Test	a
Depth to Saturated Soil:	<u>N/A</u> (in.)			Other (Explain in Ren	arks)
Remarks: No obvious surface l	hydrology.		· · ·		

	Argent loam		 Drainage Class: pool Field Observations 	rly to very poorly
axonomy (Subgroup)	Typic Endoaqualfs		Confirm Mapped Typ	e' Yes No
rofile Description: Depth (inches) Hori 0-3" A		Mottle Colors <u>(Munsell Moist)</u>	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc. silt loam
3-12" Btg		10 YR 6/8	common, coarse, distinct	silty clay loam, friable, Fe co
		2.5 YR 4/8	common, medium, prominent	n in an an an tha
<u>12-24+ Btg</u>	2 10 YR 5/1	10 YR 6/8	common, coarse, distinct	clay loam, firm, slightly stic
ta de la caractería de la composición d Composición de la composición de la comp		2.5 YR 4/8	common, medium, prominent	
	n an an an an an an an an Araba. Tara an			e da ser en la ser e La ser en la
Sulfidic Odo X Aquic Moist Reducing Co X Gleyed or Lo	ure Regime	n an an Araba an Araba an Araba an Araba Araba an Araba an Araba an Araba an Araba Araba an Araba an Araba an Araba an Araba Araba an Araba an Araba an Araba an Araba	Organic Streaking in X Listed on Local Hydri Listed on National Hy Other (Explain in Re	c Soils List dric Soils List
X Aquic Moist Reducing Co	ure Regime onditions		X Listed on Local Hydri Listed on National Hy	c Soils List dric Soils List
X Aquic Moist Reducing Co X Gleyed or Lo	ure Regime onditions ow-Chroma Colors		X Listed on Local Hydri Listed on National Hy	c Soils List dric Soils List
X Aquic Moist Reducing Co X Gleyed or Lo	ure Regime onditions ow-Chroma Colors Argent is a Hydric A soil TERMINATION Present?	No No No Is th	X Listed on Local Hydri Listed on National Hy	c Soils List dric Soils List marks)
X Aquic Moist Reducing Cc X Gleyed or Lc Lemarks: WETLAND DE' lydrophytic Vegetation Vetland Hydrology Pres	ure Regime onditions ow-Chroma Colors Argent is a Hydric A soil TERMINATION Present? Yes Sent? Yes	No	X Listed on Local Hydri Listed on National Hy Other (Explain in Re	c Soils List dric Soils List marks)

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Project/Site:BISHOP ROAD MITIGATION SITEApplicant/Owner:NCDOTInvestigator(s):CINDY CARR, TOM BARRETTDo Normal Circumstances exist on the site?Is the site significantly disturbed (Atypical Situation)?Is this area a potential Problem Area?(If needed, explain on reverse)	Yes Yes Yes	No Transect ID: E
VEGETATION	n an	
Dominant Plant Species Stratum	Indicator	Dominant Plant Species Stratum Indicator
1. <u>Pinus taeda</u>	planted	9. Solidago spp. herb FAC
2. Baccharis halimifolia	FAC	10. Juncus effusus herb FACW-
3. <u>Myrica cerifera</u> shrub	FAC+	11.
4. Gordonia lasianthus shrub	FACW	12.
5. Liquidambar styraciflua shrub	FAC	13.
6. <u>Rubus sp.</u> vine	FAC	14
7. <u>Smilax bona-nox vine</u>	FAC	15. And Annual Annua
8. <u>Andropogon virginicus herb</u>	FAC-	16.
Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-	>50
HYDROLOGY	en su constante aso Secutio	
Recorded Data (Describe in Remarks) Stream, Lake, or tide Gauge Aerial Photographs Other X No Recorded Data Available		Wetland Hydrology Indicators: Primary Indicators: Inundated Saturated in Upper 12 Inches Water Marks Drift Lines
Field Observations: Depth of Surface Water: <u>N/A</u> (in.)		Sediment Deposits Drainage Patterns in Wetlands Secondary Indicators (2 or more required): Oxidized Root Channels in Upper 12 Inches Water-Stained Leaves
Depth to Free Water in Pit: N/A_(in.) Depth to Saturated Soil: N/A_(in.)		X Local Soil Survey Data X FAC-Neutral Test Other (Explain in Remarks)
Remarks: No obvious surface hydrology; however, two	o secondary inc	dicators exist.

Map Unit Name (Series and Phase): <u>Argent</u>	loam		Drainage Class: poorly Field Observations	v to very poorly
Taxonomy (Subgroup) <u>Typic E</u>	Endoaqualfs	e la construction de la construction - la construction de la construction - la construction de la construction	Confirm Mapped Type?	Yes No
Profile Description: Depth (inches) Horizon 0-3" A	Matrix Color (Munsell Moist) 10 YR 4/2	Mottle Colors (<u>Munsell Moist)</u>	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc. <u>silt loam, friable, nonsticky</u>
<u>3-18"</u> <u>Btg1</u>	<u>2.5 Y 7/2</u>	10 YR 6/8	common, medium, distinct	silt loam, friable
<u>18-24"</u> <u>Big2</u>	<u>10 YR 6/1</u>	10 YR 5/8	common, coarse, distinct	silty clay loam, slightly sticky
		· · · · · · · · · · · · · · · · · · ·	· · · · · · · · · · · · · · · · · · ·	
	n nen en service de la complete de la definition de la complete de la definition de la complete de la definitio La complete de la comp		· · · · · · · · · · · · · · · · · · ·	
TT1. ¹ . Cl. 11 Y. 1 ¹	an an ann ann an ann an Arraige. Bha an Arraige ann an	en de la companya de La companya de la comp		
Hydric Soil Indicators: Histosol Histic Epipedon Sulfidic Odor X Aquic Moisture Regin Reducing Conditions X Gleyed or Low-Chrom			Concretions High Organic Content i Organic Streaking in Sa X Listed on Local Hydric Listed on National Hyd Other (Explain in Rem	Soils List ric Soils List
Remarks: Argent is a H WETLAND DETERM	Hydric A soil INATION			
	Yes N	0		
Hydrophytic Vegetation Present? Wetland Hydrology Present? Hydric Soils Present?	Yes N Yes N	0	Sampling Point Within a Wetlar	id? Yes No
Wetland Hydrology Present? Hydric Soils Present? Remarks:	and the state of the second	0	Sampling Point Within a Wetlar	d? Yes No

Project/Site: BISHOP ROAD M Applicant/Owner: NCDOT Investigator(s): CINDY CARR, TO	MITIGATION SITE OM BARRETT			Date: County: State:	H	7/2001 YDE CAROLINA
Do Normal Circumstances exist on th Is the site significantly disturbed (Aty Is this area a potential Problem Area?	ypical Situation)?	Yes Yes Yes	No No No	Community Transect ID Plot ID:		ine plantation E 3
(If needed, explain on reverse)				1 101 110.		<u></u>
VEGETATION						
Dominant Plant Species	Stratum	Indicator	Dominant	Plant Species	<u>Stratum</u>	Indicator
1. Baccharis halimifolia	Shrub	FAC	9. Smilax sm	allii	vine	FACU
2. Myrica cerifera	Shrub	FAC+	10.		·	
3. Gordonia lasianthus	Shrub	FACW	11.	· · ···. · · · · ·	1. s	د.
4. <u>Acer rubrum</u>	Shrub	FAC	12.			
5. <u>Pinus taeda</u>	Shrub	planted	13.		· · · · · · · · · · · · · · · · · · ·	· · · · · · · · · · · · · · · · · · ·
6. <u>Andropogon virginicus</u>	herb	FAC-	14.	······································	· · · · · · · · · · · · · · · · · · ·	
7. Solidago altissima	herb	FACU+	15			
8. <u>Rubus sp.</u>	vine	FAC	16	· · · · · ·		
Percent of Dominant Species that are	OBL, FACW, or FAC	C (excluding FAC	-)	>50%		
Remarks:				<u> </u>		
	· · · ·		• .			5.
HYDROLOGY	and an		na an a	anto partenanto contega	n La granda de la composición La granda de la composición de la composición de la composición de la composición de	in en se get constra S
HYDROLOGY Recorded Data (Describe in Ren Stream, Lake, or tid Aerial Photographs Other X No Recorded Data Available	de Gauge			licators: nundated aturated in Upper Vater Marks	12 Inches	
Recorded Data (Describe in Ren Stream, Lake, or tid Aerial Photographs Other	de Gauge		Primary Ind In S W D S D Secondary Secondary W X L F	licators: nundated aturated in Upper Vater Marks wift Lines ediment Deposits mainage Patterns in Indicators (2 or m	n Wetlands hore required): nnels in Upper 12 In es Jata	nches

Map Unit Name (Series and Phase): <u>Argent loam</u>	Drainage Class: <i>poorly to very poorly</i> Field Observations
Taxonomy (Subgroup) <u>Typic Endoaqualfs</u>	Confirm Mapped Type? Yes No
Profile Description:DepthMatrix Color(inches)Horizon(Munsell Moist)(Munsell Moist)	Mottle Texture, Concretions, Abundance/Contrast Structure, etc.
<u>A 10 YR 3/1</u>	silt loam, friable
<u>5-12" BA 10 YR 4/1 10 YR 5/4</u>	few, fine, faint silty clay loam, friable
<u>12-24+</u> <u>Btg</u> <u>2.5 Y 6/1</u> <u>7.5 YR 6/8</u>	common-many, coarse, distinctsilty clay loam
	and a second
a se a companya da anti-a companya da anti-a companya da anti-a companya da anti-a companya da anti- A se a companya da anti-a companya d	ng balan sa sana ang sa
Hydric Soil Indicators:	
Histosol Histic Epipedon Sulfidic Odor X Aquic Moisture Regime Reducing Conditions X Gleyed or Low-Chroma Colors	Concretions High Organic Content in Surface Layer in Sandy Soils Organic Streaking in Sandy Soils X Listed on Local Hydric Soils List Listed on National Hydric Soils List Other (Explain in Remarks)
Remarks: Argent is a Hydric A soil	
WETLAND DETERMINATION	
Hydrophytic Vegetation Present?YesNoWetland Hydrology Present?YesNoHydric Soils Present?YesNo	Sampling Point Within a Wetland? Yes <u>No</u>
Remarks:	
	Approved by HQUSACE 3/92

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Project/Site: BISHOP ROAD MITIGATION SITE Applicant/Owner: NCDOT Investigator(s): CINDY CARR, TOM BARRETT	Date: <u>11/27/2001</u> County: <u>HYDE</u> State: <u>NORTH CAROLINA</u>
Do Normal Circumstances exist on the site? Yes Is the site significantly disturbed (Atypical Situation)? Yes Is this area a potential Problem Area? Yes (If needed, explain on reverse) Yes	s No Transect ID: E
VEGETATION	
Dominant Plant Species Stratum Indicator	Dominant Plant Species Stratum Indicator
1. <u>Baccharis halimifolia</u> shrub FAC	9. Andropogon virginicus herb FAC-
2. <u>Acer rubrum shrub FAC</u>	10. 1 <u>0. 1</u>
3. Liquidambar styraciflua shrub FAC	
4. <u>Myrica cerifera</u> shrub FAC+	12
5. <u>O</u> eurcus nigra shrub FAC	13.
6. Pinus taeda shrub planted	14.
7. Solidago altissima shrub FACU+	15.
8. Rubus sp. vine FAC	16.
Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC Remarks:	C-). >50%
Remarks:	C-). >50%
Remarks: HYDROLOGY Recorded Data (Describe in Remarks) Stream, Lake, or tide Gauge Aerial Photographs Other X_No Recorded Data Available	Wetland Hydrology Indicators: Primary Indicators: Inundated Saturated in Upper 12 Inches Water Marks Drift Lines Sediment Deposits
Remarks: HYDROLOGY Recorded Data (Describe in Remarks) Stream, Lake, or tide Gauge Aerial Photographs Other X No Recorded Data Available Field Observations:	Wetland Hydrology Indicators: Primary Indicators: Inundated Saturated in Upper 12 Inches Water Marks Drift Lines
Remarks: HYDROLOGY Recorded Data (Describe in Remarks) Stream, Lake, or tide Gauge Aerial Photographs Other X_No Recorded Data Available	Wetland Hydrology Indicators: Primary Indicators:
Remarks: HYDROLOGY Recorded Data (Describe in Remarks) Recorded Data (Describe in Remarks) Aerial Photographs Other X No Recorded Data Available Field Observations:	Wetland Hydrology Indicators: Primary Indicators: Inundated Saturated in Upper 12 Inches Water Marks Drift Lines Sediment Deposits Drainage Patterns in Wetlands Secondary Indicators (2 or more required): Oxidized Root Channels in Upper 12 Inches Water-Stained Leaves X Local Soil Survey Data
Remarks: HYDROLOGY	Wetland Hydrology Indicators: Primary Indicators: Inundated Saturated in Upper 12 Inches Water Marks Drift Lines Sediment Deposits Drainage Patterns in Wetlands Secondary Indicators (2 or more required): Oxidized Root Channels in Upper 12 Inches Water-Stained Leaves

Map Unit Name (Series and Phase): Acredale silt loam Taxonomy (Subgroup) Typic Endoaqualfs	Drainage Class: <u>poorly</u> Field Observations Confirm Mapped Type? Yes No
Profile Description: Matrix Color Mottle Colors Depth Matrix Color Mottle Colors (inches) Horizon (Munsell Moist) 0.24 10 VB 4/2	Mottle Texture, Concretions, Abundance/Contrast Structure, etc.
<u> </u>	common, coarse, distinct silty clay loam, friable
<u>12-24+</u> <u>Big2</u> <u>5 Y 6/1</u> <u>10 YR 6/8</u>	common, coarse, distinct silty clay loam, slightly sticky
Hydric Soil Indicators: Histosol Histic Epipedon Sulfidic Odor X Aquic Moisture Regime Reducing Conditions X Gleyed or Low-Chroma Colors	Concretions High Organic Content in Surface Layer in Sandy Soils Organic Streaking in Sandy Soils X Listed on Local Hydric Soils List Listed on National Hydric Soils List Other (Explain in Remarks)
Remarks: Argent is a Hydric A soil	
WETLAND DETERMINATION	
Hydrophytic Vegetation Present?YesNoWetland Hydrology Present?YesNoHydric Soils Present?YesNo	Sampling Point Within a Wetland? Yes No
Remarks:	
	Approved by HQUSACE 3/92

Project/Site:BISHOP ROAD MITIGATION SITEApplicant/Owner:NCDOTInvestigator(s):MARTHA BREWSTER, HAROLD BRADIDo Normal Circumstances exist on the site?Is the site significantly disturbed (Atypical Situation)?Is this area a potential Problem Area?(If needed, explain on reverse)	Y Yes Yes Yes	No i inter	Date: County: State: Community Transect ID: Plot ID:	NORTH NORTH	/27/2001 HYDE H CAROLINA ar old pine F 1
VEGETATION			ta ang ang ang ang ang ang ang ang ang an		
Dominant Plant Species Stratum	Indicator	Dominar	nt Plant Species	<u>Stratum</u>	Indicator
1. Smilax glauca vine	FAC	9. Andrope	ogon virginicus	herb	FAC-
2. Solidago altissima herb	FACU+	10. <u>Acer rul</u>	brum	tree	FAC
3. <u>Rubus sp.</u>	FAC	11. Pinus to	zeda	tree	planted
4. Chasmanthium laxum herb	FACW-	12.			N
5. <u>Baccharis halimifolia</u> shrub	FAC	13		· · · · · · · · · · · · · · · · · · ·	
6. <u>Myrica cerifera</u>	FAC+	14.		· · · · · · · · · · · · · · · · · · ·	
7. Persea borbonia shrub	FACW	15.	,		
8. <u>Liquidambar styraciflua</u> tree	FAC	16.			
Percent of Dominant Species that are OBL, FACW, or FAC Remarks:	(excluding FAC-	-).	>50%		
HYDROLOGY	2+ i + i + i + i + i + i + i + i + i + i	and a sub-	no de compositor de la com Esta de la compositor de la Esta de la compositor de la	a <mark>la esta</mark> de estado de esta en esta esta esta esta esta esta esta esta	1
Recorded Data (Describe in Remarks) Stream, Lake, or tide Gauge Aerial Photographs Other X_No Recorded Data Available		Primary I	Irology Indicators: Indicators: Inundated Saturated in Upper 12 Water Marks	2 Inches	
			Drift Lines Sediment Deposits		
Field Observations:		Seconda	Drainage Patterns in ary Indicators (2 or mo		
Depth of Surface Water: <u>N/A</u> (in.)			Oxidized Root Chann Water-Stained Leaves	nels in Upper 12	. Inches
Depth to Free Water in Pit: <u>N/A</u> (in.)			Local Soil Survey Da		
Depth to Saturated Soil: <u>N/A</u> (in.)			FAC-Neutral Test Other (Explain in Ren	marks)	
	_ _				

Remarks: No obvious surface hydrologic indicators; however, two secondary indicators exist.

(Series and Phase):	Argent loam		Drainage Class: <u>poorly to</u>	o very poorly
Taxonomy (Subgroup)	Typic Endoaqualfs		Field Observations Confirm Mapped Type?	Yes No
Profile Description: Depth (inches) Hori 0-7" A	Matrix Color <u>(Munsell Moist)</u> 5 YR 4/1	Mottle Colors <u>(Munsell Moist)</u>	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc. silty loam, friable, granular
		10 YR 6/8		silty clay loam
<u>_18-24+</u> Btg	2 7.5 YR 6/1	10 YR 6/8	common, distinct, medium	silty clay, blocky
e e constantina e constante de la constante de La constante de la constante de	in a her grad og gan en state 	entre de la construcción de la cons Reference de la construcción de la c	n an	· · · · · · · · · · · · · · · · · · ·
	nerte de la composition de la		n an	
an a				
Hydric Soil Indicators:				
Histosol Histic Epiper Sulfidic Odo X Aquic Moist Reducing Cc	don r are Regime		Concretions High Organic Content in S Organic Streaking in Sand X Listed on Local Hydric Sc Listed on National Hydric Other (Explain in Remark	oils List Soils List
Remarks: Arg	ent is a Hydric A soil		an a	
	FERMINATION Present? Yes	No No No	is Sampling Point Within a Wetland?	Yes No
WETLAND DE' Hydrophytic Vegetation Wetland Hydrology Pres	FERMINATION Present? Yes	No	is Sampling Point Within a Wetland?	Yes No
WETLAND DE' Hydrophytic Vegetation Wetland Hydrology Pres Hydric Soils Present?	FERMINATION Present? Yes	No		Yes No

Project/Site: BISHOP ROAD MITIGATION SITE Applicant/Owner: NCDOT Investigator(s): MARTHA BREWSTER, HAROLD BRADY	Date:11/27/2001County:HYDEState:NORTH CAROLINA
Do Normal Circumstances exist on the site?YesIs the site significantly disturbed (Atypical Situation)?YesIs this area a potential Problem Area?Yes(If needed, explain on reverse)Yes	No Transect ID: F
VEGETATION	A second system of a s
Dominant Plant Species Stratum Indicator	Dominant Plant Species Stratum Indicator
1. <u>Rhus copallina</u> shrub N/1	9. <u>Myrica cerifera</u> <u>shrub</u> <u>FAC+</u>
2. Solidago altissima herb FACU+	10. Solidago tenuifolia herb N/1
3. <u>Rubus spp.</u> shrub FAC	11. Juncus effusus herb FACW+
4. Liquidambar styraciflua tree FAC	12. <u>Pinus taeda</u> <u>tree</u> planted
5. Smilax glauca vine FAC	13.
6. Vaccinium stamineum shrub FACU	14.
7. Andropogon virginicus herb FAC-	15. <u></u>
8. Chasmanthium laxum herb FACW-	16.
Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC	-)>50%
Remarks:	
HYDROLOGY	
Recorded Data (Describe in Remarks) Stream, Lake, or tide Gauge Aerial Photographs Other	Wetland Hydrology Indicators: Primary Indicators: Inundated Saturated in Upper 12 Inches
X No Recorded Data Available	Water Marks Drift Lines
Field Observations:	Sediment Deposits Drainage Patterns in Wetlands
Depth of Surface Water: <u>N/A</u> (in.)	Secondary Indicators (2 or more required): Oxidized Root Channels in Upper 12 Inches
Depth to Free Water in Pit: <u>N/A</u> (in.)	Water-Stained Leaves X Local Soil Survey Data
Depth to Saturated Soil: <u>N/A</u> (in.)	FAC-Neutral Test Other (Explain in Remarks)
Remarks: No obvious surface hydrologic indicators	

DOILD	SOIL	S
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Map Unit Name (Series and Phase):	Acredale silt loam		Drainage Class: <u>poorly</u> Field Observations	
Taxonomy (Subgroup)	Typic Endoaqualfs		Confirm Mapped Type?	Yes No
Profile Description: Depth (inches) Horiz	xon Matrix Color (Munsell Moist) 5 YR 4/1	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc. Silty loam
<u>7-18"</u> <u>BI</u>	7.5 YR 6/1	10 YR 6/8	common, distinct, medium	silty clay loam
<u>18-24+</u> <u>B2</u>	7.5 YR 6/1	10 YR 6/8	common, distinct, medium	silty clay, blocky
	· · · · · · · · · · · · · · · · · · ·	in device of the state of the s	ne o periodo en la composición de la co Reg <mark>uerra de la composición de la composi La composición de la composición de</mark>	
	<u></u>			a the state of the
Hydric Soil Indicators: Histosol Histic Epiped Sulfidic Odor X Aquic Moistu	lon ıre Regime		Organic Streaking in Sand X Listed on Local Hydric So	ils List
Reducing Co X Gleyed or Lo	nditions w-Chroma Colors		Listed on National Hydric Other (Explain in Remark	
Remarks: <i>Acredale is a</i>	Hydric A soil			
WETLAND DET	ERMINATION	angen angel en angel en angel en angel Angel angel en angel en angel en angel en angel Angel en angel en angel en angel en angel en angel en angel en a	dan palan sa sa sa sa sa sanggan manana sa Ng	
Hydrophytic Vegetation Wetland Hydrology Pres Hydric Soils Present?		No No Is this S	Sampling Point Within a Wetland?	Yes No
		and the second	Aī	proved by HOUSACE 3/92

Project/Site: BISHOP ROAD MITIGATION SITE Applicant/Owner: NCDOT Investigator(s): MARTHA BREWSTER, HAROLD BRADY	Date: 11/27/2001 County: HYDE State: NORTH CAROLINA
Do Normal Circumstances exist on the site? Yes Is the site significantly disturbed (Atypical Situation)? Yes Is this area a potential Problem Area? Yes (If needed, explain on reverse)	No Transect ID: F
VEGETATION	
Dominant Plant Species Stratum Indicator	Dominant Plant Species Stratum Indicator
1. Myrica heterophylla shrub FACW	9. Liquidambar styraciflua tree FAC
2. Arundinaria gigantea herb FACW	10. Quercus nigra tree FAC
3. Andropogon virginicus herb FAC-	11. Solidago spp. herb N/I
4. Chasmanthium laxum herb FACW-	12. Pinus taeda tree planted
5. Acer rubrum tree FAC	13
6. Quercus stellata tree FACU	14.
7. Rubus sp	15.
8. <u>Smilax rotundifolia vine FAC</u>	
Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC	C-). >50%
Remarks:	
HYDROLOGY	a na analas
Recorded Data (Describe in Remarks) Stream, Lake, or tide Gauge Aerial Photographs Other XNo Recorded Data Available Field Observations: Depth of Surface Water: N/A(in.) Depth to Free Water in Pit: 16(in.) Depth to Saturated Soil: N/A(in.)	Wetland Hydrology Indicators: Primary Indicators: Inundated Saturated in Upper 12 Inches Water Marks Drift Lines Sediment Deposits Drainage Patterns in Wetlands Secondary Indicators (2 or more required): X Oxidized Root Channels in Upper 12 Inches Water-Stained Leaves X Local Soil Survey Data FAC-Neutral Test Other (Explain in Remarks)

Remarks: Few oxidized root channels in upper 12". No obvious hydrological connection.

Map Unit Name (Series and Phase):	Acredale silt loam	n an an Anna. An Anna Anna Anna Anna Anna Anna Anna A	Drainage Class: <u>poorly</u> Field Observations	
Taxonomy (Subgroup)	Typic Endoaqualfs	· · · · · · · · · · · · · · · · · · ·	Confirm Mapped Type?	Yes No
Profile Description: Depth (inches) Hori	Matrix Color zon (Munsell Moist)	Mottle Colors (Munsell Moist)	- Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
	7.5 YR 3/2	an a		ty clay loam, organic material
<u> </u>	2 5 YR 4/1	· · · · · · · · · · · · · · · · · · ·		silty clay loam
<u>4-16" Btg</u>	<u>2.5 YR 6/2</u>	5 YR 7/8	common, distinct, coarse	sandy clay loam, fine
<u>16-24"</u> <u>Btg</u>	<u>2 2.5 YR 7/1</u>	7.5 YR 6/8	common, prominent, coarse	sandy clay, plastic, fine
Hydric Soil Indicators: Histosol Histic Epipe Sulfidic Odo X Aquic Moist X Reducing Cc X Gleyed or Lc	or ure Regime		Concretions High Organic Content in Organic Streaking in San X Listed on Local Hydric S Listed on National Hydri Other (Explain in Remar	oils List c Soils List
Remarks: 1 inch water	lense at approximately 16" perched	l on clay.		
WETLAND DE	TERMINATION	an a		
Hydrophytic Vegetation Wetland Hydrology Pre Hydric Soils Present?		0	Sampling Point Within a Wetland	? Yes No
Remarks:				pproved by HQUSACE 3/92
			a harifi fi shekari na si yekeya. Manaziri	

Project/Site: BISHOP ROAD MITIGATION SITE Applicant/Owner: NCDOT Investigator(s): MARTHA BREWSTER, HAROLD BRADY	Date: 11/27/2001 County: HYDE State: NORTH CAROLINA
Do Normal Circumstances exist on the site? Yes Is the site significantly disturbed (Atypical Situation)? Yes Is this area a potential Problem Area? Yes (If needed, explain on reverse) Yes	NoCommunity ID:5 year old pineNoTransect ID:FNoPlot ID:4
VEGETATION	a bara na sana ang kana na sana na sana Bara sana sana sana sana sana sana sana s
Dominant Plant Species Stratum Indicator	Dominant Plant Species Stratum Indicator
1. <u>Rubus spp.</u> <u>shrub</u> <u>FAC</u>	9. <u>Smilax rotundifolia</u> vine FAC
2. Quercus nigra tree FAC	10. Chasmanthium laxum herb FACW-
3. Solidago spp. herb UPL	11. Pinus taeda tree planted
4. Andropogen virginicus herb FAC-	12.
5. Eupatorium capillifolium herb FACU	13.
6. Baccharis halimifolia shrub FAC	14
7. Myrica heterophylla shrub FACW	15.
8. <u>Persea borbonia shrub FACW</u>	16.
Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC	-)>50%
Remarks: Vegetation is mainly upland species, includes sumac, and hexasty	lis.
HYDROLOGY	[24] B. C. B. Sterner, and S. S. Sandara, "A second structure of the st
Recorded Data (Describe in Remarks) Stream, Lake, or tide Gauge Aerial Photographs Other X No Recorded Data Available	Wetland Hydrology Indicators: Primary Indicators: Inundated Saturated in Upper 12 Inches Water Marks Drift Lines
Field Observations: Depth of Surface Water: <u>N/A</u> (in.)	Sediment Deposits Drainage Patterns in Wetlands Secondary Indicators (2 or more required): Oxidized Root Channels in Upper 12 Inches
Depth to Free Water in Pit: <u>N/A</u> (in.)	Water-Stained Leaves Local Soil Survey Data FAC-Neutral Test

Other (Explain in Remarks)

Remarks: No obvious hydrology on the surface

<u>N/A</u> (in.)

Depth to Saturated Soil:

	panoke silt loam c Endoaquults		Field Observations	at poorly Yes No
Profile Description: Depth (inches) Horizon	Matrix Color (Munsell Moist) 7.5 YR 4/2	Mottle Colors. (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
5-16" <u>E</u>	2.5 Y 7/3		ана. 191 <u> — Паральная страная страна</u>	silt loam, granular, friable
<u>16-24" Btg</u>	10 YR 7/2	2.5 Y 7/8	common, coarse, prominent s	ilty clay, subangular blocky
			· · · · · · · · · · · · · · · · · · ·	
n an				
			· · · · · · · · · · · · · · · · · · ·	
Hydric Soil Indicators:	an a			
Histosol Histic Epipedon Sulfidic Odor X Aquic Moisture Re Reducing Conditio Gleyed or Low-Chi	ns		Concretions High Organic Content in Organic Streaking in San Listed on Local Hydric So Listed on National Hydric Other (Explain in Remar	oils List > Soils List
Remarks: Chap.	anoke is a Hydric B soil			
WETLAND DETER		ang panaharan kan sa kan sa		
Hydrophytic Vegetation Prese Wetland Hydrology Present? Hydric Soils Present?	Yes No Yes No	o de la construcción de la const	Sampling Point Within a Wetland	? Yes No
Remarks:				
			A	pproved by HQUSACE 3/92

Applicant/Owner: NCDOT	ypical Situation)?	DY Yes Yes Yes	No No No	Date: County: State: Community Transect ID Plot ID:	3 1	
VEGETATION			· · · · · · · · · · · · · · · · · · ·		· · · · · · · · · · · · · · · · · · ·	
Dominant Plant Species	Stratum	Indicator	Dominan	t Plant Species	Stratum Indicator	· ·
1. Solidago spp.	herb	UPL	9. <u>Rhus cop</u>	pallina	shrub N/1	· · ·
2. Symplocos tinctoria	shrub	FAC	10. <u>Smilax b</u>	ona-nox	vine FAC	
3. Smilax rotundifolia	vine	FAC	11. <u>Pinus tae</u>	eda	tree planted	
4. Andropogon spp.	herb	FAC-	12.			12
5. Baccharis halimifolia	shrub	FAC	13			
6. Liquidambar styraciflua	tree	FAC	14.			
7. <u>Rubus spp</u> .	shrub	FAC	15.	· · · · ·		
8. Quercus stellatta	tree	FACU	16.			
Percent of Dominant Species that are Remarks:	OBL, FACW, or FAC	2 (excluding FAC-	••••••••••••••••••••••••••••••••••••••	>50%		
HYDROLOGY	n e praes		n na sana ang ang ang ang ang ang ang ang ang	a a san mana a sa	er 1930 - State Carlos and State Carlos and State 1930 - State Carlos and State Carlos and State Carlos and State State State State State State State State State 1930 - State St	
Recorded Data (Describe in Rer Stream, Lake, or tic Aerial Photographs Other X No Recorded Data Available	de Gauge		Primary In	Inundated Saturated in Upper 1 Water Marks Drift Lines	12 Inches	
Field Observations:	a Sile ang Sile ang Sile ang Sile ang Sile ang Si		an fals at a star	Sediment Deposits Drainage Patterns in	Wetlands	
Depth of Surface Water:	<u>N/A</u> (in.)				nels in Upper 12 Inches	1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -
Depth to Free Water in Pit:	<u>N/A</u> (in.)		e e 19 <u>–</u> 1	Water-Stained Leave Local Soil Survey D		
Depth to Saturated Soil:	<u>N/A</u> (in.)			FAC-Neutral Test Other (Explain in Re	emarks)	
Remarks: No obvious surface hydrol	logio indicatoro				and the second	

Map Unit Name (Series and Phase):	Chapanoke silt loam		Drainage Class: <u>somewhat po</u> Field Observations	orly
Taxonomy (Subgroup)	Aeric Endoaquults		Confirm Mapped Type? Ye	s No
Profile Description: Depth (inches) Horiz 0-6" A	Matrix Color <u>(Munsell Moist)</u> 7.5 YR 4/2	Mottle Colors (Munsell Moist)	Mottle To Abundance/Contrast	exture, Concretions, Structure, etc. silt loam
<u>6-19" E</u>	<u> </u>			silt loam
<u>19-24+</u> Btg		7.5 Y 7/8	common, coarse, prominent	silty clay
Hydric Soil Indicators:				
Histosol Histic Epiped Sulfidic Odo X Aquic Moistu Reducing Co Gleyed or Lo	r 1re Regime		Concretions High Organic Content in Surfa Organic Streaking in Sandy Sc Listed on Local Hydric Soils L Listed on National Hydric Soil Other (Explain in Remarks)	oils .ist
Remarks	Chapanoke is a Hydric B soil			
WETLAND DE	TERMINATION	en andre ander son ander son ander Stander of Standard Standard Standard Standard Standard Standard Standard St Standard Standard Sta		
Hydrophytic Vegetation Wetland Hydrology Pres Hydric Soils Present?	sent? Yes	No No No Is this S	ampling Point Within a Wetland?	Yes No
Remarks:				l an an a' chuir an an an a' chuir Iomraichte an saidhean An an an Annaichte
			Аррго	ved by HQUSACE 3/92

Project/Site: BISHOP ROAD M Applicant/Owner: NCDOT Investigator(s): CINDY CARR, TO	MITIGATION SITE OM BARRETT	ana ang ang ang ang ang ang ang ang ang		Date: County: State:	· · · ·	11/27/2001 HYDE XTH CAROLINA
Do Normal Circumstances exist on the site significantly disturbed (Aty Is this area a potential Problem Area?) (If needed, explain on reverse)	ypical Situation)?	Yes Yes Yes	No No No	Community Transect ID Plot ID:		old pine plantation G I
VEGETATION			· · · ·	· · · · · · · · · · · · · · · · · · ·		
Dominant Plant Species	Stratum	Indicator	Dominar	nt Plant Species	Stratum	Indicator
1. Persea borbonia	shrub	FACW	9. <u>Solidag</u>	o altissima	herb	FACU+
2. <u>Baccharis halimifolia</u>	shrub	FAC	10. <u>Chasma</u>	nthium laxum	herb	FACW-
3. <u>Myrica cerifera</u>	shrub	FAC+	11	· · · · · · · · · · · ·		
4. Pinus taeda	shrub	planted	12.	· · · · · · · · · · · · · · · · · · · ·	<u> </u>	
5. <u>Rubus spp</u> .	vine	FAC	13.			
6. <u>Smilax laurifolia</u>	vine	FACW+	14			÷
7. <u>Smilax smallii</u>	vine	FACU	15.	<u> </u>	<u> </u>	
8. <u>Andropogon virginicus</u>	herb	FAC-	16.		· · · · · · · · · ·	
Percent of Dominant Species that are	OBL, FACW, or FAC	(excluding FAC-).	>50%		
Percent of Dominant Species that are Remarks:	OBL, FACW, or FAC	C (excluding FAC-).	>50%	· · · · · ·	
Remarks: HYDROLOGY		C (excluding FAC.				
Remarks:	narks) ie Gauge	c (excluding FAC:	Wetland Hyd Primary I	rology Indicators:	2 Inches	
Remarks: HYDROLOGY Recorded Data (Describe in Ren Stream, Lake, or tid Aerial Photographs Other	narks) ie Gauge	cexcluding FAC.	Wetland Hyd Primary I Seconda X X	rology Indicators: ndicators: Inundated Saturated in Upper I Water Marks	Wetlands ore required): nels in Upper es ata	12 Inches

SOILS A CONTRACT OF ANY AND AN AND AN AND AN AND AN AND AN AND AN		
Map Unit Name (Series and Phase): Acredale silt loam		Drainage Class: poorly
Taxonomy (Subgroup) <i>Typic Endoaqualfs</i>		Field Observations Confirm Mapped Type? Yes No
Profile Description: Matrix Color Depth Matrix Color (inches) Horizon 0-5" A	Mottle Colors (<u>Munsell Moist</u>)	Mottle Texture, Concretions, Abundance/Contrast Structure, etc. Ioam, friable
5-18" Btg1 10 YR 7/1	7.5 YR 5/8	common, med-coarse, distinct silt loam
<u>18-24+ Btg2 10 YR 5/1</u>	10 YR 6/8	common, coarse, distinct silty clay loam, Fe concretions
	2.5 YR 4/8	common, medium, prominent
	and a second	na an an an an taobh ann an taoine an tao Taoine an taoine an ta
Hydric Soil Indicators: Histosol Histic Epipedon Sulfidic Odor X Aquic Moisture Regime Reducing Conditions X Gleyed or Low-Chroma Colors		Concretions High Organic Content in Surface Layer in Sandy Soils Organic Streaking in Sandy Soils X Listed on Local Hydric Soils List Listed on National Hydric Soils List Other (Explain in Remarks)

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes	No	
Wetland Hydrology Present? Yes	No	
Hydric Soils Present? Yes	No	Is this Sampling Point Within a Wetland? Yes No

Remarks:

Approved by HQUSACE 3/92

				<u> </u>
Project/Site: BISHOP ROAD MITIGATION SITE Applicant/Owner: NCDOT Investigator(s): CINDY CARR, TOM BARRETT			Date: County: State:	11/27/2001 HYDE NORTH CAROLINA
Do Normal Circumstances exist on the site? Is the site significantly disturbed (Atypical Situation)? Is this area a potential Problem Area? (If needed, explain on reverse)	Yes Yes Yes	No No No	Community ID: Transect ID: Plot ID:	5 year old pine plantation G 2
VEGETATION	a an ann an Arraige An Arraige ann an Arraige	s is a subset		
Dominant Plant Species Stratum	Indicator	Dominant Pl	ant Species St	ratum Indicator
1. <u>Pinus taeda</u>	planted	9.		
2. <u>Myrica cerifera</u> shrub	FAC+	10.	<u> </u>	· · · · · · · · · · · · · · · · · · ·
3. <u>Baccharis halimifolia</u> shrub	FAC	11	· · · · · · · · · · · · · · · · · · ·	and a state of the second s
4. <u>Rubus spp.</u> vine	FAC	12.		a manaka kata da ba
5. <u>Solidago altissima herb</u>	FACU+	13.		
6. Solidago microcephala herb	UPL	14.	· · · · · · · · · · · · · · · · · · ·	
7. Andropogon virginicus herb	FAC-	15.		
8	i i i	16.		
Percent of Dominant Species that are OBL, FACW, or FAC	(excluding FAC-)	e atu • coutesae <u>to</u>	>50%	
			a transformer (* 1997) Transformer (* 1997)	
Remarks: Logging deck row.				
		··· ···		
HYDROLOGY	a tana ang sa sa karang sa	en an	e in see e see e. Status	an ina ana aona ang salahan na bina na salahan na salah Bina na salahan
Recorded Data (Describe in Remarks)		Wetland Hydrolo	gy Indicators:	and the second second second
Stream, Lake, or tide Gauge	an was have been	Primary Indic	ators:	
Aerial Photographs Other			ndated	1
Other No Recorded Data Available			urated in Upper 12 In ter Marks	cnes
			ft Lines	
<u>in a second de la construcción de</u>	Photo and a second		liment Deposits	이 가슴 옷을 알았는 것을 수 있다.
Field Observations:			inage Patterns in Wet	
Depth of Surface Water: <u>N/A</u> (in.)		Secondary In	idicators (2 or more re idized Root Channels	in Upper 12 Inches
		Wa	ter-Stained Leaves	
Depth to Free Water in Pit: <u>N/A</u> (in.)			al Soil Survey Data C-Neutral Test	
Depth to Saturated Soil: <u>N/A</u> (in.)		Oth	er (Explain in Remar	ks)
Remarks: No obvious hydrologic indicators		an a		

a she a second hadd and

Map Unit Name (Series and Phase):	p Unit Name ries and Phase): <u>Acredale silt loam</u>			Poorly
Taxonomy (Subgroup)	Typic Endoaqua	alfs	Field Observations Confirm Mapped Type?	Yes
<u>Profile Description:</u> Depth <u>(inches)</u> <u>Horizon</u>	Matrix Color <u>(Munsell Moist)</u>	Mottle Colors (<u>Munsell Moist)</u>	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
<u>0-5"</u> <u>A</u>	<u>10 YR 3/1</u>	10 170 6/0	common, fine, distinct	silt loam, friable silty clay loam, friable
<u>5-18" Btg1</u> 18-24+ Btg2	<u> </u>	<u>10 YR 6/8</u> 10 YR 4/6	few, fine, faint	silty clay loam, firm
Hydric Soil Indicators:			<mark>adarania.</mark> Antonio de la contra	
Histosol Histic Epipedon Sulfidic Odor X Aquic Moisture Regir Reducing Conditions X Gleyed or Low-Chron	化二乙酸医二乙酸乙酸 医白红		Concretions High Organic Content in Organic Streaking in Sa X Listed on Local Hydric 3 Listed on National Hydr Other (Explain in Rema	Soils List ic Soils List
Remarks: Acredale is a	Hydric A soil			
WETLAND DETERM	INATION			
Hydrophytic Vegetation Present? Wetland Hydrology Present? Hydric Soils Present?	Yes No Yes No Yes No		Sampling Point Within a Wetlan	d? Yes No
Remarks:				

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	· · · · · · · · · · · · · · · · · · ·			<u> </u>	<u> </u>
Project/Site: BISHOP ROAD MITIGATION SITE Applicant/Owner: NCDOT Investigator(s): CINDY CARR, TOM BARRETT			Date: County: State:		1/27/2001 HYDE H CAROLINA
Do Normal Circumstances exist on the site? Is the site significantly disturbed (Atypical Situation)? Is this area a potential Problem Area? (If needed, explain on reverse)	Yes Yes Yes	No No No	Community I Transect ID: Plot ID:		d pine plantation G 3
VEGETATION	· ·	· · · · · · · · · · · · · · · · · · ·			
Dominant Plant Species Stratum	Indicator	Dominan	t Plant Species	Stratum	Indicator
1. <u>Baccharis halimifolia</u> shrub	FAC	9. Erianthu	ıs gigantea	herb	FACW
2. <u>Pinus taeda shrub</u>	planted	10.			
3. <u>Acer rubrum</u> shrub	FAC	11.			· · · · · · · · · · · ·
4. <u>Rubus spp.</u> vine	FAC	12.	an to stand		:
5. <u>Smilax rotundifolia</u> vine	FAC	13	· · · · · · · · · · · · · · · · · · ·	<u> </u>	<u> </u>
6. <u>Solidago altissima herb F</u>	FACU+	14.			·
7. Andropogon virginicus herb	FAC-	15.	· · · · ·	<u> </u>	
8. Solidago microcephala herb	UPL	16.			
Percent of Dominant Species that are OBL, FACW, or FAC (ex	cluding FAC-).	· · · · · · · · · · · · · · · · · · ·	>50%	· · · · · · · · · · · · · · · · · · ·	
Remarks:					
HYDROLOGY		n an an Argan da Angan	an in the state	ala successive the state of the second s	
Recorded Data (Describe in Remarks) Stream, Lake, or tide Gauge Aerial Photographs Other		Primary In	Inundated Saturated in Upper 12	2 Inches	
X No Recorded Data Available		,	Water Marks Drift Lines	a se	
Field Observations: Depth of Surface Water: N/A (in.)		Secondar	Sediment Deposits Drainage Patterns in V y Indicators (2 or mos Oxidized Root Chann	re required): iels in Upper 12	2 Inches
Depth to Free Water in Pit: <u>N/A</u> (in.)		·	Water-Stained Leaves Local Soil Survey Dat	5.	
Depth to Saturated Soil: <u>N/A</u> (in.)		I	FAC-Neutral Test Other (Explain in Rer		
Remarks: No obvious hydrologic indicators					

Map Unit Name (Series and Phase):	Acredale silt loam	Drainage Class: Poorly			
Taxonomy (Subgroup)	Typic Endoaqualfs	Field Observations Confirm Mapped Type? Yes No			
Profile Description: Depth (inches) Horizon	Matrix Color Mottle Colors (Munsell Moist) (Munsell Moist) 10 YR 3/1	Mottle Texture, Concretions, Abundance/Contrast Structure, etc. <i>loam, friable, nonsticky</i>			
<u> </u>	10 YR 4/1	loam, friable, nonsticky			
<u>5-24+</u> <u>Btg</u>	<u>10 YR 7/2 10 YR 5/8</u>	common, coarse, distinct silt loam, friable, nonsticky			
Hydric Soil Indicators: Histosol Sulfidic Odor X Aquic Moisture Reg Reducing Condition X Gleyed or Low-Chre	15 , which is a standard s	Concretions High Organic Content in Surface Layer in Sandy Soils Organic Streaking in Sandy Soils X Listed on Local Hydric Soils List Listed on National Hydric Soils List Other (Explain in Remarks)			
Remarks: Acrea	dale is a Hydric A soil				
WETLAND DETER	MINATION				
Hydrophytic Vegetation Preser Wetland Hydrology Present? Hydric Soils Present?	Yes No	Sampling Point Within a Wetland? Yes No			
Remarks:		and a state of the forest and dear the forest			

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Project/Site: BISHOP ROAD MITH Applicant/Owner: NCDOT Investigator(s): CINDY CARR, TOM I	BARRETT			Date: County: State:	NORTI	/27/2001 HYDE H CAROLINA
Do Normal Circumstances exist on the sit Is the site significantly disturbed (Atypica Is this area a potential Problem Area? (If needed, explain on reverse)		Yes Yes Yes	No No No	Transect ID: Plot ID:	ID: <u>5 year ola</u>	pine plantation G 4
VEGETATION	and the second second	and a second second Second second second Second second	ana ang ang ang ang ang ang ang ang ang		and a second s	in series a Line series a
Dominant Plant Species	<u>Stratum</u>	Indicator	Dominan	t Plant Species	<u>Stratum</u>	Indicator
1. Pinus taeda	Shrub	Planted	9. <u>Smilax s</u>	mallii	Vine	FACU
2. Quercus nigra	Shrub	FAC	10. <u>Gelsemi</u>	um sempervirens	Vine	FACU
3. Quercus alba	Shrub	FACU	11. <u>Solidago</u>	o altissima	Herb	FACU+
4. Cyrilla racemiflora	Shrub	FACW	12. <u>Andropo</u>	ogon virginicus	Herb	FAC-
5. Liquidambar styraciflua	Shrub	FAC	13.		nas a trappa a se an Status	
6. Myrica cerifera	Shrub	FACW	14.	<u> </u>	· · · · · · · · · · · · · · · · · · ·	2 . J
7. <u>Nyssa sylvatica</u>	Shrub	FAC	15.			
8. <u>Rubus spp.</u>	Vine	FAC	16.			the second s The second secon
Percent of Dominant Species that are OBI	, FACW, or FAC	(excluding FAC-)	>50%		
Remarks:				an an an Ar Chairtean an Arailtean Chairtean an Arailtean		
HYDROLOGY						
Recorded Data (Describe in Remark Stream, Lake, or tide Ga		$(1-2)^{-1} \leq 1 \leq 1$		rology Indicators: ndicators:	See the st	ta di Kabu
Aerial Photographs	inser en er erenene.			Inundated	an ing pananan di ng Tan	an an an tha an an an Tha an an tha an
Other X No Recorded Data Available				Saturated in Upper 12 Water Marks Drift Lines	2 Inches	
Field Observations:	e de la presidencia de la composición d Presidencia de la composición de la comp Presidencia de la composición de la comp			Sediment Deposits Drainage Patterns in		
Depth of Surface Water:	<u>V/A (</u> in.)		<u></u>	ry Indicators (2 or mo Oxidized Root Chann	iels in Upper 12	l Inches
Depth to Free Water in Pit:	<u>V/A_(in.)</u>			Water-Stained Leave Local Soil Survey Da		
Depth to Saturated Soil:	<u>i/A (in.)</u>			FAC-Neutral Test Other (Explain in Ret	marks)	
Remarks:						

Map Unit Name (Series and Phase):	Chapanoke Silt I	Loam	Drainage Class:	Somewhat Poorly
Taxonomy (Subgroup)	Aeric Endoaqı	uults	Field Observations Confirm Mapped Type	er Yes No
<u>Profile Description:</u> Depth <u>(inches)</u> <u>Horizon</u>	Matrix Color (<u>Munsell Moist)</u>	Mottle Colors <u>(Munsell Moist)</u>	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc. Loam, friable, subangular
<u> </u>	<u> </u>	andy - Dana and Arada ang si Tang ang sinang sina Tang sinang si	1997 - 1997 -	blocky, non-sticky Loam, friable, subangular blocky, non-sticky
<u>4-0</u> <u><i>B</i>/A</u> 6-20 Bt	2.5 ¥ 7/4	10 YR 6/8	Few, Medium, Distinct	Silt Loam, friable, non-sticky
<u>20-24+Btg</u>	<u>10 YR 6/1</u>	10 YR 5/8	Many, Coarse, Distinct	Silly clay loam, friable, non- sticky
				4
	••••••••••••••••••••••••••••••••••••••			· · · · · · · · · · · · · · · · · · ·
Hydric Soil Indicators: Histosol Histic Epipedon Sulfidic Odor X Aquic Moisture Reg Reducing Condition X Gleyed or Low-Chro	s a sin a state da serve		Concretions High Organic Content Organic Streaking in S Listed on Local Hydri Listed on National Hy Other (Explain in Ren	c Soils List dric Soils List
Remarks: Depleted matrix app	Chapanoke is a Hyc ears to be "albic" beginnin	dric B soil ing at 24-inches; color is 2.5	Y 8/1.	
WETLAND DETERM	MINATION	e fin fin de la compañía de la comp Transferencia de la compañía de la co	an an santa da karangan sa saka sa	
Hydrophytic Vegetation Presen Wetland Hydrology Present? Hydric Soils Present?	Yes	No No Is this	s Sampling Point Within a Wetl	and? Yes <u>No</u>
Remarks:				
				Approved by HQUSACE 3/92

Project/Site: BISHOP ROAD MITIGATION SITE Applicant/Owner: NCDOT Investigator(s): MARTHA BREWSTER, HAROLD E	in the second		Date: County: State:	h	27/2001 IYDE CAROLINA
Do Normal Circumstances exist on the site? Is the site significantly disturbed (Atypical Situation)? Is this area a potential Problem Area? (If needed, explain on reverse)	Yes Yes Yes	No No No	Community Transect ID: Plot ID:	ID: <u>5 year old p</u>	pine plantation H 1
VEGETATION			e en la dente fatue de la seconda. T		
Dominant Plant Species Stratum	Indicator	Dominar	nt Plant Species	<u>Stratum</u>	Indicator
1. Pinus taeda Shrub	planted	9. Solidage	o altissima	Herb	FACU+
2. <u>Acer rubrum</u> <u>Tree</u>	FAC	10. Solidage	o microcephala	Herb	N/I
3. Liquidambar styraciflua Tree	FAC	· 11. · · · · · ·		· · · · · ·	
4. <u>Rubus spp.</u> Shrub	FAC	12.		a de la companya de l La companya de la comp	e sed se figure
5. <u>Persea borbonia</u> Shrub	FACW	13.	n an	e vez a la constructión de la construcción de la construcción de la construcción de la construcción de la const	n an
6. <u>Baccharis halimifolia</u> Shrub	FAC	14.			
7. Vaccinium stamineum Shrub	FACU	15.			
8. <u>Smilax glauca</u> Vine	FAC	16.			
Percent of Dominant Species that are OBL, FACW, or	FAC (excluding FAC	•)	>50%	- 	
Remarks:		a series and a series of the s			
HYDROLOGY				a de articlité de transférie de la composition de la composition de la composition de la composition de la comp	na di tatan na santa sa
Recorded Data (Describe in Remarks) Stream, Lake, or tide Gauge Aerial Photographs Other No Recorded Data Available		Primary Is	rology Indicators: ndicators: Inundated Saturated in Upper 12 Water Marks	2 Inches	and Maria Maria Maria Maria Maria Maria Maria Maria Maria Maria Maria Maria Maria Maria
	en rechergere de la composition de la c		Drift Lines Sediment Deposits	n a Marina da La parte La constante da Cara de La constante La filia da Cara de La constante da Car	
Field Observations:		Seconda	Drainage Patterns in ry Indicators (2 or mo	Wetlands	
Depth of Surface Water: <u>N/A</u> (in.)			Oxidized Root Chann	nels in Upper 12	Inches
Depth to Free Water in Pit: <u>N/A</u> (in.)			Water-Stained Leaves Local Soil Survey Da		
Depth to Saturated Soil: <u>N/A</u> (in.)			FAC-Neutral Test Other (Explain in Rea	marks)	
			and a second	<u>.</u>	

Remarks: No obvious surface hydrology.

Map Unit Name (Series and Phase):	Yeopim silt loam			Moderately well
Taxonomy (Subgroup)	Aquic hapludults		Field Observations Confirm Mapped Typ	e? Yes No
Profile Description: Depth (inches) Horizo	Matrix Color (Munsell Moist) 2.5 YR 3/1	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc. Silt loam, many roots, granular, friable
<u>5-16</u> <u>B</u> <u>16-24+</u> <u>Bt</u>	<u> </u>	7.5 YR 7/2	Common, Medium, Distinct	Silt loam Silty clay loam, subangular blocky, friable
Hydric Soil Indicators:				
Histosol Histic Epipedo Sulfidic Odor Aquic Moistur Reducing Cond Gleyed or Low	e Regime		Concretions High Organic Content Organic Streaking in Listed on Local Hydri Listed on National Hy Other (Explain in Re	ic Soils List /dric Soils List
Remarks: Yeopim	is classified as a Hydric B soil. Th	ne colors observed do not m	natch the typical pedon of this	séries.
WETLAND DET	ERMINATION			
Hydrophytic Vegetation P Wetland Hydrology Prese Hydric Soils Present?			Sampling Point Within a Wetl	and? Yes No
Remarks:				
	and the second	the second se		Approved by HQUSACE 3/92

 $\sum_{i=1}^{n} (a_i a_i) = (a_i$

			_
Project/Site: BISHOP ROAD MITIGATION SITE Applicant/Owner: NCDOT Investigator(s): MARTHA BREWSTER, TOM BARRET	r	Date: 11/28/2001 County: HYDE State: NORTH CAROLINA	
Do Normal Circumstances exist on the site? Is the site significantly disturbed (Atypical Situation)? Is this area a potential Problem Area? (If needed, explain on reverse)	Yes Yes Yes	No Transect ID: I	
VEGETATION			- }-
Dominant Plant Species Stratum	Indicator	Dominant Plant Species Stratum Indicator	
1. Quercus nigra tree	FAC	9. Liquidambar styraciflua tree FAC	
2. <u>Acer rubrum</u> tree	FAC	10. Vaccinium arboreum shrub FACU	· .
3. <u>Gelsemium sempervirens</u> vine	FAC	11. Quercus phellos tree FACW-	
4. Quercus stellata tree	FACU	12. <u>Rex opaca</u> <u>shrub</u> <u>FAC-</u>	<u> </u>
5. <u>Myrica cerifera</u> shrub	FAC+	13. <u>Pinus taeda tree</u> planted	
6. Ilex glabra shrub	FACW	. 14	:
7. Smilax rotundifolia vine	FAC	15	1
8. <u>Persea borbonia</u> shrub	FACW	16.	
Percent of Dominant Species that are OBL, FACW, or FAC	C (excluding FAC	-)	
Remarks:			
HYDROLOGY			
Recorded Data (Describe in Remarks) Stream, Lake, or tide Gauge Aerial Photographs Other X No Recorded Data Available Field Observations: Depth of Surface Water: N/A (in.) Depth to Free Water in Pit: N/A (in.) Depth to Saturated Soil:		Wetland Hydrology Indicators: Primary Indicators: Inundated Saturated in Upper 12 Inches Water Marks Drift Lines Sediment Deposits Drainage Patterns in Wetlands Secondary Indicators (2 or more required): Oxidized Root Channels in Upper 12 Inches Water-Stained Leaves Local Soil Survey Data X FAC-Neutral Test Other (Explain in Remarks)	
Remarks: No obvious hydrologic indicators			

Map Unit Name (Series and Phase): Taxonomy (Subgroup)	Yeopim sili Aquic Hapi		Drainage Class: Field Observations Confirm Mapped Type?	Moderately Well Yes No
Profile Description: Depth (inches) Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc. many fine medium roots
<u>2-4"</u> <u>A</u>	<u> </u>		an an an an Araba an Araba an Araba an Arab	loam, granular, friable
<u>4-15" Bt1</u>	<u>2.5 Y 7/6</u>	2.5 Y 6/8	few, fine, faint	sandy loam, friable, fine
<u>15-24+</u> <u>Bt2</u>	2.5 Y 7/6	2.5 Y 6/8	common-many, coarse, distinct	sandy clay loam, firm
	· · · · · · · · · · · · · · · · · · ·	2.5 Y 6/1	commonmany, coarse, distinct	
	· · · · · · · · · · · · · · · · · · ·			
Hydric Soil Indicators: Histosol Histic Epipedon Sulfidic Odor X Aquic Moisture Regi Reducing Conditions Gleyed or Low-Chron	an a		Concretions High Organic Content in Organic Streaking in Sar Listed on Local Hydric S Listed on National Hydri Other (Explain in Rema	oils List c Soils List
Reinarks: Y	eopim is a Hydric B soil			
WETLAND DETERM	IINATION			
Hydrophytic Vegetation Present Wetland Hydrology Present? Hydric Soils Present?	? Yes Yes No Yes		his Sampling Point Within a Wetland	1? Yes No
Remarks:				
	sense oste oblaste márgara Telefonia		n an an an an an an ann an an ann an an	Approved by HQUSACE 3/92

Do Normal Circumstances exist on the Is the site significantly disturbed (Aty Is this area a potential Problem Area? (If needed, explain on reverse)	TER, TOM BARRET	T Yes Yes Yes	No No No	Date: County: State: Community Transect ID Plot ID:		1/28/2001 HYDE TH CAROLINA vear old pine I 2
VEGETATION Dominant Plant Species	Stratum	Indicator	Domina	nt Plant Species	Stratum	Indicator
1. Smilax rotundifolia	u <u> </u>	FAC		um stamineum	shrub	FACU
	vine			and the second second		
2. <u>Acer rubrum</u>	tree	FAC	10. <u>Ilex opa</u>			FAC-
3. Juncus effusus	herb	FACW+		o fistulosa	<u>herb</u>	FAC+
4. <u>Arundinaria gigantea</u>	herb	FACW+	12. <u>Chasma</u>	nthium laxum	herb	FACW-
5. <u>Gelsemium sempervirens</u>	vine	FAC	13. <u>Pinus ta</u>	eda	tree	planted
6. <u>Quercus nigra</u>	tree	FAC	14	· ·		·
7. <u>Symplocos tinctoria</u>	shrub	FAC	15.			
8. Eupatorium capillifolium	herb	FACU	16	· · · ·	` _	······································
Remarks:						
HYDROLOGY			e e e e e e e e e e e e e e e e e e e		· ·	
Recorded Data (Describe in Rem Stream, Lake, or tide Aerial Photographs Other X No Recorded Data Available				rology Indicators: ndicators: Inundated Saturated in Upper Water Marks Drift Lines Sediment Deposits	12 Inches	
Field Observations:	e te ser a successive te set at successive			Drainage Patterns in		
Depth of Surface Water:	<u>N/A</u> (in.)		Seconda	ry Indicators (2 or m Oxidized Root Char	nnels in Upper	12 Inches
Depth to Free Water in Pit:	<u>N/A</u> (in.)			Water-Stained Leav Local Soil Survey D		
Depth to Saturated Soil:	<u>N/A</u> (in.)		<u></u>	FAC-Neutral Test Other (Explain in R	emarks)	
Remarks: No obvious hydrologic indi	cators; however, tw	lo secondary indica	tors exist.			

Map Unit Name (Series and Phase):	Map Unit Name (Series and Phase): Yonges loam		Drainage Class: Poorly Field Observations		
Taxonomy (Subgroup)	(Subgroup) Typic Endoaqualfs		Confirm Mapped Type? Yes No		
Profile Description: Depth (inches) Horizon	Matrix Color <u>(Munsell Moist)</u> 10 YR 2/1	Mottle Colors (<u>Munsell Moist)</u>	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc. loam, granular, organic	
<u>5-14" Btg1</u>	10 YR 6/2	10 YR 6/4	few, faint, medium	sandy loam, slightly firm, fine	
<u>14-24+ Btg2</u>	<u>10 YR 5/2</u>	10 YR 5/6	common, coarse, distinct	sandy clay loam, firm	
n an			e de la composición d La composición de la c		
			· · · · · · · · · · · · · · · · · · ·		
Hydric Soil Indicators: Histosol Histic Epipedon Sulfidic Odor X Aquic Moisture R Reducing Condition X Gleyed or Low-Ch	ons		Concretions High Organic Content Organic Streaking in S Listed on Local Hydri Listed on National Hy Other (Explain in Ren	c Soils List dric Soils List	
Remarks: Yonges is a .	Hyric A soil				
WETLAND DETER	RMINATION				
Hydrophytic Vegetation Prese Wetland Hydrology Present? Hydric Soils Present?	ent? Yes Yes Yes	No No No Is this \$	Sampling Point Within a Wetle	and? Yes No	
Remarks:					
				Approved by HQUSACE 3/92	

Project/Site: BISHOP ROAD MITIGATION SITE Applicant/Owner: NCDOT Investigator(s): CINDY CARR, HAROLD BRADY	an a	Date: 11/28/2001 County: HYDE State: NORTH CAROLINA
Do Normal Circumstances exist on the site? Is the site significantly disturbed (Atypical Situation)? Is this area a potential Problem Area? (If needed, explain on reverse)	Yes Yes Yes	No Transect ID: I
VEGETATION	n gina da i	
Dominant Plant Species Stratum	Indicator	Dominant Plant Species Stratum Indicator
1. Pinus taeda shrub	planted	9. Solidago altissima herb FACU+
2. <u>Myrica cerifera</u> shrub	FAC+	10. Andropogon virginicus herb FAC-
3. <u>Baccharis halimifolia</u> shrub	FAC	11. Solidago microcephala herb NA
4. <u>Acer rubrum</u> <u>shrub</u>	FAC	12. Juncus effusus herb FACW+
5. Liquidambar styraciflua shrub	FAC	13
6. <u>Rubus sp.</u> vine	FAC	14
7. <u>Smilax rotundifolia</u> vine	FAC	15.
8. <u>Gelsemium sempervirens</u> vine	FAC	16
Percent of Dominant Species that are OBL, FACW, or FA	AC (excluding FAC	C-)
Remarks:		
HYDROLOGY	· · ·	
Recorded Data (Describe in Remarks) Stream, Lake, or tide Gauge Aerial Photographs Other X No Recorded Data Available		Wetland Hydrology Indicators: Primary Indicators: Inundated Saturated in Upper 12 Inches Water Marks Drift Lines
Field Observations:		Sediment Deposits Drainage Patterns in Wetlands Secondary Indicators (2 or more required):
Depth of Surface Water: <u>N/A</u> (in.)		Oxidized Root Channels in Upper 12 Inches Water-Stained Leaves
Depth to Free Water in Pit: <u>N/A</u> (in.)		X Local Soil Survey Data FAC-Neutral Test
Depth to Saturated Soil: <u>N/A</u> (in.)	an an garage	Other (Explain in Remarks)

Remarks: No obvious hydrologic indicators

Map Unit Name (Series and Phase): Taxonomy (Subgroup)	Yeopim silt loam Aquic Hapludults	Drainage Class: Moderately well Field Observations Confirm Mapped Type? Yes No
Profile Description: Depth (inches) Horizon 0-1" O 1-6" A 6-10" B1 10-24" B2	Matrix Color (Munsell Moist) Mottle Colors (Munsell Moist) 7.5 YR 3/1	Mottle Texture, Concretions, Abundance/Contrast Structure, etc. Organic Organic sandy loam, friable sandy loam, non-sticky common, medium, distinct clay loam, friable
Hydric Soil Indicators: Histosol Histic Epipedon Sulfidic Odor X Aquic Moisture Re X Reducing Conditio X Gleyed or Low-Chu Remarks: Water lens at appr	ns	Concretions High Organic Content in Surface Layer in Sandy Soils Organic Streaking in Sandy Soils Listed on Local Hydric Soils List Listed on National Hydric Soils List Other (Explain in Remarks) soil.

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes	No		
Wetland Hydrology Present? Yes	No		
Hydric Soils Present? Yes	No	Is this Sampling Point Within a Wetland? Yes	No
			· · · · · ·

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Remarks:

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Project/Site: BISHOP ROAD MITIGATION SITE Applicant/Owner: NCDOT Investigator(s): CINDY CARR, HAROLD BRADY		, , , , , , , , , , , , , , , , , , , ,	Date: County: State:	11/28/2001 HYDE NORTH CAROLINA
Do Normal Circumstances exist on the site? Is the site significantly disturbed (Atypical Situation)? Is this area a potential Problem Area? (If needed, explain on reverse)	Yes Yes Yes	No No No	Community Transect ID: Plot ID:	<u> </u>
VEGETATION		nnaan oo galaa dha		
Dominant Plant Species Stratum	Indicator	Domi	nant Plant Species	Stratum Indicator
1. <u>Pinus taeda</u> tree	planted	9: <u>Pteri</u>	dium aquilinum	herb FACU
2. <u>Persea borbonia</u> shrub	FACW	:10. ~ <u>~ ~</u>		a an
3. Quercus rubra tree	FACU	11.	an a	de la superior de la seconda de la second La seconda de la seconda de La seconda de la seconda de
4. Vaccinium arboreum	FACU	12.		
5. <u>Liquidambar styraciflua</u> <u>tree/shrub</u>	FAC	13.		
6. Quercus phellos tree	FACW-	14	4	
7. Nyssa sylvatica shrub	FAC	15.		
8. Smilax rotundifolia vine	FAC	16.		
Percent of Dominant Species that are OBL, FACW, or FA	C (excluding FAC-)).	>50%	
Remarks:				
HYDROLOGY			 	
Recorded Data (Describe in Remarks)Stream, Lake, or tide GaugeAerial PhotographsOtherNo Recorded Data Available Field Observations: Depth of Surface Water: <u>N/A</u> (in.) Depth to Free Water in Pit: N/A (in.)		Primai 	Iydrology Indicators: y Indicators: Inundated Saturated in Upper 1 Water Marks Drift Lines Sediment Deposits Drainage Patterns in ndary Indicators (2 or mod Oxidized Root Chan Water-Stained Leave Local Soil Survey Da	Wetlands ore required): nels in Upper 12 Inches

Remarks: No obvious hydrologic indicators

Map Unit Name (Series and Phase): Taxonomy (Subgroup)	Longshoal mucky peat Typic Haplosaprists	Drainage Class: <u>very poorly</u> Field Observations Confirm Mapped Type? Yes No
Profile Description: Depth (inches) Horizon	Matrix Color Mottle Colors (Munsell Moist) (Munsell Moist)	Mottle Texture, Concretions, Abundance/Contrast Structure, etc.
<u>0-6"</u> <u>A</u> <u>6-24+</u> <u>B</u>	<u>7.5 YR 3/1</u> 10 YR 7/6	sandy loam, many fine roots
Hydric Soil Indicators: Histosol Sulfidic Odor Aquic Moisture Reducing Condi Gleyed or Low-O	tions	Concretions High Organic Content in Surface Layer in Sandy Soils Organic Streaking in Sandy Soils Listed on Local Hydric Soils List Listed on National Hydric Soils List Other (Explain in Remarks)
Remarks: Drainage ditch a	idjacent to marsh possibly affecting hydrology.	

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WETLAND DETERMINATION

28 January 10 August 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 -			
Hydrophytic Vegetation Present? Yes	No		
Wetland Hydrology Present? Yes	No		and the second
Hydric Soils Present? Yes	No	Is this Sampling Point Within a Wetland? Yes	No

Remarks:

Approved by HQUSACE 3/92

Project/Site:BISHOP ROAD MITIGATION SITEApplicant/Owner:NCDOTInvestigator(s):CINDY CARR, HAROLD BRADYDo Normal Circumstances exist on the site?Is the site significantly disturbed (Atypical Situation)?Is this area a potential Problem Area?	Yes Yes Yes	No No No	Date: County: State: Community Transect ID Plot ID:	H NORTH y ID: 30 year old	8/2001 YDE CAROLINA Dine plantation J 2
(If needed, explain on reverse)					2.8.2. £.
VEGETATION	an tan ang ang ang ang ang ang ang ang ang a		an and an		n na stigar An
Dominant Plant Species Stratum	Indicator	Dominan	t Plant Species	<u>Stratum</u>	Indicator
1. <u>Pinus taeda</u> tree	planted	9. <u>Liquidan</u>	nbar styraciflua	tree/shrub	FAC
2. <u>Persea borbonia</u>	FACW	10. Vacciniu	m stamineum	shrub	FACU
3. Acer rubrum shrub	FACW	11.		·	
4. Myrica cerifera	FAC+	12.		. <u></u>	
5. Quercus nigra shrub	FAC	13.	an an an an an Arrange. The	na series de la composición La composición de la c	
6. <u>Nyssa sylvatica</u>	FAC	14.	· · · · ·		
7. Smilax rotundifolia vine	FAC	15.			1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
8. <u>Gelsemium sempervirens</u> vine	FAC	16.		1	· · · · · · · · · · · · · · · · · · ·
Percent of Dominant Species that are OBL, FACW, or FAC	C (excluding FAC	-)	>50%		
Remarks:					
					x

Recorded Data (Describe in Remarks) Wetland Hydrology Indicators: Aerial Photographs Inundated Other	HIDROLOGI		
Aerial Photographs			and a strength
No Recorded Data Available Water Marks No Recorded Data Available Water Marks Ninter Constructions: Net Constructions: Depth of Surface Water: N/A (in.) Depth to Free Water in Pit: N/A (in.) Water Marks Normalized Root Channels in Upper 12 Inches Water-Stained Leaves Normalized Root Channels in Upper 12 Inches Water-Stained Leaves Normalized Root Channels in Upper 12 Inches NA (in.)	Aerial Photographs	Inundated	an di seria di seria Seria di seria di seri
Field Observations:	No Recorded Data Available		
Field Observations:			
Depth of Surface Water: N/A (in.) Secondary Indicators (2 or more required): Oxidized Root Channels in Upper 12 Inches Depth to Free Water in Pit: N/A (in.) Water-Stained Leaves Local Soil Survey Data X FAC-Neutral Test			
Depth of Surface Water: N/A (in.) Oxidized Root Channels in Upper 12 Inches Depth to Free Water in Pit: N/A (in.) Upper 12 Inches Mater-Stained Leaves Local Soil Survey Data X FAC-Neutral Test	Field Observations:		والمراجع والمعر الملاح
Depth to Free Water in Pit: <u>N/A</u> (in.) Water-Stained Leaves Local Soil Survey Data <u>X</u> FAC-Neutral Test			
Depth to Free Water in Pit: <u>N/A</u> (in.) <u>Local Soil Survey Data</u> <u>X</u> FAC-Neutral Test	Depth of Surface Water: <u>N/A</u> (in.)		12 Inches
X FAC-Neutral Test			
	Depth to Free Water in Pit: <u>N/A</u> (in.)		
Depth to Saturated Soil: <u>N/A</u> (in.) Other (Explain in Remarks)	[1] A. M. Martin, "A statistical structure of the structu		
a na ang kana atao atao ang <mark>ana aka</mark> ta na ang kana ang kana atao na ang kana ang kana ang kana atao na ang kana ang	Depth to Saturated Soil: N/A (in.)	Other (Explain in Remarks)	
	and a second	and the second	and a first start of

Remarks: No obvious hydrological indicators

Map Unit Name (Series and Phase): <u>Yeopim loam</u>		Drainage Class: <u>Mode</u> Field Observations	erately well
Taxonomy (Subgroup) Aquic Hapludults		Confirm Mapped Type?	Yes No
Profile Description: Depth Matrix Color (inches) Horizon (Munsell Moist)	Mottle Colors (<u>Munsell Moist)</u>	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
<u>0-4" A 7.5 YR 3/1</u>	n geografie en	an a tha ann an a	silty loam, many fine roots
<u> </u>	<u>10 YR 6/6</u>	faint, fine, few	silt loam, friable
<u>11-24+ B2 10 YR 6/4</u>	<u>2.5 YR 8/2</u>	common, coarse, distinct silty	v clay loam, friable, non-sticky
الم	10 YR 6/8	common, medium, distinct	الله .
الله المراجع ال المراجع المراجع		ан алан алан алан алан алан алан алан а	
Hydric Soil Indicators:			n an
Histosol Histic Epipedon Sulfidic Odor Aquic Moisture Regime Reducing Conditions Gleyed or Low-Chroma Colors		Concretions High Organic Content in S Organic Streaking in Sand Listed on Local Hydric So Listed on National Hydric Other (Explain in Remark	oils List 2 Soils List
Remarks:			
WETLAND DETERMINATION			
Wetland Hydrology Present? Yes	No No		
Hydric Soils Present? Yes	No Is this !	Sampling Point Within a Wetland?	? Yes No
Remarks:			
		, and the second secon	pproved by HQUSACE 3/92

				-
Project/Site: BISHOP ROAD MITIGATION Applicant/Owner: NCDOT Investigator(s): CINDY CARR, HAROLD BRA	and a second		Date: County: State:	11/28/2001 HYDE NORTH CAROLINA
Do Normal Circumstances exist on the site? Is the site significantly disturbed (Atypical Situat Is this area a potential Problem Area? (If needed, explain on reverse)	ion)? Yes Yes Yes	No	Community I Transect ID: Plot ID:	ID: <u>cutover pine</u> J 3
VEGETATION		a a a a a a a a a a	an a	an an Arana an Arana an Arana Arana Arana an Arana an Arana Arana Arana Arana Arana Arana Arana Arana Arana Arana
Dominant Plant Species Strate	<u>ım Indicator</u>	Dominar	nt Plant Species	Stratum Indicator
1. <u>Persea borbonia</u> shrul	FACW	9. Osmund	la regalis	herb OBL
2. <u>Quercus nigra</u> shrul	FAC	10. Andropa	ogon virginicus	herb FAC-
3: Liquidambar styraciflua shrul	FAC	11. Panicun	n verrucosum	herb FACW
4. <u>Acer rubrum</u> shrul	FAC	12. <u>Ilex opa</u>	ca	shrub FAC-
5. <u>Nyssa sylvatica</u>	FAC	13.		
6. <u>Arundinaria gigantea</u> herb	FACW	14	· · ·	
7. <u>Smilax rotundifolia</u> vine	FAC	15		
8. <u>Gelsemium sempervirens</u> vine	FAC	16.		
Percent of Dominant Species that are OBL, FACV Remarks:	W, or FAC (excluding FAC	}-).	>75%	
HYDROLOGY				
Recorded Data (Describe in Remarks) Stream, Lake, or tide Gauge Aerial Photographs Other X No Recorded Data Available			rology Indicators: ndicators: Inundated Saturated in Upper 12 Water Marks Drift Lines Sediment Deposits	
Field Observations: Depth of Surface Water: N/A (i Depth to Free Water in Pit: N/A (i		Seconda	Drainage Patterns in ry Indicators (2 or mo	re required): nels in Upper 12 Inches s
Depth to Saturated Soil: <u>N/A</u> (i:			FAC-Neutral Test Other (Explain in Rer	
Remarks: Evidence of hydrology was obse	erved throughout the soil c	olumn. Mottles pro	esent in B horizon.	

Map Unit Name (Series and Phase):	Chapanoke silt loam		Drainage Class: <u>So</u> Field Observations	mewhat poorly
Taxonomy (Subgroup) _	Aeric Endoaquults		Confirm Mapped Type	Yes No
Profile Description: Depth (inches) Horizon 0-1" O	Matrix Color (<u>Munsell Moist)</u>	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc. Organic
<u> </u>	7.5 YR 3/1			silty loam, many fine roots
5-24+ B	2.5 YR 7/1	2.5 YR 7/8	medium, common, distinct so	andy clay loam, friable, nonsticky
an a	· · · · · · · · · · · · · · · · · · ·			
		· · · · · · · · · · · · · · · · · · ·		
Hydric Soil Indicators:	and a second	an a		
Histosol Histic Epipedor Sulfidic Odor Aquic Moisture X Reducing Cond X Gleyed or Low-	Regime		Concretions High Organic Content i Organic Streaking in Sa Listed on Local Hydric Listed on National Hyd Other (Explain in Rem	Soils List ric Soils List
Remarks:				
WETLAND DETR	RMINATION			
Hydrophytic Vegetation Pr Wetland Hydrology Presen Hydric Soils Present?	t? Yes	No No Is this	Sampling Point Within a Wetlar	nd? Yes No
Remarks;				
	an a		a (a for an ann an	Approved by HQUSACE 3/92
		alis francis dan piping kan San San San San San San San San San San		

Project/Site: BISHOP ROAD M Applicant/Owner: NCDOT Investigator(s): CINDY CARR, HA	راجي المجريفين المقاط			Date: County: State:	<u></u>	11/28/2001 HYDE RTH CAROLINA
Do Normal Circumstances exist on the Is the site significantly disturbed (Atyp Is this area a potential Problem Area? (If needed, explain on reverse)	pical Situation)?	Yes Yes Yes	No No No	Communit Transect II Plot ID:		cutover pine J 4
VEGETATION		N. Contractor			· · ·	
Dominant Plant Species	<u>Stratum</u>	Indicator	n Terrer	Dominant Plant Species	Stratum	Indicator
1. <u>Quercus nigra</u>	shrub	FAC	9.	Erianthus gigantea	herb	FACW
2. <u>Persea borbonia</u>	shrub	FACW	10.	Gelsemium sempervirens	herb	FACW
3. <u>Acer rubrum</u>	shrub	FAC	11.	Osmunda regalis	<u>herb</u>	OBL
4. Liquidambar styraciflua	shrub	FAC	12.	Smilax smallii	herb	FACU
5. Baccharis halimifolia	shrub	FAC	13.		· ·	na se transformation
6. <u>Pinus taeda</u>	shrub	planted	14.	·		second and a second
7. <u>Arundinaria gigantea</u>	herb	FACW	15.			an a
8. Andropogon virginicus	herb	FAC-	16.			
	n an	,				
Remarks:					۰ ۱ ۲۰۰۰ ۲۰۰۰ ۲۰۰۰	
HYDROLOGY Benerated Data (Densela in Densel		·	***	· · · · · · · · · · · · · · · · · · ·		
Recorded Data (Describe in Rem Stream, Lake, or tide Aerial Photographs Other X No Recorded Data Available			Wet	land Hydrology Indicators: Primary Indicators: Inundated Saturated in Upper Water Marks Drift Lines	12 Inches	n an tao ing ang ang ang ang ang ang ang ang ang a
Field Observations:	TTTT BILL IN A		· · · · · · · · · · · · · · · · · · ·	Sediment Deposits Drainage Patterns ir	Wetlands	n an an an Araba an Araba. An an an an Araba
Depth of Surface Water:	N/A(in.)		•	Secondary Indicators (2 or m Oxidized Root Char	ore required): inels in Upper	
Depth to Free Water in Pit:	<u>(in.)</u>		÷	Water-Stained Leav	es	•
Depth to Saturated Soil:	<u>N/A</u> (in.)	n in the second		X FAC-Neutral Test		e Le composition de la composition de la La composition de la c
Remarks: No obvious hydrolog	vical indicators obse	rved; however, two	second	ary indicators exist.	· .	

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Map Unit Name (Series and Phase):	Acredale silt loam			<u>pr1y</u>
Taxonomy (Subgroup)	Typic Endoaqualfs	an a	Field Observations Confirm Mapped Type?	Yes No
Profile Description: Depth (inches) Horizon	Matrix Color (Munsell Moist) 7.5 YR 2.5/1	Mottle Colors (<u>Munsell Moist)</u>	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc. silty clay loam
6-16" Bg1	2.5 YR 4/1	2 G 7/5B	coarse, prominent, common	silty clay loam, friable, fine
<u> </u>	2.5 YR 6/1	7.5 YR 6/8	common, medium, distinct	silty clay loam, fine
<u>10-24</u> <u>Dg2</u>	2.5 IK 0/1	7.5 11 0/6	<u>Common, meanum, aistaici</u>	Siny ciay iban, fine
			ja <u>1997. – Andrea Stationer</u> († 1997.) 1997 – Andrea Stationer, skriver († 1997.)	
			den en e	
Hydric Soil Indicators: Histosol Histic Epipedon Sulfidic Odor X Aquic Moisture X Reducing Cond X Gleyed or Low-	Regime		Concretions High Organic Content in Organic Streaking in Sa X Listed on Local Hydric S Listed on National Hydr Other (Explain in Rema	Soils List ic Soils List
Remarks:				
WETLAND DETR		a genere en genere par a la para a la par		en en ser en tradese groegerende. Se fan de service state
Hydrophytic Vegetation Pr Wetland Hydrology Presen Hydric Soils Present?	t?	No No No Is this :	Sampling Point Within a Wetlan	d? Yes No
Remarks:				an a
na ann an Air				Approved by HQUSACE 3/92

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Project/Site: BISHOP ROAD M. Applicant/Owner: NCDOT Investigator(s): CINDY CARR, HA				Date: County: State:	· · · · · · · · · · · · · · · · · · ·	1/28/2001 HYDE TH CAROLINA
Do Normal Circumstances exist on the Is the site significantly disturbed (Atyp Is this area a potential Problem Area? (If needed, explain on reverse)		Yes Yes Yes	No No No	Community Transect ID Plot ID:		utover pine J 5
VEGETATION				gen der sie der sie sie generatie der sie seine generatie der sie seine seine seine seine seine seine seine se Generaties der seine s	a a para sera s	i i i i i i i i i i i i i i i i i i i
Dominant Plant Species	Stratum	Indicator	Domina	nt Plant Species	Stratum	Indicator
1. Persea borbonia	shrub	FACW	9. Eleocha	ris tuberculosa	herb	FACW+
2. Liquidambar styraciflua	shrub	FAC	10. Smilax.	smallii	vine	FACU
3. Nex glabra	shrub	FACW	11. Ilex opa		shrub	FAC-
4. Pinus taeda	shrub	FAC	12. Smilax	laurifolia	vine	FACW+
5. Acer rubrum	shrub	FAC	13. Osmuna	la regali <u>s</u>	herb	OBL
6. Smilax rotundifolia	vine	FAC	14.			
7. Quercus phellos	tree	FACW-	15.		ter de la contra	
8. Arundinaria gigantea	herb	FACW	.16.	· · · · · · · · · · · · · · · · · · ·	adawaren.	
						· · · · · · · · · · · · · · · · · · ·
Remarks:						
HYDROLOGY						
Recorded Data (Describe in Rem Stream, Lake, or tide Aerial Photographs Other X No Recorded Data Available			Wetland Hyd Primary I	Irology Indicators: Indicators: Inundated Saturated in Upper Water Marks Drift Lines Sediment Deposits	12 Inches	An
Field Observations: Depth of Surface Water:	<u>N/A</u> (in.)		Seconda X	Drainage Patterns in ry Indicators (2 or m Oxidized Root Char	ore required): nnels in Upper	12 Inches
Depth to Free Water in Pit: Depth to Saturated Soil:	<u>N/A</u> (in.) <u>N/A</u> (in.)	a di seconda		Water-Stained Leav Local Soil Survey D FAC-Neutral Test Other (Explain in R	Data	
Remarks:						

Map Unit Name (Series and Phase): Hydeland silt loam Taxonomy (Subgroup) Umbric Endoaqualfs	Drainage Class: <u>Very poorly</u> Field Observations Confirm Mapped Type? Yes No
Profile Description: DepthMatrix ColorMottle Colors (inches)(inches)Horizon(Munsell Moist)	Mottle Texture, Concretions, Abundance/Contrast Structure, etc.
0-5" <u>A</u> 5 YR 2.5/1	silty loam
<u>5-12" B1 2.5 YR 5/2 7.5 YR 5/1</u>	common, coarse, faint sandy clay loam, fine
10 YR 4/2	coarse, few, distinct
<u>12-24+</u> <u>B2</u> <u>5 YR 6/1</u> <u>5 YR 7/8</u>	<u>common, distinct</u> sandy clay loam, fine
n an	
Hydric Soil Indicators: Histosol Histic Epipedon Sulfidic Odor X Aquic Moisture Regime X Reducing Conditions X Gleyed or Low-Chroma Colors	Concretions High Organic Content in Surface Layer in Sandy Soils Organic Streaking in Sandy Soils X Listed on Local Hydric Soils List Listed on National Hydric Soils List Other (Explain in Remarks)
Remarks:	
WETLAND DETERMINATION	
Hydrophytic Vegetation Present?YesNoWetland Hydrology Present?YesNoHydric Soils Present?YesNo	ampling Point Within a Wetland? Yes No
Remarks:	Approved by HQUSACE 3/92

Project/Site: BISHOP ROAD M Applicant/Owner: NCDOT Investigator(s): CINDY CARR, HA				Date: County: State:	11/28/2001 HYDE NORTH CAROLINA
Do Normal Circumstances exist on the Is the site significantly disturbed (Aty Is this area a potential Problem Area? (If needed, explain on reverse)	pical Situation)?	Yes Yes Yes	No No No	Community II Transect ID: Plot ID:	D: <u>cutover pine</u> J <u>6</u>
VEGETATION		n an	a see san ta' ta' ta' ta' A ang ta'		n and an
Dominant Plant Species	<u>Stratum</u>	Indicator	Dominant	Plant Species	Stratum Indicator
1. Pinus taeda	tree	planted	9. Juncus eff	fusus	herb FACW+
2. <u>Persea borbonia</u>	shrub	FACW	10. Aster spp.		herb N/I
3. Myrica cerifera	shrub	FAC+	11	· · · · · · · · · · · · · · · · · · ·	la este et la este de la composición de Composición de la composición de la comp
4. Liquidambar styraciflua	shrub	FAC	12.		· · · · · · · · · · · · · · · · · · ·
5. Acer rubrum	shrub	FAC	13.	e de la constante de la consta La constante de la constante de	n in the second seco
6. Eleocharis tuberculosa	herb	FACW+	14.	· · · ·	
7. Osmunda regalis	herb	OBL	15.		
8. Smilax rotundifolia	vine	FAC	16.		and the second
Design of the second seco) (avaludin a RAC	L	~750/	
Percent of Dominant Species that are (Remarks:	OBL, FACW, or FAC	C (excluding FAC		>75%	
Remarks: HYDROLOGY		C (excluding FAC			
Remarks:	arks)	C (excluding FAC	Wetland Hydro Primary Ind S V T	blogy Indicators: dicators: nundated Saturated in Upper 12 Vater Marks Drift Lines	Inches
Remarks: HYDROLOGY Recorded Data (Describe in Rem Stream, Lake, or tidd Aerial Photographs Other	arks)	C (excluding FAC	Wetland Hydro Primary Ind Secondary X X X X X X X X X X	ology Indicators: dicators: nundated Saturated in Upper 12 Water Marks Drift Lines Sediment Deposits Drainage Patterns in V y Indicators (2 or more	Vetlands e required): els in Upper 12 Inches a

Map Unit Name (Series and Phase): <u>Hydeland silt loam</u>	Drainage Class: <u>Very poorly</u> Field Observations
Taxonomy (Subgroup) Umbric Endoaqualfs	Confirm Mapped Type ² Yes No
Profile Description: DepthMatrix ColorMottle Colors (Munsell Moist)(inches)Horizon(Munsell Moist)	Mottle Texture, Concretions, Abundance/Contrast Structure, etc.
<u>0-2"</u>	Organic silty clay loam
<u>2-14"</u> <u>A</u> <u>7.5 YR 3/1</u> <u>7.5 VD 6/6</u>	
<u>14-24+ Bg 2.5 YR 6/1 7.5 YR 6/6</u>	fine, distinct, common silty clay loam
ander en	
Hydric Soil Indicators:	
Histosol Histic Epipedon Sulfidic Odor X Aquic Moisture Regime X Reducing Conditions X Gleyed or Low-Chroma Colors	Concretions High Organic Content in Surface Layer in Sandy Soils Organic Streaking in Sandy Soils X Listed on Local Hydric Soils List Listed on National Hydric Soils List Other (Explain in Remarks)
Remarks:	
WETLAND DETERMINATION	
Hydrophytic Vegetation Present?YesNoWetland Hydrology Present?YesNoHydric Soils Present?YesNo	Sampling Point Within a Wetland? Yes No
Remarks:	
	Approved by HQUSACE 3/92
ng pananang ng pang pa	na an ann an tha ann ann an tha ann ann ann ann an tha tha ann an tha ann an tha ann an tha ann ann an tha ann Ann an tha ann an tha an

Project/Site: BISHOP ROAD MIT Applicant/Owner: NCDOT Investigator(s): MARTHA BREWSTH	TIGATION SITE ER, TOM BARRETT	n a standard a standard A standard a standard a A standard a		Date: County: State:	an a thuair	/28/2001 HYDE H CAROLINA
Do Normal Circumstances exist on the s Is the site significantly disturbed (Atypic Is this area a potential Problem Area? (If needed, explain on reverse)		Yes Yes Yes	No No No			ear old pine K I
VEGETATION					and the second	
Dominant Plant Species	Stratum	Indicator		Dominant Plant Species	Stratum	Indicator
1. Myrica cerifera	shrub	FAC+	· 9.	Quercus phellos	tree	FACW-
2. Vaccinium corymbosum	shrub	FACW	10.	Ilex opaca	shrub	FAC-
3. Liquidambar styraciflua	tree	FAC	11.	Quercus nigra	tree	FAC
4. Smilax rotundifolia	vine	FAC	12.	Pinus taeda	tree	planted
5. Berchemia scandens	vine	FACW	13.	a <u>an ann an an an an ann an ann an ann a</u>	n enterne i un enter aller i enter -	an tha an
6. Persea borbonia	tree	FACW	· 14.			
7. Gelsemium sempervirens	vine	FAC	15.			
8. Vitis rotundifolia	vine	FAC	16.			la transmissione de la companya de l Na companya de la comp
Percent of Dominant Species that are OI	BL, FACW, or FAC	(excluding FAC-	•),	>75%	6	
Remarks:						
			· .			
HYDROLOGY			<u></u>			
Recorded Data (Describe in Remar Stream, Lake, or tide (Aerial Photographs Other X No Recorded Data Available Field Observations:				tland Hydrology Indicators: Primary Indicators: Inundated Saturated in Uppe Water Marks Drift Lines Sediment Deposit Drainage Patterns	r 12 Inches	
Depth of Surface Water:	<u>N/A (in.)</u>		1	Secondary Indicators (2 or X Oxidized Root Ch Water-Stained Les	more required): annels in Upper 12	2 Inches

 X
 Local Soil Survey Data

 X
 FAC-Neutral Test

 Other (Explain in Remarks)

<u>N/A</u> (in.)

<u>N/A</u> (in.)

Depth to Free Water in Pit:

Depth to Saturated Soil:

Remarks: No obvious hydrologic indicators. Few oxidized roots in Bt horizon.

Map Unit Name				
(Series and Phase):	Chapanoke	silt loam	Drainage Class: Field Observations	Somewhat poorly
Taxonomy (Subgroup)	Aeric Ende	paquults	Confirm Mapped Type	Yes No
Profile Description:				
Depth <u>(inches)</u> <u>Horizon</u>	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-4" A	2.5 ¥ 2.5/1	a ne en 1995 de la Composition de la pre- construir en la composition de la Vige das	an a	silt loam, organic grease, fine roots
<u>4-6" AB</u>	2.5 Y 4/1	<u></u>		fine sandy loam, granular, friable fine sandy loam, friable,
<u>6-12" Bt</u>	2.5 ¥ 6/3	10 YR 6/8	<u>common, medium, distinct</u>	subangular blocky silty clay, firm, organic film
<u>12-24+</u> <u>Btg</u>	<u>10 YR 6/1</u>	<u>10 YR 5/8</u>	common, medium, distinct	on ped faces
				<u>an an a</u>
	· · · · · · · · · · · · · · · · · · ·			·
Hydric Soil Indicators:	San			
Histosol Histic Epipedon Sulfidic Odor X Aquic Moisture Regir	ne		Concretions High Organic Content Organic Streaking in S X Listed on Local Hydric	in Surface Layer in Sandy Soils andy Soils Soils List
Reducing Conditions	an an an taona an taona agus 1930. Taona	an a' ann an Anna an Anna an Anna Anna Anna an Anna Anna	Listed on National Hyc Other (Explain in Rem	Iric Soils List
Remarks: Few oxidized roots in Chapanoke is a Hy			and an	and provide the second seco
Chapanoke is a 11)	une D 5011			
WETLAND DETERM	INATION			
Hydrophytic Vegetation Present?		No		
Wetland Hydrology Present? Hydric Soils Present?		No Is this S	Sampling Point Within a Wetla	nd? Yes No
Remarks:	eta di sel 1911 - Santa Santa Santa Santa 2011 - Santa Sa			
	an a	a de la composición d Parte de la composición de la composició Parte de la composición de la composició		Approved by HQUSACE 3/92

			1 4 4 4 C		
Project/Site:BISHOP ROAD MITIGATION SITEApplicant/Owner:NCDOTInvestigator(s):MARTHA BREWSTER, TOM BARRETTDo Normal Circumstances exist on the site?Is the site significantly disturbed (Atypical Situation)?Is this area a potential Problem Area?(If needed, explain on reverse)	Yes Yes	No No No	Date: County: State: Community Transect ID Plot ID:	1 ID: 30 yet	28/2001 IYDE CAROLINA Ir old pine K 2
VEGETATION	en to mark with twee	an an an an an ann an an an an an an an		an an Anna Anna Anna Anna Anna Anna Anna	
Dominant Plant Species Stratum	Indicator	Dominan	t Plant Species	Stratum	Indicator
1. <u>Myrica cerifera</u> shrub	FAC+	9. <u>Symploc</u>	os tinctoria	shrub	FAC
2. <u>Arundinaria gigantea</u> herb	FACW	10. <u>Quercus</u>	stellata	tree	FACU
3. Liquidambar styraciflua tree	FAC	11. Pinus ta	eda	tree	planted
4. <u>Prunus serotina</u> tree	FACU	12.	· · · · · · · · · · · · · · · · · · ·		
5. <u>Persea borbonia</u> tree	FACW	13.			na standar andra an Anna standar
6. Smilax rotundifolia vine	FAC	14.	·····		
7. Smilax laurifolia vine	FACW+	15.			
8. Vaccinium stamineum shrub	FACU	16			ана и на селото на с Селото на селото на се
Percent of Dominant Species that are OBL, FACW, or FAC	(excluding FAC	-).	>50%		
Remarks:					
HYDROLOGY					
Recorded Data (Describe in Remarks) Stream, Lake, or tide Gauge Aerial Photographs Other X No Recorded Data Available		Primary I	rology Indicators: idicators: Inundated Saturated in Upper Water Marks Drift Lines	12 Inches	
Field Observations: Depth of Surface Water: N/A (in.) Depth to Free Water in Pit: N/A (in.)		Seconda	Sediment Deposits Drainage Patterns ir ry Indicators (2 or m Oxidized Root Char Water-Stained Leav Local Soil Survey D	ore required): nnels in Upper 12 es	Inches

Depth to Free Water in Pit:

Depth to Saturated Soil:

 X
 Local Soil Survey Data

 FAC-Neutral Test

 Other (Explain in Remarks)

Remarks: No obvious hydrologic indicators.

N/A___(in.)

Map Unit Name (Series and Phase): Acredale silt loam		Drainage Class:	Poorly		
Taxonomy (Su	Taxonomy (Subgroup) Typic Endoaquults		Field Observations Confirm Mapped Type	Yes No	
<u>Profile Descrip</u> Depth <u>(inches)</u>	<u>ption:</u> <u>Horizon</u>	Matrix Color <u>(Munsell Moist)</u>	Mottle Colors (<u>Munsell Moist)</u>	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-2"	<u> </u>	<u>10 YR 4/2</u>	an di seconda di second Seconda di seconda di se Seconda di seconda di s		fine sandy loam, granular, friable, many roots fine sandy loam, medium
2-6"	BA	<u>2.5 Y 6/4</u>			subangular blocky, friable silly clay loam, medium
6-20"	Btg1	2.5 Y 6/2	2.5 ¥ 5/6	common, medium, distinct	subangular blocky, fribable, silty loam, friable,
20-24+	Btg2	2.5 Y 7/2	10 YR 5/6	common, medium, distinct	subangular blocky
					tahu di Malan yang tuga sa su dan sa su
	n de l'angle part part angle part part part part part part part part	1997 - 1997 -	· · · · · · · · · · · · · · · · · · ·		
His Sul X Aq Rec	dicators: tic Epipedon fidic Odor uic Moisture Regi ducing Conditions yed or Low-Chro	Bara a si da sa mangana sa si sa Bara si sa si s		Concretions High Organic Content Organic Streaking in S X Listed on Local Hydric Listed on National Hydric Other (Explain in Rem	Soils List Iric Soils List
Remarks:	Acredale is	a Hydric A soil			
WETLAN	D DETERN	/INATION			
and the second	Vegetation Present ology Present? resent?	Yes	No No No	Sampling Point Within a Wetla	nd? Yes No
Remarks:					

Approved by HQUSACE 3/92

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Project/Site: BISHOP ROAD MITIGATION SITE Applicant/Owner: NCDOT Investigator(s): MARTHA BREWSTER, TOM BARRET			Date: County: State:	t says and	1/28/2001 HYDE H CAROLINA
Do Normal Circumstances exist on the site? Is the site significantly disturbed (Atypical Situation)? Is this area a potential Problem Area? (If needed, explain on reverse)	Yes Yes Yes	No No No	Communit Transect II Plot ID:		ear old pine K 3
VEGETATION	The second s	an a sa ang ang ang ang ang ang ang ang ang an		and the second	
Dominant Plant Species Stratum	Indicator	Domina	nt Plant Species	Stratum	Indicator
1. <u>Arundinaria gigantea</u> herb	FACW	9. <u>Pinus ta</u>	zeda	tree	planted
2. Persea borbonia shrub	FACW	10.	an a		
3. Myrica cerifera shrub	FAC+	11.			an a
4. Smilax rotundifolia vine	FAC	12.			е
5. <u>Vaccinium arboreum</u> shrub	FACU	13.	an a		an a
6. Liquidambar styraciflua tree	FAC	14.			
7. Acer rubrum tree	FAC	15.			
8. <u>Ilex opaca</u>	FAC-	16.	· · · ·		
Percent of Dominant Species that are OBL, FACW, or FA Remarks:	.C (excluding FAC)	>75%		
HYDROLOGY		•			· · ·
Recorded Data (Describe in Remarks) Stream, Lake, or tide Gauge Aerial Photographs Other X No Recorded Data Available			Irology Indicators: Indicators: Saturated in Upper Water Marks Drift Lines Sediment Deposits	n de tradeción de la composición de la Composición de la composición de la comp	
Field Observations:	an a	Seconda	Drainage Patterns i ary Indicators (2 or n	n Wetlands	ta in an initia. Ta ta ta ta ta ta ta
Depth of Surface Water: <u>N/A</u> (in.)			Oxidized Root Cha Water-Stained Leav	nnels in Upper 1	2 Inches
Depth to Free Water in Pit: <u>N/A</u> (in.)			Local Soil Survey I FAC-Neutral Test		
Depth to Saturated Soil: <u>N/A</u> (in.)	and a second s		Other (Explain in F	Remarks)	an a
Remarks: No obvious hydrologic indicators; however, tw	vo secondary indica	ntors exist.			

Map Unit Name (Series and Phase): <u>Acredale silt loam</u>			Drainage Class: Field Observations	poorly
Taxonomy (Subgroup)	Typic Endo	paqualfs	Confirm Mapped Type	Yes No
Profile Description: Depth (inches) Horizon	Matrix Color (<u>Munsell Moist)</u>	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc. Ioam, granular, fine roots,
<u>0-2"</u> <u>A</u>	2.5 Y 2.5/1	n en	en e	organic
<u>2-15" Btg1</u> 15-24" Btg2	2.5 Y 6/2 10 YR 6/2	7.5 YR 5/8	few, fine, distinct	silt loam, granular, friable silty clay loam, friable, subangular blocky
		2.5 Y 6/6	common, coarse, faint	
<u>24-26+</u> <u>Btg3</u>	2.5 Y 6/1	10 YR 6/8	common, coarse, distinct	silty clay loam, slightly firm, subangular blocky
		· · · · · · · · · · · · · · · · · · ·	and a second second Second second second Second second	
Hydric Soil Indicators:		na se		
Histosol Histic Epipedon Sulfidic Odor X Aquic Moisture Regin Reducing Conditions X Gleyed or Low-Chron Remarks: Acredale is a	ين جي ڪار ڪار ڪاري ۽ ان کاري ڪاري ۽ ان کاري ڪاري ڪاري ڪاري ڪ ان ڪاري ڪاري ڪاري ڪاري ڪاري ڪاري ڪاري ڪاري		Concretions High Organic Content i Organic Streaking in Sa X Listed on Local Hydric Listed on National Hyd Other (Explain in Rem	Soils List ric Soils List
WETLAND DETERM	UNATION			
Hydrophytic Vegetation Present? Wetland Hydrology Present? Hydric Soils Present?	Yes	No No No Is this S	Sampling Point Within a Wetlar	nd? Yes No
Remarks:				
				Approved by HQUSACE 3/92

Project/Site: BISHOP ROAD MITIGATION SITE Applicant/Owner: NCDOT Investigator(s): MARTHA BREWSTER, TOM BARRETT		Date: <u>11/28/2001</u> County: <u>HYDE</u> State: <u>NORTH CAROLINA</u>
Do Normal Circumstances exist on the site? Is the site significantly disturbed (Atypical Situation)? Is this area a potential Problem Area? (If needed, explain on reverse)	Yes Yes Yes	No Community ID: 30 year old pine No Transect ID: K No Plot ID: 4
VEGETATION	an a	lananan ing panganan panganan na sa
Dominant Plant Species Stratum	Indicator	Dominant Plant Species Stratum Indicator
1. <u>Acer rubrum</u> tree	FAC	9. <u>Ilex opaca shrub FAC-</u>
2. Liquidambar styraciflua tree	FAC	10. <u>O</u> uercus nigra tree FAC
3. <u>Persea borbonia</u> tree	FACW	11. <u>Pinus taeda</u> tree planted
4. <u>Smilax rotundifolia</u> vine	FAC	12. A second
5. <u>Arundinaria gigantea</u> herb	FACW	13.
6. <u>Pteridium aquilinum herb</u>	FACU	14
7. <u>Myrica cerifera</u> shrub	FAC+	15
8. <u>Gelsemium sempervirens</u> vine	FAC	16
Remarks:		
HYDROLOGY		
Recorded Data (Describe in Remarks) Stream, Lake, or tide Gauge Aerial Photographs Other X No Recorded Data Available		Wetland Hydrology Indicators: Primary Indicators: Inundated Saturated in Upper 12 Inches Water Marks Drift Lines
Field Observations:		Sediment Deposits Drainage Patterns in Wetlands Secondary Indicators (2 or more required):
Depth of Surface Water: <u>N/A</u> (in.)		X Oxidized Root Channels in Upper 12 Inches Water-Stained Leaves
Depth to Free Water in Pit: N/A (in.) Depth to Saturated Soil: N/A (in.)		X Local Soil Survey Data X FAC-Neutral Test Other (Explain in Remarks)
	an a	
Remarks: No obvious surface hydrologic indicators. Few o	oxidized root cha	nnels in Btg horizon.

Map Unit Name (Series and Phase): <u>Hydeland silt loam</u>			Drainage Class: Very poorly Field Observations		
Taxonomy (Subgroup)	Umbric Endoaqu	ualfs	Confirm Mapped Type? Yes No		
Profile Description: Depth (inches) Horizon	Matrix Color (Munsell Moist) 2.5 Y 3/1	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc. silt loam, many roots, friable, granular	
<u> </u>		10 YR 5/8	common, medium, distinct	sandy clay loam, friable, subangular blocky	
<u>20-28+</u> <u>Btg2</u>	<u>10 YR 4/1</u>	10 YR 5/6	few, fine-med., faint	sandy loam, subangular blocky, friable	
		10 YR 7/2	few, medium, distinct	· · · · · · · · · · · · · · · · · · ·	
		alla and an anna an anna an anna an anna an anna an an	n an		
			· · · · · · · · · · · · · · · · · · ·		
Hydric Soil Indicators:		landar a shekara a s Shekara a shekara a s			
Histosol Histic Epipedon Sulfidic Odor X Aquic Moisture Regime Reducing Conditions X Gleyed or Low-Chroma	en e		X Concretions High Organic Content in Organic Streaking in Sa X Listed on Local Hydric S Listed on National Hydr Other (Explain in Rema	Soils List ric Soils List	
Remarks: Few oxidized root chan Hyde	nels in Btg horizon. Small land is a Hydric A soil	iron concretions.			
WETLAND DETERMI	NATION				
Hydrophytic Vegetation Present? Wetland Hydrology Present? Hydric Soils Present?	Yes No Yes No Yes No	Is this	Sampling Point Within a Wetlan	d? Yes No	
Remarks:					
		egnilet og stanse som en fort og størende og til Stanse som en som en Stanse som en	teritoria de la construcción de la Construcción de la construcción de l	Approved by HQUSACE 3/92	
en et son fan de Staar val de sen te de sen de de staar de Staar van Staar	ing star adamatic separation and a de	Manatalan ya sana ya sangina katalan sanginga Manatalan ya sangina katalan sanginga	e Henneder fan de skriege wat de beskere skriege af staat fan gester Skriege	en propose produce en archivel de la constante de la constante de la constante de la constante de la constante Internationale de la constante d	

Project/Site: BISHOP ROAD M Applicant/Owner: NCDOT Investigator(s): CINDY CARR, HA Do Normal Circumstances exist on the Is the site significantly disturbed (Aty Is this area a potential Problem Area? (If needed, explain on reverse)	ROLD BRADY e site? pical Situation)?	Yes Yes	No No No	Date: County: State: Community Transect ID Plot ID:	NORT	/28/2001 HYDE H CAROLINA d pine plantation L 1
VEGETATION	n et en	ta an	and the second			n an
Dominant Plant Species	Stratum	Indicator	Dominal	nt Plant Species	<u>Stratum</u>	Indicator
1. Persea borbonia	shrub	FACW	9. <u>Ilex opa</u>	ica	shrub	FAC-
2. Liquidambar styraciflua	shrub	FACW	10. <u>Smilax i</u>	rotundifolia	vine	FAC
3. Quercus nigra	shrub	FACW		et de la composition de la composition Composition de la composition de la comp	2011 - 1 	· · · · · · · · · · · · · · · · · · ·
4. Pinus taeda	tree	planted	· 12. ··		· · ·	
5. <u>Chasmanthium laxum</u>	herb	FACW-	13.	Na an an Alaistan an Alaistan.	an ant o gray construit. 	n oo oo ah ah ah ah ah ah
6. Gelsemium sempervirens	vine	FAC	14	· · ·	· · · · · ·	
7. Quercus rubra	shrub	FACU	15.			Maria di Santa Maria di Kanangan di Kanang Kanangan di Kanangan di Kana
8. Nyssa sylvatica	shrub	FAC	16			
Percent of Dominant Species that are (OBL, FACW, or FAC	(excluding FAC).	>75%		
Remarks:		an an an an Arthur An Anna an Anna Anna An Anna			an a	n de ser pelo 1917 - English 1917 - English
		•				
HYDROLOGY	· ·					
Recorded Data (Describe in Rem	arks)	a sa ta ang	Wetland Hyd	lrology Indicators:	n terre de la composition. La terre de la composition de la composi	
Stream, Lake, or tide Aerial Photographs	e Gauge		Primary I	indicators: Inundated		
Other				Saturated in Upper	12 Inches	
x No Recorded Data Available			، در ۲۵ سوره در در ۲۰۰۰ مرجع در در در در ۲۰۰۰ مرجع در	Water Marks Drift Lines	and States a States and States and St	
Field Observations:		an a	ар на калалана. 1	Sediment Deposits Drainage Patterns in	n Wetlands	
Depth of Surface Water:	<u>N/A (in.)</u>		Seconda	ry Indicators (2 or m Oxidized Root Cha	ore required):	2 Inches
				Water-Stained Leav	/es	
Depth to Free Water in Pit:	<u>N/A</u> (in.)		<u>X</u>	Local Soil Survey I FAC-Neutral Test		
Depth to Saturated Soil:	<u>N/A</u> (in.)		·	Other (Explain in R	emarks)	

Remarks: oxidized root channels begin at 12".

Map Unit Name (Series and Phase):	Acredale silt loam		Drainage Class: <u>Poo</u> Field Observations	
Taxonomy (Subgroup)	Typic Endoaqualfs		Confirm Mapped Type?	Yes No
Profile Description: Depth (inches) Horizon	Matrix Color <u>(Munsell Moist)</u>	Mottle Colors (<u>Munsell Moist)</u>	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
<u>0-5"</u> <u>A</u>	7.5 YR 3/1	an an Allan ann an an an Allan Allan an A		silty loam, many fine roots
5-12" <u>B</u>	7.5 YR 7/4	10 YR 6/6	common, faint, fine	sticky, subangular blocky
	2.5 Y 6/8	5 YR 7/1	prominent, coarse, common	silly člay loam, non-sticky, oxidized root channels
a <mark>a an an</mark>				
			a <mark>la constanta da const</mark>	
Hydric Soil Indicators:				
Histosol Histic Epipedon Sulfidic Odor Aquic Moisture I Reducing Condit Gleyed or Low-C	tions		Concretions High Organic Content in Organic Streaking in Sa Listed on Local Hydric 1 Listed on National Hydr Other (Explain in Rema	Soils List ic Soils List
Remarks: The matri	x color of the B horizon does r	not meet the jurisdictional req	uirement normally assoicated w	ith the mapped soil unit.
WETLAND DETE	RMINATION	en e		an a
Hydrophytic Vegetation Pre Wetland Hydrology Present Hydric Soils Present?	sent? Yes 1 ? Yes 1	No No No Is this 5	Sampling Point Within a Wetlan	d? Yes No

Remarks:

Approved by HQUSACE 3/92

Project/Site: BISHOP ROAD MITIGATION SITE Applicant/Owner: NCDOT Investigator(s): MARTHA BREWSTER, TOM BARRETT Do Normal Circumstances exist on the site? Is the site significantly disturbed (Atypical Situation)? Is this area a potential Problem Area? (If needed, explain on reverse)	Date: 11/28/2001 County: HYDE State: NORTH CAROLINA Yes No Yes No
VEGETATION Dominant Plant Species Stratum In	ndicator Dominant Plant Species Stratum Indicator
	FACW 9. Quercus falcata tree FACU-
	FAC 10. Smilax smallii vine FACU
3. Liquidambar styraciflua tree H	FAC 11. Quercus phellos tree FACW-
	FAC+ 12. Pinus taeda tree planted
5. <u>Smilax rotundifolia</u> vine I	<i>FAC</i> 13.
6. Vaccinium stamineum shrub F	FACU 14.
7. Osmunda cinnamomea herb FA	ACW+ 15.
8. <u>Chasmanthium laxum herb FA</u>	<i>CACW-</i> 16.
Percent of Dominant Species that are OBL, FACW, or FAC (exc Remarks:	cluding FAC-). >50%
HYDROLOGY	
Recorded Data (Describe in Remarks) Stream, Lake, or tide Gauge Aerial Photographs Other X No Recorded Data Available	Wetland Hydrology Indicators: Primary Indicators: Inundated Saturated in Upper 12 Inches Water Marks Drift Lines Sediment Deposits
Field Observations:	Drainage Patterns in Wetlands Secondary Indicators (2 or more required):
Depth of Surface Water: <u>N/A</u> (in.)	Oxidized Root Channels in Upper 12 Inches Water-Stained Leaves
Depth to Free Water in Pit: <u>N/A</u> (in.)	X Local Soil Survey Data X FAC-Neutral Test
Depth to Saturated Soil: <u>N/A</u> (in.)	Other (Explain in Remarks)
Remarks: No obvious surface hydrologic indicators; however, t	two secondary indicators exist.

Map Unit Name (Series and Phase): Taxonomy (Subgroup)	e): <u>Hydeland silt loam</u>		Drainage Class: Field Observations Confirm Mapped Type:	Very poorly Yes No
	Matrix Color <u>Munsell Moist)</u>	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc. loam, granular, friable,
<u> </u>	10 YR 3/1 2.5 Y 6/1	2.5 ¥ 6/4	coarse, faint	many fine roots fine sandy loam, subangular blocky, firm
<u>16-24+</u> <u>Btg2</u>	2.5 Y 6/1	2.5 Y 6/8	common, medium, distinct	silty clay loam
Hydric Soil Indicators: Histosol Histic Epipedon Sulfidic Odor X Aquic Moisture Regime Reducing Conditions X Gleyed or Low-Chroma Col	ors		Concretions High Organic Content in Organic Streaking in San X Listed on Local Hydric St Listed on National Hydric Other (Explain in Remar	oils List 2 Soils List
Remarks: Hydeland is a	i Hydric A soil			
WETLAND DETERMINA	TION			
Hydrophytic Vegetation Present? Wetland Hydrology Present? Hydric Soils Present?	Yes No Yes No Yes No	Is this Se	mpling Point Within a Wetland	? Yes No
Remarks:				
n Na katalan sa katalan katalan Na katalan kata			a_{i} , a_{i	pproved by HQUSACE 3/92
				de la sector de la s La sector de la secto La sector de la sec

Project/Site: BISHOP ROAD MITIGATION SITE Applicant/Owner: NCDOT Investigator(s): MARTHA BREWSTER, TOM BARRETT	n an		Date: County: State:	11/28/2001 HYDE NORTH CAROLINA
Do Normal Circumstances exist on the site? Is the site significantly disturbed (Atypical Situation)? Is this area a potential Problem Area? (If needed, explain on reverse)	Yes Yes Yes	No No No	Community ID: Transect ID: Plot ID:	30 year old pine L 3
VEGETATION	a la se an air a Airtí	a an	an an tha an Tha an tha an	e de la de la calendar de la calenda La calendar de la cale
Dominant Plant Species Stratum	Indicator	Dominant Plan	nt Species Str	atum Indicator
1. <u>Acer rubrum</u> tree	FAC	9. <u>Pinus taeda</u>		ree planted
2. Osmunda regalis herb	OBL	10.	<u> </u>	s
3. <u>Persea borbonia</u> shrub	FACW	11 <u></u>		eren eren eren eren eren eren eren eren
4. Smilax rotundifolia vine	FAC	12.	· · · · · · · · · · · · · · · · · · ·	
5. Quercus nigra tree	FAC	13.	n in the souther in the second second	an a
6. Chasmanthium laxum tree	FACW-	14.		
7. Myrica cerifera shrub	FAC+	15.		
8. <u>Campsis radicans</u> vine	FAC	16.		
Percent of Dominant Species that are OBL, FACW, or FAC	(excluding FAC-)	>75%	
Remarks:				
HYDROLOGY				•
Recorded Data (Describe in Remarks)Stream, Lake, or tide GaugeAerial PhotographsOtherNo Recorded Data Available		Wate Drift	tors:	thes
Field Observations: Depth of Surface Water: <u>N/A</u> (in.)		Secondary Ind	hage Patterns in Wet licators (2 or more re- ized Root Channels	equired):
Depth to Free Water in Pit: <u>N/A</u> (in.)		X Local	r-Stained Leaves I Soil Survey Data	
Depth to Saturated Soil: <u>N/A</u> (in.)			-Neutral Test r (Explain in Remarl	(3)
	· ·	· · · · · · ·		

Remarks: No obvious surface hydrologic indicators. Oxidation of root channels in Btg1 horizon.

Map Unit Name (Series and Phase): Hydeland silt loam Taxonomy (Subgroup) Umbric Endoaqualfs	Drainage Class: <u>Very poorly</u> Field Observations Confirm Mapped Type? Yes No			
Profile Description: Matrix Color Mottle Colors Depth Matrix Color Mottle Colors (inches) Horizon (Munsell Moist) (Munsell Moist)	Mottle Texture, Concretions, Abundance/Contrast Structure, etc. <i>toam, granular, friable,</i>			
<u> </u>	few-common, fine- fine sandy clay loam, slightly			
<u>6-10" Btg1 10 YR 5/2 10 YR 5/6</u>				
<u>10-24+ Btg2 10 YR 5/1 10 YR 6/6</u>	common, medium, faint plastic, coarse, firm,			
Hydric Soil Indicators: Histosol Histic Epipedon Sulfidic Odor X Aquic Moisture Regime Reducing Conditions X Gleyed or Low-Chroma Colors	X Concretions High Organic Content in Surface Layer in Sandy Soils Organic Streaking in Sandy Soils X Listed on Local Hydric Soils List Listed on National Hydric Soils List Other (Explain in Remarks)			
Remarks: small iron concretions present in Btg1 horizon. common, fine, distinct (2.5YR 4/8) Hydeland is a Hydric A soil				
WETLAND DETERMINATION				
Hydrophytic Vegetation Present?YesNoWetland Hydrology Present?YesNoHydric Soils Present?YesNo	ampling Point Within a Wetland? Yes No			
Remarks:				
	Approved by HQUSACE 3/92			

		and the Marian		
Project/Site: BISHOP ROAD MITIGATION SITE Applicant/Owner: NCDOT Investigator(s): MARTHA BREWSTER, TOM BARRETT			Date: County: State:	11/28/2001 HYDE NORTH CAROLINA
Do Normal Circumstances exist on the site? Is the site significantly disturbed (Atypical Situation)? Is this area a potential Problem Area? (If needed, explain on reverse)	Yes Yes Yes	No No No	Community ID: Transect ID: Plot ID:	30 year old pine L 4
VEGETATION		and the second s	a kana terta ang barang sa	an a
	Indicator	Dominan	nt Plant Species S	tratum Indicator
1. <u>Persea borbonia</u> shrub	FACW	9. <u>Arundin</u>	aria gigantea	herb FACW
2. <u>Acer rubrum</u> tree	FAC	10. Chasma	nthium laxum	herb FACW-
3. Vaccinium stamineum shrub	FACU	11. Pinus ta	eda	tree planted
4. Smilax rotundifolia vine	FAC	12.	· · · · · · · · · · · · · · · · · · ·	andra an Andra andra and
5. Quercus nigra tree	FAC	. 13.		and an
6. Quercus phellos tree t	FACW-	14.	·	
7. Campsis radicans vinė	FAC	15.		
8. <u>Osmunda cinnamomea herb H</u>	FACW+	16.		
Percent of Dominant Species that are OBL, FACW, or FAC (ex Remarks:	coluding FAC-). (), (), (), (), (), (), (), (), (), (),	>75%	
HYDROLOGY Recorded Data (Describe in Remarks)		Wotland Hudi		
Recorded Data (Describe in Remarks) Stream, Lake, or tide Gauge Aerial Photographs Other X No Recorded Data Available		Primary In	rology Indicators: ndicators: Inundated Saturated in Upper 12 Ir Water Marks Drift Lines	iches
Field Observations: Depth of Surface Water: <u>N/A</u> (in.)		Secondar	Sediment Deposits Drainage Patterns in We ry Indicators (2 or more 1 Oxidized Root Channels	required):
Depth to Free Water in Pit: <u>N/A</u> (in.)			Water-Stained Leaves Local Soil Survey Data	ill opper 12 menes
Depth to Saturated Soil: <u>N/A</u> (in.)		X	FAC-Neutral Test Other (Explain in Rema	rks)
Remarks: No obvious surface hydrologic indicators; however,	two secondary	y indicators exist.		

Map Unit Name (Series and Phase): <u>Hydeland silt loam</u>	Drainage Class: <u>Very poorly</u> Field Observations			
Taxonomy (Subgroup) Umbric Endoaqualfs	Confirm Mapped Type? Yes No			
Profile Description: DepthMatrix ColorMottle Colors (Munsell Moist)(inches)Horizon(Munsell Moist)	Mottle Texture, Concretions, Abundance/Contrast Structure, etc. Ioam, granular, friable,			
<u>0-6" A 10 YR 3/1</u>	many roots <u>Jine sandy clay loam, slightly</u>			
<u>6-14" Btg1 10 YR 6/1 10 YR 5/8</u>	common, medium, distinct firm, medium			
<u>14-24+ Btg2 10 YR 6/1 10 YR 6/6</u>	common, medium, faint fine sandy clay loam			
n <u>en en e</u>	a de la companya de Esta de la companya d			
Hydric Soil Indicators:				
Histosol Histic Epipedon Sulfidic Odor X Aquic Moisture Regime Reducing Conditions X Gleyed or Low-Chroma Colors	Concretions High Organic Content in Surface Layer in Sandy Soils Organic Streaking in Sandy Soils Listed on Local Hydric Soils List Listed on National Hydric Soils List Other (Explain in Remarks)			
Remarks: <i>Hydeland is a Hydric A soil</i>				
WETLAND DETERMINATION				
Hydrophytic Vegetation Present?YesNoWetland Hydrology Present?YesNoHydric Soils Present?YesNo	ampling Point Within a Wetland? Yes No			
Remarks:				
	Approved by HQUSACE 3/92			
	an a			
	에 약 24 - 2015년 18월 24일 18일 - 2017년 18일 - 2017년 18일			

CRASSER P. C.

Appl Inves Do N Is the Is thi	ect/Site: BISHOP ROAD MIT icant/Owner: NCDOT stigator(s): MARTHA BREWSTE formal Circumstances exist on the s e site significantly disturbed (Atypia s area a potential Problem Area? needed, explain on reverse)	R, TOM BARRET.	Yes Yes Yes	No No No		Date: County: State: Communit Transect II Plot ID:	<u>NORT</u> y ID: <u>30 y</u>	1/28/2001 HYDE H CAROLINA ear old pine M I
VE	GETATION		and and the second s		and and a second	an in an ann in		
<u> </u>	Dominant Plant Species	Stratum	Indicator		Dominant	Plant Species	Stratum	Indicator
· 1.	Persea borbonia	shrub	FACW	9.	Vacciniun	n corymbosum	shrub	FACW
2.	Arundinaria gigantea	herb	FACW	10.	Smilax sm	allii	vine	FACU
3.	Prunus serotina	tree	FACU	11	Pinus taec	da	tree	planted
4.	Acer rubrum	tree	FAC	12.		e An an		e i constante Alternatione e constante e constante e constante e constante e constante e constante e constante Alternatione e constante e
5.	Smilax rotundifolia	vine	FAC	13.		alay in a sa sa a a		an a
6.	Smilax bona-nox	vine	FAC	14.		·	· · ·	
7.	Liquidambar styraciflua	tree	FAC	15.				
8.	Ilex opaca	tree	FAC-	16.	 		an a	
Perce	ent of Dominant Species that are OI	3L, FACW, or FA	C (excluding FAC)		>50%		
Rema	ırks:							

HYDROLOGY

IIIDKOLOOI	
Recorded Data (Describe in Remarks)	Wetland Hydrology Indicators:
Stream, Lake, or tide Gauge	Primary Indicators:
Aerial Photographs	Inundated
Other	Saturated in Upper 12 Inches
X No Recorded Data Available	Water Marks
[1] A start of the start of	for the set of Drift Lines of the set of the
	Sediment Deposits
Field Observations:	Drainage Patterns in Wetlands
	Secondary Indicators (2 or more required):
Depth of Surface Water: <u>N/A</u> (in.)	X Oxidized Root Channels in Upper 12 Inches
	Water-Stained Leaves
Depth to Free Water in Pit: N/A (in.)	X Local Soil Survey Data
	X FAC-Neutral Test
Depth to Saturated Soil: N/A (in.)	Other (Explain in Remarks)
an an tao ang kanang kanang tao ang kanang tao kanang tao kanang tao kanang kanang tao kanang tao kanang tao ka Tao kanang tao kanang ta	and the second secon

Remarks: No obvious surface hydrologic indicators; however, more than two secondary indicators exist.

Map Unit Name (Series and Phase): Acredale Taxonomy (Subgroup) Typic End		Drainage Class: Field Observations Confirm Mapped Type	Poorly Yes No
Profile Description: Depth Matrix Color (inches) Horizon (Munsell Moist)	Mottle Colors (<u>Munsell Moist)</u>	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
<u>0-1"</u> <u>A</u> <u>10 YR 3/2</u>	· · · · · · · · · · · · · · · · · · ·	e gente se la trase se construir de la construi La construir de la construir de	fine sandy clay loam, friable silty clay loam, subangular
<u> </u>	<u>10 YR 6/8</u>	common, coarse, distinct	blocky, medium sandy clay, subangular
<u>12-24+</u> <u>Brg2</u> <u>10 YR 5/1</u>	10 YR 6/8	common, coarse, distinct	blocky, firm
		12 <u></u> 2. Alexandro de la composición de la compo	
		ار المراجع الم المراجع المراجع	
		· · · · · · · · · · · · · · · · · · ·	
Hydric Soil Indicators:			
Histosol Histic Epipedon Sulfidic Odor X Aquic Moisture Regime Reducing Conditions X Gleyed or Low-Chroma Colors Remarks: Oxidized root channels in Btg1 horizon. Acredale is a Hydric A soil		Concretions High Organic Content Organic Streaking in S X Listed on Local Hydric Listed on National Hydro Other (Explain in Rem	Soils List Iric Soils List
Acreatie is a Hyaric A sou			
WETLAND DETERMINATION	a pala series and a series of the series The series of the series of t		
Hydrophytic Vegetation Present?YesWetland Hydrology Present?YesHydric Soils Present?Yes	No No No Is this S	ampling Point Within a Wetlar	nd? Yes No
Remarks:			
		na an a	Approved by HQUSACE 3/92

Project/Site: BISHOP ROAD MITIGATION SITE Applicant/Owner: NCDOT Investigator(s): MARTHA BREWSTER, TOM BARRETT		Date: <u>11/28/2001</u> County: <u>HYDE</u> State: <u>NORTH CAROLINA</u>
Do Normal Circumstances exist on the site? Is the site significantly disturbed (Atypical Situation)? Is this area a potential Problem Area? (If needed, explain on reverse)	Yes Yes Yes	
VEGETATION		
Dominant Plant Species Stratum	Indicator	Dominant Plant Species Stratum Indicator
1. Arundinaria gigantea herb	FACW	9. <u>Pinus taeda</u> tree planted
2: <u>Persea borbonia</u> shrub	FACW	10. all the second s
3. <u>Myrica cerifera</u> shrub	FAC+	11. The second s Second second sec
4. Liquidambar styraciflua tree	FAC	12.**
5. Smilax bona-nox vine	FAC	13.
6. <u>Gelsemium sempervirens</u> vine	FAC	14
7. <u>Acer rubrum</u> tree	FAC	15.
8. Chasmanthium laxum herb	FACW-	16. 1
Percent of Dominant Species that are OBL, FACW, or FAC	C (excluding FAC-	-)
Remarks:		
HYDROLOGY	·	
Recorded Data (Describe in Remarks) Stream, Lake, or tide Gauge Aerial Photographs Other X No Recorded Data Available		Wetland Hydrology Indicators: Primary Indicators: Inundated Saturated in Upper 12 Inches Water Marks Drift Lines
Field Observations: Depth of Surface Water: N/A (in.)		Sediment Deposits Drainage Patterns in Wetlands Secondary Indicators (2 or more required): X Oxidized Root Channels in Upper 12 Inches
Depth to Free Water in Pit: <u>N/A</u> (in.)		X Water-Stained Leaves X Local Soil Survey Data X FAC-Neutral Test
Depth to Saturated Soil: <u>N/A</u> (in.)		Other (Explain in Remarks)

Depth to Saturated Soil:

Remarks: Oxidized root channels in Btg1 & Btg2 horizons.

Map Unit Name (Series and Phase): Acredale silt loam Taxonomy (Subgroup) Typic Endoaqualfs			Drainage Class: <u>Poorly</u> Field Observations Confirm Mapped Type: Yes No		
Profile Description: Depth (inches) Horizon 0-4" 0i 4-5" A 5-12" Btg1 12-24"	Matrix Color (<u>Munsell Moist</u>) 2.5 Y 4/1 10 YR 5/1 2.5 Y 5/1	Mottle Colors (Munsell Moist) 10 YR 5/8 7.5 YR 5/8	Mottle Abundance/Contrast <u>common, medium, distinct</u> <u>common, coarse, distinct</u>	Texture, Concretions, Structure, etc. organic material silty clay loam, fine, subangular blocky, friable fine sandy clay loam, medium, subangular blocky sandy clay loam, medium, subangular blocky	
Hydric Soil Indicators: Histosol Histic Epipedon Sulfidic Odor X Aquic Moisture Regim Reducing Conditions X Gleyed or Low-Chroma	الميان الرواد مياه مي الكوني. ا		Concretions High Organic Content in Organic Streaking in Sar X Listed on Local Hydric S Listed on National Hydri Other (Explain in Rema	oils List c Soils List	
Remarks: Oxidized root channels Acredate WETLAND DETERM	is a Hydric A soil	zons.			

1. 1.	Hydrophytic Vegetation Present?	Yes No		
·	Wetland Hydrology Present?	Yes No	n en	
•	Hydric Soils Present?	Yes No	Is this Sampling Point Within a Wetland? Yes No)

Remarks:

Approved by HQUSACE 3/92

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Project/Site: BISHOP ROAD MITIGATION SITE Applicant/Owner: NCDOT Investigator(s): MARTHA BREWSTER, TOM BARRETT	an an tao amin' amin Amin' amin' amin Amin' amin' amin		Date: County: State:	11/28/2001 HYDE NORTH CAROLINA
Do Normal Circumstances exist on the site? Is the site significantly disturbed (Atypical Situation)? Is this area a potential Problem Area? (If needed, explain on reverse)	Yes Yes Yes	No No No	Community ID: Transect ID: Plot ID:	15 year old pine M 3
VEGETATION	a tana ang sana a	an tan gang san ang atan sa	and the second	an a
Dominant Plant Species Stratum	Indicator	Dominan	t Plant Species Str	atum <u>Indicator</u>
1. Myrica cerifera shrub	FAC+	9.		
2. Gelsemium sempervirens vine	FAC	10.	te de la composición de la composición A composición de la c	a sa
3. Liquidambar styraciflua tree	FAC	- 11.		an a
4. <u>Persea borbonia</u>	FACW	12.		in a star star star star star star star st
5. <u>Vaccinium corymbosum</u>	FACW	13.	ta in anti in a substance	an an an the St. The new the star star star starts
6. Smilax rotundifolia vine	FAC	14.		
7. <u>P</u> inus taeda tree	planted	. 15		
8.		16.		
Percent of Dominant Species that are OBL, FACW, or FAC Remarks: dense young pine shading out most species. Cove		nages (Carlor Co	100%	
HYDROLOGY				
Recorded Data (Describe in Remarks) Stream, Lake, or tide Gauge Aerial Photographs Other X No Recorded Data Available Field Observations: Depth of Surface Water: N/A_(in.) Depth to Free Water in Pit: N/A_(in.) Depth to Saturated Soil: N/A_(in.)		Primary Ir Secondan X X X	ology Indicators: ndicators: Inundated Saturated in Upper 12 Ind Water Marks Drift Lines Sediment Deposits Drainage Patterns in Wet ry Indicators (2 or more res Oxidized Root Channels Water-Stained Leaves Local Soil Survey Data FAC-Neutral Test Other (Explain in Remark	lands squired): in Upper 12 Inches
Remarks:				

Map Unit Name (Series and Phase):	Hydeland :	Drainage Class: Very poorly Field Observations			
Taxonomy (Subgroup)	Umbric Enc	doaqualfs	Confirm Mapped Type	e? Yes No	
Profile Description: Depth (inches) Horizon	Matrix Color (Munsell Moist)	Mottle Colors (<u>Munsell Moist)</u>	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc. <i>fine sandy loam, friable,</i>	
<u> </u>	2.5 ¥ 3/1 2.5 ¥ 4/1		· · · · · · · · · · · · · · · · · · ·	medium, subangular blocky fine sandy loam, medium, subangular blocky	
<u>18-28+</u> <u>Btg2</u>	10 YR 6/1	10 YR 5/6	few, medium, faint	silty clay, medium-coarse, angular blocky, firm	
Hydric Soil Indicators: Histosol Histic Epipedon X Sulfidic Odor Aquic Moisture Regim Reducing Conditions X Gleyed or Low-Chrom			Concretions High Organic Content Organic Streaking in S X Listed on Local Hydri Listed on National Hy Other (Explain in Rer	c Soils List dric Soils List	
Remarks: slightly sulfidic odor i Hyd	n Btg. Few oxidized ro leland is a Hydric A soi	ot channels in Big. I			
WETLAND DETERM Hydrophytic Vegetation Present? Wetland Hydrology Present? Hydric Soils Present?		No No No Is this 5	Sampling Point Within a Wetle	and? Yes No	
Remarks:					
				Approved by HQUSACE 3/92	

Project/Site: BISHOP ROAD MIT Applicant/Owner: NCDOT Investigator(s): MARTHA BREWSTE		1 	an a	Date: County: State:	11/28/2001 HYDE NORTH CAROLINA
Do Normal Circumstances exist on the s Is the site significantly disturbed (Atypi Is this area a potential Problem Area? (If needed, explain on reverse)		Yes Yes Yes	No	Community Transect ID Plot ID:	
VEGETATION	a segura de segura			and the second	
Dominant Plant Species	Stratum	Indicator	Domi	inant Plant Species	Stratum Indicator
1. Myrica cerifera	shrub	FAC+	<u>.</u>		
2. <u>Pluchea rosea</u>	herb	FACW	10.	service of the servic	
3. Juncus effusus	herb	FACW+	_ 11		
4. Campsis radicans	vine	FAC	12	· · · · · · · · · · · · · · · · · · ·	
5. <u>Acer rubrum</u>	tree	FAC	13	به ۲۰۰۰ بین در بار ۲۰۰۰ در از ۲۰۰۰ در ایران ۲۰۰۰ بین در ۲۰۰۰	
6. Pinus taeda	tree	planted	14	:	·
7.		· .	15	· · · · · · · · · · · · · · · · · · ·	
8.		s	16.		
Percent of Dominant Species that are Ol	BL, FACW, or FAC	C (excluding FAC),	100%	en e
Remarks: Dense canopy of pine shadin	ıg other vegetation.				
HYDROLOGY					
Recorded Data (Describe in Remar Stream, Lake, or tide (Aerial Photographs Other X No Recorded Data Available				Hydrology Indicators: ury Indicators: Inundated Saturated in Upper 1 Water Marks Drift Lines	
Field Observations:		n Maria Indenesia di San Maria di Santa di Santa Maria di Santa di Santa di Santa di Santa	Seco	Sediment Deposits Drainage Patterns in ondary Indicators (2 or m	nore required):
Depth of Surface Water:	<u>N/A</u> (in.)		— —	Oxidized Root Chan Water-Stained Leave	nnels in Upper 12 Inches
Depth to Free Water in Pit:	<u>N/A</u> (in.)	ії ₁ . Т		X Local Soil Survey D X FAC-Neutral Test	
Depth to Saturated Soil:	<u>N/A</u> (in.)			Other (Explain in Re	emarks)

Depth to Saturated Soil:

Remarks: No obvious surface hydrology; however, two secondary indicators exist.

Map Unit Name (Series and Phase):					Very poorly
Taxonomy (Subgrou	onomy (Subgroup) Umbric Endoaqualfs			Field Observations Confirm Mapped Typ	e' Yes No
Profile Description: Depth (inches) H	<u>Horizon</u>	Matrix Color (Munsell Moist)	Mottle Colors (<u>Munsell Moist)</u>	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
<u> </u>	<u></u>	2.5 Y 3/1	n an guna. 19 An Staine an Anna an Anna Anna Anna Anna Anna A	angan ang ang ang ang ang ang ang ang an	silt loam, subangular blocky, fine, friable silty clay loam, subangular
	Btg1	10 YR 5/1	10 YR 5/6	few, fine, faint	blocky, medium, slightly firm silty clay, subangular
16-24+	Btg2	10 YR 5/1	10 YR 6/6	few, fine, faint	blocky, medium-coarse,
	به ۲۰۰۰ میں 1. 1 م <mark>ر میں می</mark>				
				т	
·		1		ni - secondri - companya - <mark> </mark>	and the second
· · · · · · · · · · · · · · · · · · ·		2 <u></u> 2 		 	
Reducing	pipedon	a de la compresenta d		Concretions High Organic Content Organic Streaking in S X Listed on Local Hydri Listed on National Hy Other (Explain in Res	c Soils List dric Soils List
Remarks: Oxidized		d is a Hydric A soil s in Big2 horizon below .	16"		
WETLAND D)ETERM	INATION			
Hydrophytic Vegetar Wetland Hydrology Hydric Soils Present	Present?	Yes	No No Is this Sa	ampling Point Within a Wetl	and? Yes No
Remarks:					

Approved by HQUSACE 3/92

Project/Site:BISHOP ROAD MITIGATION SITEApplicant/Owner:NCDOTInvestigator(s):MARTHA BREWSTER, HAROLD BRADDo Normal Circumstances exist on the site?Is the site significantly disturbed (Atypical Situation)?Is this area a potential Problem Area?(If needed, explain on reverse))Y Yes Yes Yes	No	Date: County: State: Community ID: Transect ID: Plot ID:	11/29/2001 HYDE NORTH CAROLINA 30 year old pine N 1
VEGETATION Dominant Plant Species Stratum	Indicator	Dominan	t Plant Species Stra	atum Indicator
a de la companya de l	FACW		series and the series of the s	
Arundinaria gigantea herb 2. Smilax rotundifolia vine	FAC	10.		n a sistera d
3. Persea borbonia shrub	FACW			
4. Liquidambar styraciflua tree	FAC	12.		
5. Gelsemium sempervirens vine	FAC	13.	and the second secon	en angelen en angelen en angelen angel Angelen angelen
6. Myrica cerifera shrub	FAC+	14.		
7. Smilax smallii vine	FACU	15.		
8. <u>Pinus taeda</u> tree	planted	16.		
Percent of Dominant Species that are OBL, FACW, or FAC	cexcluding FAC		>75%	
HYDROLOGY	· · ·			
Recorded Data (Describe in Remarks) Stream, Lake, or tide Gauge Aerial Photographs Other X No Recorded Data Available		Primary In	Inundated Saturated in Upper 12 Inc Water Marks Drift Lines	hes
Field Observations:			Sediment Deposits Drainage Patterns in Wetl y Indicators (2 or more re-	
Depth of Surface Water: <u>N/A</u> (in.)			Oxidized Root Channels i Water-Stained Leaves	
Depth to Free Water in Pit: <u>N/A</u> (in.)		X	Local Soil Survey Data	
Depth to Saturated Soil: <u>N/A</u> (in.)			FAC-Neutral Test Other (Explain in Remark	s)
Remarks: No obvious surface hydrology; however, two see	condary indicato	rs exist.		

Map Unit Name (Series and Phase); Taxonomy (Subgroup)	Hydeland si Umbric Ende		Drainage Class: Field Observations Confirm Mapped Type?	Very poorly Yes No
<u>Profile Description:</u> Depth <u>(inches)</u> <u>Horizon</u>	Matrix Color (Munsell Moist)	Mottle Colors (<u>Munsell Moist)</u>	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
<u> </u>		ana arain a baran a dag		
<u>2-12"</u> <u>A</u>	<u>7.5 YR 2.5/1</u>		n an	silty loam, many fine roots
<u>12-22" Bt</u>	10 YR 7/3	10 YR 5/4	few, fine, faint	subangular blocky, friable silty clay loam, subangular
<u>22-24+</u> <u>Btg</u>	7.5 YR 7/2	7.5 YR 6/8	common, medium, distinct	blocky, slightly firm
		، ، ،		
Hydric Soil Indicators: Histosol Histic Epipedon Sulfidic Odor X Aquic Moisture Re Reducing Conditio X Gleyed or Low-Ch	ns		Concretions High Organic Content i Organic Streaking in Sa X Listed on Local Hydric Listed on National Hyd Other (Explain in Rem	Soils List ric Soils List
Remarks: Hydeland i	is a Hydric A soil			
WETLAND DETER	MINATION		lan ang banang bana Ang taka banang banan	tering and the second secon Second second
Hydrophytic Vegetation Prese Wetland Hydrology Present? Hydric Soils Present?	Yes	No No Is thi	s Sampling Point Within a Wetlar	nd? Yes No
Remarks:				Approved by HQUSACE 3/92

Project/Site: BISHOP ROAD MITTO Applicant/Owner: NCDOT Investigator(s): MARTHA BREWSTER	and the second sec	,		Date: County: State:	11/29/2001 HYDE NORTH CAROLINA
Do Normal Circumstances exist on the sit Is the site significantly disturbed (Atypica Is this area a potential Problem Area? (If needed, explain on reverse)		Yes Yes Yes	No No No	Communit Transect II Plot ID:	
VEGETATION	n in state and in state in s	lan an la gara gara. A			an a
Dominant Plant Species	<u>Stratum</u>	Indicator		Dominant Plant Species	<u>Stratum</u> <u>Indicator</u>
1. <u>Ilex opaca</u>	shrub	FAC-	9.	Pinus taeda	tree planted
2. Arundinaria gigantea	herb	FACW	10.	· · · · · · · · · · · · · · · · · · ·	n an an ann an an an an an an an an an a
3. Myrica cerifera	shrub	FAC+	- 11.		
4. Persea borbonia	shrub	FACW	12.		
5. <u>Smilax rotundifolia</u>	vine	FAC	13.	an an an an Anna an Anna an Anna an Anna Anna an Anna an	
6. Vitis rotundifolia	vine	FAC	14.	· .	·
7. Vaccinium stamineum	shrub	FACU	15.	· .	
8. Liquidambar styraciflua	shrub	FAC	16.	· · · · · · · · · · · · · · · · · · ·	
Remarks: Vegetation thin due to 80% ca.	nopy cover by Pinu	ıs taeda.			
HYDROLOGY	 				
Recorded Data (Describe in Remarka Stream, Lake, or tide Ga Aerial Photographs Other X No Recorded Data Available Field Observations:				land Hydrology Indicators: Primary Indicators: Inundated Saturated in Upper Water Marks Drift Lines Sediment Deposits Drainage Patterns i	n Wetlands
Depth of Surface Water:	<u>V/A (in.)</u>			Secondary Indicators (2 or n Oxidized Root Cha	nore required): nnels in Upper 12 Inches
	N/A_(in.)			Water-Stained Leav X Local Soil Survey I	
	<u>V/A</u> (in.)		ni Silan Silan Silan	X FAC-Neutral Test Other (Explain in F	lemarks)
Remarks: No obvious surface hydrology;	however, two secc	ndary indicators	exist.		

Map Unit Name (Series and Phase):	Hydeland s	ilt loam	Drainage Class: Field Observations	Very poorly
Taxonomy (Subgroup)	Ixonomy (Subgroup) Umbric Endoaqualfs			Yes No
<u>Profile Description:</u> Depth <u>(inches)</u> <u>Horizon</u>	Matrix Color (Munsell Moist)	Mottle Colors (<u>Munsell Moist)</u>	Abundance/Contrast	Texture, Concretions, Structure, etc. fine sandy loam, subangular
<u> </u>	7.5 YR 3/1			blocky, friable, medium fine sandy loam, subangular
<u>9-17"</u> <u>A2</u>	7.5 YR 4/2			blocking, medium, friable fine sandy clay loam,
<u>Btg</u>	<u>7.5 YR 7/3</u>	<u>10 YR 7/6</u>	few, medium, distinct	subangular blocky,medium,
		<u>an an a</u>		
· · · · · · · · · · · · · · · · · · ·	·			
Hydric Soil Indicators:	د. میں والی کے اس کے دیار	ana an	an a	
Histosol Histic Epipedon Sulfidic Odor X Aquic Moisture Regim Reducing Conditions X Gleyed or Low-Chroma	ار این کرد از مطالب می کرد می در این این		Concretions High Organic Content in Organic Streaking in Sar X Listed on Local Hydric S Listed on National Hydri Other (Explain in Rema	Soils List ic Soils List
Remarks:				
WETLAND DETERMI	INATION			
Hydrophytic Vegetation Present? Wetland Hydrology Present? Hydric Soils Present?	Yes	No No Is this	Sampling Point Within a Wetland	d? Yes No
Remarks:				
na an ann an Anna an A Anna an Anna an	e Anglas y ang ang ang ang ang ang ang ang Ang ang ang ang ang ang ang ang ang ang a	an ala san fa san fara an	a sector de la contraction de la contra	Approved by HQUSACE 3/92

Project/Site: BISHOP ROAD MITIGATION SITE Applicant/Owner: NCDOT Investigator(s): MARTHA BREWSTER, HAROLD BR	ADY	Date: 11/29/2001 County: HYDE State: NORTH CAROLINA
Do Normal Circumstances exist on the site? Is the site significantly disturbed (Atypical Situation)? Is this area a potential Problem Area? (If needed, explain on reverse)	Yes Yes Yes	No Transect ID: N
and the second	and an inclusion of	an a
VEGETATION	T	Dominant Plant Species Stratum Indicator
Dominant Plant Species Stratum	Indicator	Dominant Plant Species Stratum Indicator
1. Myrica cerifera shrub	FAC+	9. <u>Campsis radicans</u> vine FAC
2. <u>Smilax bona-nox</u> vine	FAC	10. Pinus taeda tree planted
3. Juncus effusus herb	FACW+	$\frac{1}{2} = \frac{1}{2} \left[\frac{1}{2} \left[$
4. Pluchea rosea herb	FACW+	12.
5. <u>Solidago ordova herb</u>	N/1 (UPL)	13.
6. Quercus nigra tree	FAC	14
7. Juniperus virginiana shrub	FACU-	15.
8. Solidago tenuifolia herb	N/1 (UPL)	16.
Percent of Dominant Species that are OBL, FACW, or F.	AC (excluding FAC	>)
HYDROLOGY		
Recorded Data (Describe in Remarks) Stream, Lake, or tide Gauge Aerial Photographs Other X No Recorded Data Available		Wetland Hydrology Indicators: Primary Indicators: Inundated Saturated in Upper 12 Inches Water Marks Drift Lines Sediment Deposits Drainage Patterns in Wetlands
Field Observations:		Secondary Indicators (2 or more required): Oxidized Root Channels in Upper 12 Inches
Depth of Surface Water: <u>N/A</u> (in.)		Water-Stained Leaves
Depth to Free Water in Pit: <u>N/A</u> (in.)		X Local Soil Survey Data FAC-Neutral Test FAC-Neutral Test
Depth to Saturated Soil: <u>N/A</u> (in.)	n The second s	Other (Explain in Remarks)
Remarks: No obvious surface hydrology.		

Map Unit Name (Series and Phase):	Hydeland sil	t loam	Drainage Class:	Very poorly	
Taxonomy (Subgroup)	Umbric Endo	aqualfs	Field Observations Confirm Mapped Type: Yes No		
<u>Profile Description:</u> Depth (inches) <u>Horizon</u>	Matrix Color (<u>Munsell Moist)</u>	Mottle Colors (<u>Munsell Moist)</u>	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.	
<u> </u>	5 YR 4/1	e da angeographie an an angeographie Tanangeographie angeographie angeographie angeographie angeographie angeographie angeographie angeographie ang		silty clay loam, subangular blocky, friable silty clay , subangular	
<u>12-24+</u> <u>B</u>	<u>10 YR 6/2</u>	<u>10 YR 6/6</u>	common, coarse, distinct	blocky, coarse, firm	
	n an	in a second	۲۰ <u>ــــــــــــــــــــــــــــــــــــ</u>		
			e de la composition d La composition de la c		
and a second second second second			· · · · · · · · · · · · · · · · · · ·		
Hydric Soil Indicators:					
Histosol Histic Epipedon Sulfidic Odor X Aquic Moisture R Reducing Condition X Gleyed or Low-Ch	ons		Concretions High Organic Content i Organic Streaking in Sa X Listed on Local Hydric Listed on National Hyd Other (Explain in Rem	Soils List ric Soils List	
Remarks: Hydeland	is a Hydric A soil				
WETLAND DETER	RMINATION			an a	
Hydrophytic Vegetation Pres Wetland Hydrology Present? Hydric Soils Present?	ent? Yes N Yes N Yes N	o	Sampling Point Within a Wetlar	d? Yes No	
Remarks:					
		e la companya da companya Na companya da c		Approved by HQUSACE 3/92	
n an	ter et al antiparte de la companya de la companya Na companya de la comp	an talan salah salah Salah salah sala	lad galant programping a kang panang a kang panang sa sa Salah kang bang panang pana	en en feren en faran en en transformen en e	

Project/Site: BISHOP ROAD MT Applicant/Owner: NCDOT Investigator(s): CINDY CARR, HAR	· .				Date: County: State:	· · · · · · · · · · · · · · · · · · ·	1/28/2001 HYDE H CAROLINA
Do Normal Circumstances exist on the Is the site significantly disturbed (Atype Is this area a potential Problem Area? (If needed, explain on reverse)		Yes Yes Yes	No No No		Communit Transect II Plot ID:		ld pine plantation P 1
VEGETATION	en an ann an Arraighean An Arraighean	ین کا میں کہ میں اس	in en di s	an procession		gan di sana	
Dominant Plant Species	Stratum	Indicator	1111	Dominant P	lant Species	Stratum	Indicator
1. <u>Quercus nigra</u>	shrub	FAC	9.	· · · · · · · · · · · · · · · · · · ·	· · · · · · · · · · · · · · · · · · ·		
2. <u>Persea borbonia</u>	shrub	FACW	10.	nga shay			<u> </u>
3. Chasmanthium laxum	herb	FACW-	11.			n - Charage - Charage - Charage	
4. <u>Vaccinium arboreum</u>	shrub	FACU	12.		n en	na in an	· · · · · · · · · · · · · · · · · · ·
5. <u>Aronia arbutifolia</u>	tree	FACW	13.			· · · · · · · · · · · · · · · · · · ·	
6. Smilax rotundifolia	vine	FAC	14.				<u></u>
n n. The defense of the second second defense of the second s			15.	1. ¹			
8.			16.				
Percent of Dominant Species that are O Remarks:	BL, FACW, or FAC	c (excluding FAC	-)	·	>75%		
HYDROLOGY							
Recorded Data (Describe in Rema			We	land Wydrol	ogy Indicators:	an an an Arran Arr	and the second second
Stream, Lake, or tide Stream, Lake, or tide Aerial Photographs Other X No Recorded Data Available				Primary Indi Inu Sa Wi	cators: undated turated in Upper ater Marks ift Lines	12 Inches	
Field Observations:		n an		Dr	diment Deposits ainage Patterns i	in Wetlands	an a
Depth of Surface Water:	<u>N/A</u> (in.)			Ö	Indicators (2 or r ridized Root Cha	unnels in Upper i	12 Inches
Depth to Free Water in Pit:	<u>N/A</u> (in.)			X Lo	ater-Stained Lea cal Soil Survey		
Depth to Saturated Soil:	<u>N/A (in.)</u>			$- \frac{\mathbf{X}}{-} \mathbf{F} \mathbf{A}$	C-Neutral Test her (Explain in I	Remarks)	
Remarks: No obvious hydrolog	in the second	r, two secondary i	indicator	s exist.			

J

6 A.

Map Unit Name (Series and Phase):	Hydeland silt lo	9am	Drainage Class: Very poorly Field Observations Confirm Mapped Type? Yes No		
Taxonomy (Subgroup)	Umbric Endoaq	ualfs			
Profile Description: Depth (inches) Horizon	Matrix Color (<u>Munsell Moist)</u>	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.	
<u> </u>		an an an an an an Arg	and and a second se Second second second Second second		
<u> </u>	7.5 YR 2.5/1		<u>i en estatut en estatut.</u> References	silt loam	
<u>7-19" Btg1</u>	<u>5 YR 5/4</u>	2.5 YR 8/3	<u>coarse, few, distinct</u>	fine sandy clay loam	
		7.5 YR 7/8	fine, few, distinct		
<u>19-24+</u> <u>Btg2</u>	<u>2.5 Yr 6/1</u>	7.5 YR 7/8	common, distinct, medium	fine sandy clay loam	
		· · · · · · · · · · · · · · · · · · ·			
Hydric Soil Indicators:					
Histosol Histic Epipedon Sulfidic Odor X Aquic Moisture Regi Reducing Conditions X Gleyed or Low-Chros	8		Concretions High Organic Content in Organic Streaking in San X Listed on Local Hydric S Listed on National Hydric Other (Explain in Remar	oils List ¢ Soils List	
Remarks: Albic inclusions app Hydeland is a Hy					
WETLAND DETERN	<u>IINATION</u>		an a		
Hydrophytic Vegetation Present Wetland Hydrology Present? Hydric Soils Present?	? Yes No Yes No Yes No	Is thi	is Sampling Point Within a Wetland	1? Yes No	
			A	Approved by HQUSACE 3/92	

Project/Site: BISHOP ROAD MITIGATION SITE Applicant/Owner: NCDOT Investigator(s): CINDY CARR, HAROLD BRADY Do Normal Circumstances exist on the site? Yes Is the site significantly disturbed (Atypical Situation)? Yes	
Is this area a potential Problem Area? Yes	
(If needed, explain on reverse)	
VEGETATION Dominant Plant Species Stratum Indicator	Dominant Plant Species Stratum Indicator
1. Persea borbonia shrub FACW	9
1. <u>rersea obroonia</u> <u>shrub</u> FACW 2. Arundinaria gigantea herb FACW	
3. Smilax rotundifolia vine FAC	
4. Liquidambar styraciflua tree FAC	12.
5. Gordonia lasianthus tree FACW	13.
6. <u>Nex opaca</u> shrub FAC-	14.
7. Myrica cerifera shrub FAC+	15. The second sec
8.	16.
Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC	C-). >75%
	C-). ≥75%
Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC Remarks:	C-). >75%
	C-). >75%
	C-) >75%
	C-) >75%
Remarks: HYDROLOGYRecorded Data (Describe in Remarks)	Wetland Hydrology Indicators:
Remarks: HYDROLOGY	Wetland Hydrology Indicators: Primary Indicators: Inundated
Remarks: HYDROLOGY Recorded Data (Describe in Remarks) Stream, Lake, or tide Gauge Aerial Photographs Other	Wetland Hydrology Indicators: Primary Indicators: Inundated Saturated in Upper 12 Inches
Remarks: HYDROLOGY Recorded Data (Describe in Remarks) Stream, Lake, or tide Gauge Aerial Photographs	Wetland Hydrology Indicators: Primary Indicators: Inundated Saturated in Upper 12 Inches Water Marks Drift Lines
Remarks: HYDROLOGY Recorded Data (Describe in Remarks) Stream, Lake, or tide Gauge Aerial Photographs Other	Wetland Hydrology Indicators: Primary Indicators: Inundated Saturated in Upper 12 Inches Water Marks Drift Lines Sediment Deposits Drainage Patterns in Wetlands
Remarks: HYDROLOGY Recorded Data (Describe in Remarks) Stream, Lake, or tide Gauge Aerial Photographs Other XNo Recorded Data Available	Wetland Hydrology Indicators: Primary Indicators: Inundated Saturated in Upper 12 Inches Water Marks Drift Lines Sediment Deposits Drainage Patterns in Wetlands Secondary Indicators (2 or more required): Oxidized Root Channels in Upper 12 Inches
Remarks: HYDROLOGY	Wetland Hydrology Indicators: Primary Indicators: Inundated Saturated in Upper 12 Inches Water Marks Drift Lines Sediment Deposits Drainage Patterns in Wetlands Secondary Indicators (2 or more required): Oxidized Root Channels in Upper 12 Inches Water-Stained Leaves X Local Soil Survey Data
Remarks: HYDROLOGY	Wetland Hydrology Indicators: Primary Indicators: Inundated Saturated in Upper 12 Inches Water Marks Drift Lines Sediment Deposits Drainage Patterns in Wetlands Secondary Indicators (2 or more required): Oxidized Root Channels in Upper 12 Inches Water-Stained Leaves
Remarks: Recorded Data (Describe in Remarks) Recorded Data (Describe in Remarks) Aerial Photographs Other XNo Recorded Data Available Field Observations: Depth of Surface Water: N/A(in.) Depth to Free Water in Pit: N/A(in.)	Wetland Hydrology Indicators: Primary Indicators: Inundated Saturated in Upper 12 Inches Water Marks Drift Lines Sediment Deposits Drainage Patterns in Wetlands Secondary Indicators (2 or more required): Oxidized Root Channels in Upper 12 Inches Water-Stained Leaves X Local Soil Survey Data X FAC-Neutral Test Other (Explain in Remarks)

Map Unit Name (Series and Phase):	Hydeland :	silt loam	Drainage Class: Field Observations	Very poorly
Taxonomy (Subgroup)) Umbric Endoaqualfs		Confirm Mapped Type?	Yes
Profile Description: Depth (inches) <u>Horizon</u>	Matrix Color (<u>Munsell Moist)</u>	Mottle Colors (<u>Munsell Moist)</u>	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
<u>0-1"</u> <u>Oi</u>		an gana ana barang gala ang barang Tanang sang sang sang sang sang sang sang	na na sana ang ang ang ang ang ang ang ang ang	e privina da la districta e electro. Actor de la compositione
<u> </u>	<u>7.5 YR 2.5/1</u>			silt loam
<u>7-20" Btg1</u>	<u>5 YR 5/4</u>	2.5 YR 8/3	coarse, few, distinct	fine sandy clay loam
	2.5 YR 6/1	7.5 YR 7/8 7.5 YR 7/8	fine, few, distinct	fine sandy clay loam
<u>20-24+</u> <u>Btg2</u>	<u></u>	7.5 IR //o	common, meatum, aistinct	jine sanay city toum
			······	
Hydric Soil Indicators:				
Histosol Histic Epipedon Sulfidic Odor X Aquic Moisture Reg Reducing Condition X Gleyed or Low-Chro	IS		Concretions High Organic Content in Organic Streaking in Sar X Listed on Local Hydric S Listed on National Hydri Other (Explain in Rema	oils List c Soils List
Remarks: Hydeland is	a Hydric A soil			
WETLAND DETER	MINATION			
Hydrophytic Vegetation Presen Wetland Hydrology Present? Hydric Soils Present?	Yes	No No No Is this	Sampling Point Within a Wetland	1? Yes No
Remarks:				
an a	and a second	andre og gener og er her som ekken som en gener og som ekken som ekken som ekken som ekken som ekken som ekken Till som ekken som ek	전에 물려 가 많다. 김 것 같아?	Approved by HQUSACE 3/92

Project/Site: BISHOP ROAD M Applicant/Owner: NCDOT Investigator(s): MARTHA BREWST	ITIGATION SITE ER, HAROLD BRAD	r 		lana na taon ang sa	Date: County: State:	E E	28/2001 IYDE CAROLINA
Do Normal Circumstances exist on the Is the site significantly disturbed (Atyr Is this area a potential Problem Area? (If needed, explain on reverse)		Yes Yes Yes	No No No		Community II Transect ID: Plot ID:): 30 yea	tr old pine P 3
VEGETATION	and a second	an a		an a	ana dia k	t nationale a	nen en ser
Dominant Plant Species	Stratum	Indicator		Dominant Plant S	pecies	Stratum	Indicator
1. Arundinaria gigantea	herb	FACW	9.	Hydrocotyle sp.	stude <u>de</u>	herb	FACW
2. Smilax rotundifolia	vine	FAC	10.	Liquidambar sty	raciflua	shrub	FAC
3. Mikania scandens	vine	FACW	11.			arte Tarante de la composito	n an
4. <u>Myrica cerifera</u>	shrub	FAC+	12.	n Na series and series	<u></u>		
5. <u>Gelsemium sempervirens</u>	vine	FAC	13.	an a	a service a	e light de la d La de la d	and and a second se
6. Pteridium aquilinum	herb	FACU	14.				
7. Ilex opaca	shrub	FAC-	15.				
8. Quercus nigra	shrub	FAC	16.				
Remarks:							
HYDROLOGY		· · · · · · · · · · · · · · · · · · ·					
Recorded Data (Describe in Rema Stream, Lake, or tide Aerial Photographs Other X No Recorded Data Available			Weti I	Water M	s: ed ed in Upper 12 Aarks nes	Inches	
Field Observations:	an ann an ann anns anns anns a	an an taon 1990. Ang ang ang ang ang ang ang ang ang ang a	n in star Anna an Anna Anna	Drainag	nt Deposits e Patterns in W	Vetlands	
Depth of Surface Water:	<u>N/A</u> (in.)		le d		d Root Channe	e required): els in Upper 12	Inches
Depth to Free Water in Pit:	<u>N/A</u> (in.)		÷ .	X Local Se	tained Leaves oil Survey Data	a .	
Depth to Saturated Soil:	<u>15</u> (in.)	an a		X FAC-Ne Other (I	eutral Test Explain in Rem	arks)	ter de la companya d La companya de la comp
Remarks: No obvious hydrolo	ogy observed; howeve	r, two secondary	indicato	rs exist.		· · · · ·	

Map Unit Name (Series and Phase): Taxonomy (Subgroup)	Hydeland s Umbric End		Drainage Class: Field Observations Confirm Mapped Type?	Very Poorly Yes No
Profile Description: Depth (inches) Horizon 0-4" Oi 4-20" A 20-24+ Btg	Matrix Color (<u>Munsell Moist</u>) 7.5 YR 2.5/1 2.5 YR 5/1	Mottle Colors (Munsell Moist) 2.5 YR 8/2 7.5 YR 6/8	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc. organic silty loam silt loam, friable, non-sticky sandy clay loam, friable
Hydric Soil Indicators: Histosol Histic Epipedon Sulfidic Odor X Aquic Moisture Reducing Condii X Gleyed or Low-C Remarks: Saturation at 15	tions Chroma Colors		Concretions High Organic Content in Organic Streaking in Sa X Listed on Local Hydric Listed on National Hydr Other (Explain in Rema c mottles appear to be inclusion	Soils List tic Soils List arks)

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes	No	
Wetland Hydrology Present?	Yes	No	
Hydric Soils Present?	Yes	No	Is this Sampling Point Within a Wetland? Yes No
and the second			

Remarks:

Approved by HQUSACE 3/92

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Project/Site: BISHOP ROAD MIT Applicant/Owner: NCDOT Investigator(s): MARTHA BREWSTE Do Normal Circumstances exist on the s Is the site significantly disturbed (Atypic Is this area a potential Problem Area? (If needed, explain on reverse) If needed, explain on reverse	<i>R, HAROLD BRÄL</i> site?	DY Yes Yes Yes	No No No	Date: County: State: Commun Transect Plot ID:		11/29/2001 HYDE TH CAROLINA year old pine Q 2
VEGETATION				and a state of the second state Second state of the second state		
Dominant Plant Species	Stratum	Indicator		Dominant Plant Species	Stratum	Indicator
1. <u>Persea borbonia</u>	shrub	FACW	··· 9. ··	Ilex glabra	shrub	FACW
2. Arundinaria gigantea	herb	FACW	10.	Vaccinium corymbosum	shrub	FACW
3. Quercus nigra	tree	FAC	11.	Smilax rotundifolia	vine	FAC
4. Myrica cerifera	shrub	FAC+	12.	Pinus taeda	tree	planted
5. Gelsemium sempervirens	vine	FAC	13.	en en la companya de la companya de La companya de la comp A companya de la comp		
6. Ilex opaca	shrub	FAC-	14.	· · ·		
7. Quercus phellos	tree	FACW-	15.		i at radie	
8. Liquidambar styraciflua	tree	FAC	16.			n an
Remarks:						
HYDROLOGY					a An an tao amin'ny faritr'o amin'ny faritr'o amin'ny faritr'o amin'ny faritr'o amin'ny faritr'o amin'ny faritr'o	
Recorded Data (Describe in Remar Stream, Lake, or tide (Aerial Photographs Other X No Recorded Data Available			We	tland Hydrology Indicators: Primary Indicators: Inundated X Saturated in Upp Water Marks Drift Lines Sediment Deposi	er 12 Inches	
Field Observations: Depth of Surface Water:	<u>N/A</u> (in.)		۰۰ را حال - - ا	Drainage Pattern Secondary Indicators (2 o	s in Wetlands r more required): hannels in Upper	12 Inches
Depth to Free Water in Pit: Depth to Saturated Soil:	20(in.) 8(in.)		nan se	X Local Soil Surve FAC-Neutral Tes Other (Explain in	y Data st	
Remarks: some standing water and son	ne water stained le	paves				

Map Unit Name (Series and Phase): Hydeland silt loam	Drainage Class: Very poorly Field Observations		
Taxonomy (Subgroup) Umbric Endoaqualfs	Confirm Mapped Type: Yes No		
Profile Description: Matrix Color Mottle Colors Depth Matrix Color Mottle Colors (inches) Horizon (Munsell Moist) (Munsell Moist)	Mottle Abundance/Contrast Structure, etc.		
<u> </u>	organic		
<u>8-24+ Btg 10 YR 7/2 7.5 YR 7/6</u>	many, fine-medium, faint		
	kan panang kan ng panang kan pang bang bang bang bang bang bang bang b		
n yn ei	e y han de ar en		
Hydric Soil Indicators:			
Histosol Histic Epipedon Sulfidic Odor X Aquic Moisture Regime Reducing Conditions X Gleyed or Low-Chroma Colors	Concretions High Organic Content in Surface Layer in Sandy Soils Organic Streaking in Sandy Soils Listed on Local Hydric Soils List Listed on National Hydric Soils List Other (Explain in Remarks)		
Remarks: Saturation at 8", water at 20"			
WETLAND DETERMINATION			
Hydrophytic Vegetation Present?YesNoWetland Hydrology Present?YesNo	ampling Point Within a Wetland? Yes No		
Remarks:			
a de la companya de l	Approved by HQUSACE 3/92		

Applicant/Owner: NCDOT	ypical Situation)?	4DY Yes Yes	No No No		Date: County: State: Community Transect II Plot ID:	<u>NOR1</u> ty ID: <u>30 Y</u>	1/29/2001 HYDE TH CAROLINA YR OLD PINE Q 3
VEGETATION	and generation of a generation		· · · · · ·	21 144 1 	· · · · · · · · · · · · · · · · · · ·		
Dominant Plant Species	<u>Stratum</u>	Indicator		Dominan	t Plant Species	<u>Stratum</u>	Indicator
1. Myrica cerifera	shrub	FAC+	9.	Pers	ea borbonia	tree	FACW
2. Smilax bona-nox	vine	FAC	10.	Vaccinii	um corymbosum	shrub	FACW
3. Gelsemium sempervirens	vine	FAC	. 11. /		lex opaca	shrub	FAC-
4. Arundinaria gigantea	shrub	FACW	12.	Pi	inus taeda	tree	planted
5. <u>Smilax smallii</u>	vine	FACU	13.		in the second	n Banara an Indonesia Tanàna amin'ny tanàna Tanàna amin'ny tanàna mandritry tanàna mandritry tanàna mandritry tanàna mandritry tanàna mandritry tanàna mand	en de la composition de la composition Reference de la composition de la compos
6. Quercus phellos	tree	FACW-	14.				· · · · · · · · · · · · · · · · · · ·
7. Quercus nigra	tree	FAC	15.			a ¹ 1945-1414	
8. Acer rubrum	tree	FAC	16.				
Percent of Dominant Species that are Remarks:	OBL, FACW, or FAC	C (excluding FAC-	•)••** • • • • • • • • • • • • • • • • •		>75%		
HYDROLOGY	1977 - 1979 - 1977 - 1979		oan en sej e s		en an garager ar g		- 1
Recorded Data (Describe in Rem Stream, Lake, or tid Aerial Photographs Other X No Recorded Data Available Field Observations:	de Gauge			Primary In	ology Indicators: indicators: Inundated Saturated in Upper Water Marks Drift Lines Sediment Deposits Drainage Patterns in	12 Inches in Wetlands	
Depth of Surface Water: Depth to Free Water in Pit: Depth to Saturated Soil:	<u>N/A</u> (in.) <u>N/A</u> (in.) <u>N/A</u> (in.)				ry Indicators (2 or m Oxidized Root Chan Water-Stained Leav Local Soil Survey D FAC-Neutral Test Other (Explain in R	unnels in Upper 1 ves Data	12 Inches
Remarks: Some water-stained leaves	s in low rut areas			·			

Map Unit Name (Series and Phase):	Hydeland silt lo	am	Drainage Class:	Very poorly
Taxonomy (Subgroup)	Umbric Endoaqı	ıalfs	Field Observations Confirm Mapped Type	Yes No
Profile Description: Depth (inches) Horizon	Matrix Color (Munșell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
<u> </u>	r (* 1997) 2015 - State State State State State 1997 - State St			organic
<u> </u>	7.5 YR 3/1	<u></u>	<u> </u>	histic, loam, many fine roots subangular blocky, friable,
<u>7-15"</u> <u>Btg1</u>	<u>10 YR 7/2</u>	10 VD 7/0		silty loam coarse subangular blocky,
<u>15-24+"</u> <u>Btg2</u>	<u>10YR 6/1</u>	10 YR 7/8	<u>common, med, distinct</u>	silty clay loam
	:	х	and the second	
	egime	Ce	Concretions High Organic Content Organic Streaking in S X Listed on Local Hydric Listed on National Hydric Other (Explain in Rem	Soils List ric Soils List
WETLAND DETER	RMINATION	stantin and an	an a	
Hydrophytic Vegetation Prese Wetland Hydrology Present? Hydric Soils Present?	Yes No	Is th	is Sampling Point Within a Wetla	nd? Yes No
Remarks:				
				Approved by HQUSACE 3/92

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	e de la composition d La composition de la c				
Project/Site: BISHOP ROAD M Applicant/Owner: NCDOT Investigator(s): MARTHA BREWS	MITIGATION SITE STER, HAROLD BRAI	DY		Date: County: State:	11/29/2001 HYDE NORTH CAROLINA
Do Normal Circumstances exist on th Is the site significantly disturbed (Aty Is this area a potential Problem Area? (If needed, explain on reverse)	pical Situation)?	Yes Yes Yes	No No No	Community Transect ID Plot ID:	<i>, , ,</i>
VEGETATION			· · · · · · · · · · · · · · · · · · ·	and the second secon	
Dominant Plant Species	Stratum	Indicator		Dominant Plant Species	Stratum Indicator
1. Myrica cerifera	shrub	FAC+	9.	Pinus taeda	shrub planted
2. Smilax rotundifolia	vine	FAC	[•] 10.	Chasmanthium laxum	herb FACW-
3. Persea borbonia	tree	FACW	11.		
4. Arundinaria gigantea	shrub	FACW	12.	· · · · · · · · · · · · · · · · · · ·	· · · · · · · · · · · · · · · · · · ·
5. Smilax glauca	vine	FACU	13.	ter d'anna ann an an an an an ann an an an an	
6. Quercus phellos	tree	FACW-	14.		
7. Quercus nigra	tree	FAC	15.		
8. <u>Acer rubrum</u>	tree	FAC	16.		
Percent of Dominant Species that are Remarks:	OBL, FACW, or FAC) (excluding FAC-).	> 75%	
	· · · · · · · · · · · · · · · · · · ·				
HYDROLOGY					
Recorded Data (Describe in Ren Stream, Lake, or tid Aerial Photographs Other	le Gauge			land Hydrology Indicators: Primary Indicators: Inundated Saturated in Upper	12 Inches
X No Recorded Data Available			• •	Water Marks Drift Lines	
Field Observations:				Sediment Deposits Drainage Patterns in Secondary Indicators (2 or m	ore required):
Depth of Surface Water:	<u>N/A</u> (in.)			X Water-Stained Leave	
Depth to Free Water in Pit:	<u>N/A</u> (in.)			X Local Soil Survey D X FAC-Neutral Test	hata
Depth to Saturated Soil:	<u>N/A</u> (in.)			Other (Explain in R	emarks)
Remarks: Small puddles of standing	water				

Map Unit Name (Series and Phase):	ries and Phase): <u>Acredale silt loam</u>		Drainage Class:	Poorly
Taxonomy (Subgroup)			Field Observations Confirm Mapped Type?	Yes No
Profile Description: Depth (inches) Horizon 0-1" Oi	Matrix Color (<u>Munsell Moist)</u>	Mottle Colors (<u>Munsell Moist)</u>	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
<u>1-5"</u> <u>A</u>	7.5 YR 3/2		····	many fine roots, silt loam
5-18" <u>Btg1</u>	<u>2.5 Y 6/3</u>	2.5 Y 6/6	few, fine faint	silty clay loam
<u>18-24+" Btg2</u>	2.5 Y 6/2	10 YR 6/8	many, medium, distinct	fine sandy clay loam
		5 Y 6/1	few, fine faint	energitaab maat taga ^b oortin. Ah
······································			The All States and the All All All All All All All All All Al	
Histic Epipedon Sulfidic Odor X Aquic Moisture Reg Reducing Condition X Gleyed or Low-Chro Remarks:	s · · · · · · · · · · · ·		High Organic Content in Organic Streaking in Sa X Listed on Local Hydric S Listed on National Hydr Other (Explain in Rema	Soils List ic Soils List
WETLAND DETER	MINATION		an a	
Hydrophytic Vegetation Presen Wetland Hydrology Present? Hydric Soils Present?	t? Yes N Yes N Yes N	0	Sampling Point Within a Wetlan	d? <u>Yes</u> No
Remarks:				
				Approved by HQUSACE 3/9

Project/Site: BISHOP ROAD MITIGATION SITE Applicant/Owner: NCDOT Investigator(s): CINDY CARR, TOM BARRETT		Date: 11/29/2001 County: <u>HYDE</u> State: <u>NORTH CAROLINA</u>
Do Normal Circumstances exist on the site? Is the site significantly disturbed (Atypical Situation)? Is this area a potential Problem Area? (If needed, explain on reverse)	Yes Yes Yes	No Community ID: Pine cutover No Transect ID: Q No Plot ID: 5
VEGETATION		
Dominant Plant Species Stratum	Indicator	Dominant Plant Species Stratum Indicator
1. Solidago altissima herb.	FACU+	9. ***
2. Juncus effesus herb.	FACW+	10.
3. <u>Baccharis halimifolia</u> shrub	FAC	n <u>n an an</u>
4. <u>Typha latifolia</u> herb.	OBL	12.
5. <u>Myrica cerifera</u> shrub	FAC+	13.
6. Dichanthelium herb.	FAC	Í4.
7. <u>Pinus taeda</u> shrub	FAC	15.
8. Arundinaria gigantea herb.	FACW	16 16
Percent of Dominant Species that are OBL, FACW, or FAC) (excluding FAC-	-).
Remarks:		
	· · ·	
HYDROLOGY		en en presente por la constructiva de la constructiva de la constructiva de la construcción de la construcción Nota de la construcción de la const
Recorded Data (Describe in Remarks) Stream, Lake, or tide Gauge		Wetland Hydrology Indicators: Primary Indicators:
Aerial Photographs		Inundated Saturated in Upper 12 Inches
X No Recorded Data Available		Water Marks Drift Lines
Field Observations:		Sediment Deposits Drainage Patterns in Wetlands
Depth of Surface Water: <u>N/A</u> (in.)		Secondary Indicators (2 or more required): Oxidized Root Channels in Upper 12 Inches
Depth to Free Water in Pit: <u>N/A</u> (in.)		Water-Stained Leaves X Local Soil Survey Data
Depth to Saturated Soil: (in.)		X FAC-Neutral Test Other (Explain in Remarks)
Remarks:		

Map Unit Name (Series and Phase):	Acredale silt loam		Drainage Class: poorly		
Taxonomy (Subgroup)	Typic End	oaqualfs	Field Observations Confirm Mapped Type: Yes No		
Profile Description: Depth (inches) Horizon	Matrix Color <u>(Munsell Moist)</u>	Mottle Colors <u>(Munsell Moist)</u>	Moitle Abundance/Contrast	Texture, Concretions, Structure, etc.	
<u> </u>	7.5 YR 3/1		1	silt loam	
<u>8-20" Bt</u>	5 YR 6/3	7.5 YR 6/8	common, medium, distinct	silty clay loam, friable, subangular blocky	
· · · · · · · · · · · · · · · · · · ·	an an thair an	2.5 YR 8/2	few, coarse, distinct		
<u>20-24" Btg</u>	2.5 YR 6/2	10YR 8/4	many, medium, faint	silty clay loam	
Hydric Soil Indicators:				a Maria di Angela di Angela di Angela di An	
Histosol Histic Epipedon Sulfidic Odor X Aquic Moisture Regir Reducing Conditions X Gleyed or Low-Chron Remarks: soil saturate Acredale is a H	na Colors na below 20"		Concretions High Organic Content in Organic Streaking in Sa X Listed on Local Hydric S Listed on National Hydr Other (Explain in Rema	Soils List ic Soils List	
WETLAND DETERM	INATION	an an an taon a Taon an taon an Taon an taon an			
Hydrophytic Vegetation Present? Wetland Hydrology Present? Hydric Soils Present?	Yes Yes Yes	No No No	Sampling Point Within a Wetlan	i? <u>Yes</u> No	
Remarks:				Approved by HQUSACE 3/92	
				192 - 192 - 192 - 192 - 192 - 192 - 192 - 192	

			and an
Project/Site: BISHOP ROAD MITIGATION SITE Applicant/Owner: NCDOT Investigator(s): CINDY CARR, TOM BARRETT		Date: County: State:	11/29/2001 HYDE NORTH CAROLINA
Do Normal Circumstances exist on the site? Is the site significantly disturbed (Atypical Situation)? Is this area a potential Problem Area? (If needed, explain on reverse)	Yes Yes Yes	No No No No	Pine cutover Q 6
VEGETATION	······································	an an tao an an an tao an tao an tao an	
Dominant Plant Species Stratum	Indicator	Dominant Plant Species Strat	tum Indicator
1. Juncus effesus herb	FACW+	9. Panicum virgatum her	rbFACW
2. <u>Rhycospera inexpansa</u> herb	FACW	10. Pinus taeda shri	ub FAC
3. <u>Solidago altissima</u> herb	FACU+	11. Eleocharis tuberculosa her	rbFACW+
4. Solidago microcephala herb	UPL	12. Baccharis halimifolia shri	ub FACW
5. <u>Rhexia spp.</u>	FACW+	13. <u>Hydrocotyle</u> her	rb FACW
6. Dichanthelium consanguineum herb	FAC	14. <u>Carex spp.</u> her	rb FAC
7. Solidago rugosa herb	FAC	15. <u> </u>	
8. Typha latifolia herb	OBL	16.	
Percent of Dominant Species that are OBL, FACW, or FAC	· (eycluding FAC-). >50%	
	((nvinuing)		<u>an an a</u>
Remarks:			
HYDROLOGY	and a start of the second s	a na ana ang ang ang ang ang ang ang ang	
Recorded Data (Describe in Remarks)	T	Wetland Hydrology Indicators:	
Stream, Lake, or tide Gauge Aerial Photographs		Primary Indicators: Inundated	- New Sold of Alexandron Sold of the Sold Sold Sold Sold Sold Sold Sold Sold
Other		Saturated in Upper 12 Inch	es and a second second
X No Recorded Data Available		Water Marks Drift Lines	
Field Observations:		Sediment Deposits Drainage Patterns in Wetlan	
Depth of Surface Water: <u>N/A</u> (in.)	Andreas de Charles de La Serie Angles Angles de La Serie de La Serie	Secondary Indicators (2 or more requ Oxidized Root Channels in	uired):
Depth to Free Water in Pit: <u>N/A</u> (in.)		Water-Stained Leaves X Local Soil Survey Data	
Depth to Saturated Soil: <u>N/A</u> (in.)		X Eccar Bon Bartoy Data X FAC-Neutral Test Other (Explain in Remarks)	۵. ۱۹۹۵ - ۲۰۰۹ میلید میلید از ۲۰۰۹ ۱۹۹۵ - ۲۰۰۹ میلید میلید از ۲۰۰۹ میلید (۲۰۰۹ میلید)
Remarks:			

Map Unit Name (Series and Phase): Hydeland silt loam		Drainage Class:	Very poorly		
Taxonomy (Subgroup)	Umbric Endo	aqualfs	Field Observations Confirm Mapped Type? Yes No		
Profile Description: Depth (inches) Horizon	Matrix Color <u>(Munsell Moist)</u>	Mottle Colors (<u>Munsell Moist)</u>	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc. <i>jine sandy clay loam</i> ,	
<u> </u>	7.5 YR 3/1		Fe accumulation common-med., many,	oxidized rhizospheres fine sandy clay, firm, sticky,	
<u>7-24+" Big</u>	<u>10YR 6/1</u>	<u>10 YR 6/8</u>	distinct	oxidized rhizospheres	
Hydric Soil Indicators:			an a	general de la companya de la company	
Histosol Histic Epipedon Sulfidic Odor			Concretions High Organic Content in Organic Streaking in Sa	n Surface Layer in Sandy Soils ndy Soils	
X Aquic Moisture Regime Reducing Conditions X Gleyed or Low-Chroma	and the second states of		X Listed on Local Hydric 1 Listed on National Hydric 1 X Other (Explain in Remained)	Soils List ric Soils List	
Remarks: <i>Fe accumulations in A i</i> Hydeland is a Hydric A					
WETLAND DETERMI	NATION	inte constante de la constante La constante de la constante de	a na an		
Hydrophytic Vegetation Present? Wetland Hydrology Present? Hydric Soils Present?	Yes N	io io io Is this S	Sampling Point Within a Wetlan	d? Yes No	
Remarks:					
	and a second second Second second second Second second	and and a start of the start of t The start of the start		Approved by HQUSACE 3/92	
a de la construcción de la constru La construcción de la construcción d	a a secondaria da secondari Reference da secondaria da Reference da secondaria da			and a second	

Project/Site: BISHOP ROAD MITIGATION SITE Applicant/Owner: NCDOT Investigator(s): CINDY CARR, TOM BARRETT		1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1.	Date: County: State:	·····	11/29/2001 HYDE TH CAROLINA
Do Normal Circumstances exist on the site? Is the site significantly disturbed (Atypical Situation)? Is this area a potential Problem Area? (If needed, explain on reverse)	Yes Yes Yes	No No No	Community Transect ID Plot ID:		ine cutover Q 7
VEGETATION		an a	يەت بىلىيەش ئىشتەركى بىلى خارات بىلەت. يېرىكى ئەرىكى ئېلىكى ئېلىكى	n y fama awa. Tana ara	an a
Dominant Plant Species Stratum	<u>Indicator</u>	1	Dominant Plant Species	<u>Stratum</u>	Indicator
1. Solidago altissima herb	FACU+	9.	Acer rubrum	shrub	FAC
2. <u>Arundinaria gigantea</u> herb	FACW	10	Pinus taeda	shrub	FAC
3. Persea borbonia herb	FACW	- 11.	Eupatorium capillifolium	herb	FACU
4. Liquidambar styraciflua shrub	FAC	····12. ··	Andropogon virginicus	herb	FAC-
5. <u>Rhycospera inexpansa</u> herb	FACW	13.	elemente de la construction de la c		
6. Baccharis halimifolia shrub	FAC	14.	<u> </u>		
7. Panicum verrucosum herb	FACW	15.			
8. Solidago rugosa herb	FAC	16.			and a second
Percent of Dominant Species that are OBL, FACW, or FA	C (excluding FAC	-)	>50%		۲۰۰۰ میر ۲۰۰۰ م
Remarks:					
HYDROLOGY	a na ann an t-an an a' an an a' an	e tigae a	an a	and the same second	a a grandara a
Recorded Data (Describe in Remarks) Stream, Lake, or tide Gauge Aerial Photographs Other X No Recorded Data Available			and Hydrology Indicators: Primary Indicators: Inundated Saturated in Upper Water Marks Drift Lines	12 Inches	
Field Observations: Depth of Surface Water: N/A (in.) Depth to Free Water in Pit: N/A (in.) Depth to Saturated Soil: N/A (in.)			Sediment Deposits Drainage Patterns in Secondary Indicators (2 or m X Oxidized Root Char Water-Stained Leav X Local Soil Survey D X FAC-Neutral Test Other (Explain in R	ore required): anels in Upper es Data	12 Inches
Remarks: No obvious surface hydrology features.					

Map Unit Name (Series and Phase):			Drainage Class:	Very poorly
Taxonomy (Subgroup)			Field Observations Confirm Mapped Type? Yes No	
<u>Profile Description:</u> Depth <u>(inches)</u> <u>Horizon</u>	Matrix Color (<u>Munsell Moist)</u>	Mottle Colors (<u>Munsell Moist)</u>	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
<u>0-6"</u> <u>A</u>	7.5 YR 2.5/1		annua and distinct	silty clay loam, sticky sandy clay loam, oxidized
<u> </u>	2.5 Y 7/1 2.5 Y 6/1	2.5 Y 6/8 2.5 Y 6/8	common, med., distinct	rhizospheres fine sandy clay, sitcky
		· · · · · · · · · · · · · · · · · · ·	۳. این کار	
· · · · · · · · · · · · · · · · · · ·			1997 - 1997 -	
Hydric Soil Indicators:				
Histosol Histic Epipedon Sulfidic Odor X Aquic Moisture Reg Reducing Condition X Gleyed or Low-Chro	S		Concretions High Organic Content in Organic Streaking in Sar X Listed on Local Hydric S Listed on National Hydri X Other (Explain in Rema	oils List c Soils List
Remarks: Oxidized rhizospher Hydeland is a Hydri	es in upper 12" c A soil			
WETLAND DETERN	MINATION			
Hydrophytic Vegetation Present Wetland Hydrology Present? Hydric Soils Present?	t? Yes No Yes No Yes No		Sampling Point Within a Wetlanc	1? Yes No
Remarks:				
				Approved by HQUSACE 3/92

App	ect/Site: BISHOP ROAD licant/Owner: NCDOT estigator(s): CINDY CARR, 1	MITIGATION SITE 'OM BARRETT	Date: County: State: <u>NORTH CAROLINA</u>		
Is th Is th	Normal Circumstances exist on he site significantly disturbed (A his area a potential Problem Area f needed, explain on reverse)	typical Situation)?	Yes Yes Yes	s No Transect ID: Q	
	CGETATION Dominant Plant Species	Stratum	Indicator	Dominant Plant Species Stratum Indicator	
1.	Persea borbonia	shrub	FACW	9. Dichanthelium consanguineum herb FAC	
2.	Cyrilla racemiflora	shrub	FACW	10. Smilax smallii Vine FACU	
3.	Liquidambar styraciflua	shrub	FAC	11. Rubus spp. Vine FAC	1. -
4.	Erianthus giganteus	herb	FACW	12. Quercus nigra shrub FAC	- 33 -
5.	Solidago altissima	herb	FACU+	13.	
6.	Eupatorium capillifolium	herb	FACU	14	
7.	Myrica cerifera		FAC+	15	
8.	Panicum verrucosum	herb	FACW	16.	
Perc	ent of Dominant Species that ar	e OBL, FACW, or FAC	C (excluding FAC	C-). >50	
Rem	iarks:				
National					
HY	DROLOGY		ana ang ang ang ang ang ang ang ang ang		
X	Recorded Data (Describe in Re Stream, Lake, or t Aerial Photograph Other No Recorded Data Available	ide Gauge		Wetland Hydrology Indicators: Primary Indicators: Inundated Saturated in Upper 12 Inches Water Marks Drift Lines	
	l Observations: Depth of Surface Water:	<u>N/A</u> (in.)	a a su guita gui da su da su A su su guita gui da su da s	Sediment Deposits Drainage Patterns in Wetlands Secondary Indicators (2 or more required): Oxidized Root Channels in Upper 12 Inches Water-Stained Leaves	
D	epth to Free Water in Pit:	<u>24</u> (in.)		X Local Soil Survey Data X FAC-Neutral Test	
D	epth to Saturated Soil:	<u>N/A</u> (in.)		Other (Explain in Remarks)	

Remarks: FAC Neutral Test applies

Map Unit Name (Series and Phase):	Hydeland silt loam		Drainage Class:	Very poorly
Taxonomy (Subgroup)	Umbric Endoaqualfs		Field Observations Confirm Mapped Type?	Yes No
Profile Description: Depth (inches) <u>Horizon</u>	Matrix Color (Munsell Moist)	Mottle Colors <u>(Munsell Moist)</u>	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
<u>0-5"</u> <u>A</u>	10 YR 2/1		andra and a second a Second and a second a Second and a second a	Silty clay loam
<u>5-14" Btg1</u>	<u>2.5 Y 6/2</u>	2.5 Y 6/8	common, med., distinct	silty clay
<u>14-24" Big2</u>	2.5 Y 7/2		and and a second se Second second	silty clay
and <u>and an </u>				
			an a	ana sa
		·····		
Hydric Soil Indicators:				
Histosol Histic Epipedon Sulfidic Odor X Aquic Moisture Regin X Reducing Conditions X Gleyed or Low-Chron	والمرجع والمركوب المرجع والمعاري		Concretions High Organic Content in Organic Streaking in Sa X Listed on Local Hydric S Listed on National Hydr Other (Explain in Rema	Soils List ric Soils List
Remarks: <i>Water in hole at 24"</i>				
WETLAND DETERM	INATION			
Hydrophytic Vegetation Present? Wetland Hydrology Present? Hydric Soils Present?		o	Sampling Point Within a Wetlan	d? Yes
Remarks:				
			and a second second Second second	Approved by HQUSACE 3/92

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Project/Site: BISHOP ROAD MITIGATION Applicant/Owner: NCDOT Investigator(s): CINDY CARR, TOM BARRET	د مربع بر در در این	Date: County: State:	11/29/2001 <u>HYDE</u> NORTH CAROLINA
Do Normal Circumstances exist on the site? Is the site significantly disturbed (Atypical Situati Is this area a potential Problem Area? (If needed, explain on reverse)	ion)? Yes Yes Yes	No Community No Transect ID: No Plot ID:	D: <u>Pine cutover</u> <u>Q</u> 9
VEGETATION			
Dominant Plant Species Strati	<u>ım Indicator</u>	Dominant Plant Species	Stratum Indicator
1. Erianthus gigantea herb	FACW	9. Pinus taeda	shrub FAC
2. Persea borbonia shrul	FACW	10. <u>Smilax smallii</u>	vine FACU
3. Andropogon virginicus herb	FAC-	11. Gelsemium sempervirens	vine FAC
4. <u>Dichanthelium consanguineum</u> herb	FAC	12.	
5. <u>Eleocharis tuberculosa</u> herb	FACW+	13	
6. Solidago altissima herb	FACU+	14	
7. Panicum verrucosum herb	FACW	15.	
8. Arundinaria gigantea herb	FACW	16.	
Percent of Dominant Species that are OBL, FAC	W, or FAC (excluding FAC	>50	
Remarks:	۰ ۰۰۰		
HYDROLOGY			an an ann an tha tha tha tha tha sa tha an tha an tha an tha
Recorded Data (Describe in Remarks) Stream, Lake, or tide Gauge Aerial Photographs Other X No Recorded Data Available		Wetland Hydrology Indicators: Primary Indicators: Inundated Saturated in Upper 1: Water Marks Drift Lines	
Field Observations: Depth of Surface Water: N/A (i Depth to Free Water in Pit: N/A (i)		Sediment Deposits Drainage Patterns in Secondary Indicators (2 or mo Oxidized Root Chan Water-Stained Leave X Local Soil Survey Da	re required): nels in Upper 12 Inches s
Depth to Saturated Soil: <u>N/A</u> (i		X FAC-Neutral Test Other (Explain in Re	

Remarks: No obvious surface hydrologic indicators

Map Unit Name (Series and Phase):	Hydeland si	lt loam	Drainage Class: Field Observations	Very poorly
Taxonomy (Subgroup)	Umbric Ende	paqualfs	Confirm Mapped Type	Yes No
Profile Description: Depth (inches) Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
<u> </u>	10 YR 2/1	n an an thair an	andra 1995 - State State State State State 1997 - State St	silty clay loam, sticky, fine roo
<u>8-12" B/E</u>	<u>10 YR 5/1</u>	10 YR 6/6 10 YR 7/1	few, med., faint	sandy loam, sticky
		10 YR 6/6	common, med., faint- distinct	sandy clay, sandy inclusion
		and the second second		
	<u></u>			
Hydric Soil Indicators: Histosol Histic Epipedon Sulfidic Odor X Aquic Moisture Regi Reducing Conditions X Gleyed or Low-Chron	me and a set of the se		Concretions High Organic Content Organic Streaking in S X Listed on Local Hydric Listed on National Hyd Other (Explain in Rem	Soils List ric Soils List
Remarks: Albic sandy inclusion Hydeland is a Hydric	is in B horizons are not m A soil	ottles		
WETLAND DETERM Hydrophytic Vegetation Present Wetland Hydrology Present? Hydric Soils Present?	? Yes I	No No Is this	Sampling Point Within a Wetlan	id? Yes No
				Approved by HQUSACE 3/9

BISHOP ROAD MITIGATION SITE 11/29/2001 Project/Site: Date: Applicant/Owner: NCDOT County: HYDE NORTH CAROLINA CINDY CARR, TOM BARRETT Investigator(s): State: Community ID: Do Normal Circumstances exist on the site? Ye No Pine cutover Is the site significantly disturbed (Atypical Situation)? Transect ID: 0 No Is this area a potential Problem Area? Plot ID: 10 Yes No (If needed, explain on reverse) **VEGETATION** Dominant Plant Species Indicator Dominant Plant Species <u>Stratum</u> <u>Indicator</u> Stratum Rhexia mariana herb FACW+ 9. Ilex opaca shrub FAC-1. FAC 2. Magnolia virginiana shrub FACW+ 10. Acer rubrum shrub 3. Solidago altissima herb FACU+ 11. Andropogon virginicus herb FAC-12. 4. herb FACW 5. Panicum verrucosum 13. Eupatorium capillifolium herb FACU 14. 6. 7. Rhyncospora inexpansa herb FACW 15. Liquidambar styraciflua shrub FAC 8. 16. Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-). >50 Remarks:

HYDROLOGY

Recorded Data (Describe in Remarks) Stream, Lake, or tide Gauge	Wetland Hydrology Indicators: Primary Indicators:
Aerial Photographs	Inundated
Other X No Recorded Data Available	Saturated in Upper 12 Inches
	Drift Lines
	Sediment Deposits
Field Observations:	Drainage Patterns in Wetlands Secondary Indicators (2 or more required):
Depth of Surface Water: <u>N/A</u> (in.)	Oxidized Root Channels in Upper 12 Inches
	Water-Stained Leaves
Depth to Free Water in Pit: <u>N/A</u> (in.)	X Local Soil Survey Data
	X FAC-Neutral Test
Depth to Saturated Soil: <u>N/A</u> (in.)	Other (Explain in Remarks)

Remarks: No obvious surface hydrologic indicators

(Series and Phase):	Hydeland sili	, ioum	Drainage Class: Field Observations	Very poorly	
Гахолоту (Subgroup)	Umbric Endoc	aqualfs	Confirm Mapped Type? Yes No		
Profile Description: Depth (inches) Horizon 0-8" A	Matrix Color (<u>Munsell Moist)</u> 10 YR 2/1	Mottle Colors (<u>Munsell Moist)</u>	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc. silty clay loam	
8-16" B/E	2.5 Y 7/2			sandy loam	
<u>16-24+" Btg</u>	<u>2.5 ¥ 7/2</u>	2.5 Y 6/6	common, coarse, distinc	t sandy clay loam	
				anda an	
ydric Soil Indicators: Histosol Histic Epipedon Sulfidic Odor X Aquic Moisture Regin Reducing Conditions X Gleyed or Low-Chrom	and the second		Concretions High Organic Con Organic Streaking X Listed on Local Hy Listed on National Other (Explain in	dric Soils List Hydric Soils List	
emarks: Hydeland is a Hydric	A soil				
Remarks: Hydeland is a Hydric WETLAND DETERM Hydrophytic Vegetation Present? Vetland Hydrology Present?	A soil	o	is Sampling Point Within a W	etland? Yes No	
Remarks: Hydeland is a Hydric WETLAND DETERM Hydrophytic Vegetation Present? Wetland Hydrology Present? Hydric Soils Present? Remarks:	A soil INATION Yes No Yes No	o	is Sampling Point Within a W	fetland? Yes No Approved by HQUSACE 3/	

Project/Site: BISHOP ROAD M Applicant/Owner: NCDOT Investigator(s): CINDY CARR, TOI	ta an an Ar			Date: County: State:	H	9/2001 YDE CAROLINA
Do Normal Circumstances exist on the Is the site significantly disturbed (Aty Is this area a potential Problem Area? (If needed, explain on reverse)	pical Situation)?	Yes Yes Yes	No No No	Community Transect ID: Plot ID:		cutover Q 11
VEGETATION	an an Aragon Aragon an Aragon An Aragon an Aragon a Aragon an Aragon an Ar		ning Series and Series and Series Series		ter en en det ser provense. T	
Dominant Plant Species	Stratum	Indicator	· · · · · ·	nt Plant Species	<u>Stratum</u>	Indicator
1. Eleocharis tuberculosa	herb	FACW+	9. <u>A</u>	cer rubrum	shrub	FAC
2. Panicum verrucosum	herb	FACW	10.		<u> </u>	
3. Erianthus giganteus	herb	FACW	11.			· · · · · · · · · · · · · · · · · · ·
4. Andropogon virginicus	herb	FAC-	12.	in the second		
5. Persea borbonia	shrub	FACW	13.	nt e un un versite entre un energy training		11 Aut
6. Solidago altissima	herb	FACU	14			
7. Eupatorium capillifolium	herb	FACU	15.		n an an Anna Anna An Anna Anna Anna Anna	
8. Liquidambar styraciflua	shrub	FAC	16.			
Percent of Dominant Species that are t Remarks:	OBL, FACW, or FAC	(excluding FAC		>50		
HYDROLOGY	lan en	e di di Martin Desirati Martin Desirati	n al cantona de la casa da casa de la casa d Casa de la casa de la c	a da forte de la composition de la comp Composition de la composition de la comp	ي مينيون کې د مېږينې خان د. د اينې د مېرې کې د د د اينې	
Recorded Data (Describe in Rem Stream, Lake, or tid Aerial Photographs Other X No Recorded Data Available	le Gauge		Primary I	Irology Indicators: Indicators: Inundated Saturated in Upper 1 Water Marks Drift Lines	2 Inches	
Field Observations: Depth of Surface Water: Depth to Free Water in Pit: Depth to Saturated Soil:	(in.) (in.) (in.)		<u> </u>	Sediment Deposits Drainage Patterns in ary Indicators (2 or mo Oxidized Root Chan Water-Stained Leave Local Soil Survey Da FAC-Neutral Test Other (Explain in Re	ore required): .nels in Upper 12 I es ata	nches
Remarks:						

Map Unit Name (Series and Phase): Stockade mucky sandy loam	Drainage Class: Very poorly
Taxonomy (Subgroup) Umbric Endoaqualfs	Field Observations Confirm Mapped Type? Yes No
Profile Description: Matrix Color Mottle Colors Depth Matrix Color Mottle Colors (inches) Horizon (Munsell Moist) 0-9" A 10 YR 2/1	Mottle Texture, Concretions, Abundance/Contrast Structure, etc. mucky sandy loam
Hydric Soil Indicators: Histosol Histic Epipedon Sulfidic Odor X Aquic Moisture Regime X Reducing Conditions X Gleyed or Low-Chroma Colors	Concretions High Organic Content in Surface Layer in Sandy Soils Organic Streaking in Sandy Soils X Listed on Local Hydric Soils List Listed on National Hydric Soils List Other (Explain in Remarks)
Remarks: Stockade is a Hydric A soil	
WETLAND DETERMINATION Hydrophytic Vegetation Present? Yes No Wetland Hydrology Present? Yes No Hydric Soils Present? Yes No Is this Sat	mpling Point Within a Wetland? Yes No
Remarks:	
	Approved by HQUSACE 3/92

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			a designed and the second s		
Project/Site: BISHOP ROAD MITIGATION SITE Applicant/Owner: NCDOT Investigator(s): CINDY CARR, TOM BARRETT			Date: County: State:		1/29/2001 HYDE TH CAROLINA
Do Normal Circumstances exist on the site? Is the site significantly disturbed (Atypical Situation)? Is this area a potential Problem Area? (If needed, explain on reverse)	Yes Yes Yes	No No No	Community Transect ID Plot ID:		ine cutover Q 12
VEGETATION		· · · · · ·	· · · · · · · · · · · · · · · · · · ·		
Dominant Plant Species Stratum	Indicator	Dominan	t Plant Species	<u>Stratum</u>	Indicator
1. Panicum verrucosum herb	FACW	9. <u>Pi</u>	inus taeda	shrub	FAC
2. Solidago altissima herb	FACU+	10.		· · · · · · · · · · · ·	
3. <u>Andropogon virginicus</u> herb	FAC-	11.			· · · · · · · · · · · · · · · · · · ·
4Persea borboniashrub	FACW	12.	· · · · · · · · · · · · · · · · · · ·		
5. <u>Rhycospera inexpansa</u> herb	FACW	13.	internet and inter	· · · · · · · · · · · ·	
6. Baccharis halimifolia shrub	FAC	14.	· · · · ·		
7. Erianthus giganteus herb	FACW	15.			
8. <u>Rhexia mariana</u> herb	FACW+	16.		······································	
Percent of Dominant Species that are OBL, FACW, or FAC	(excluding FAC-`). · · <u>_ · · · ·</u>	>50%	· · · ·	<u></u>
Remarks:	······································	a e e			
		· · · · ·	. · · ·		
				· .	
HYDROLOGY	e da de la composición de la composición de la composición de la		e de la composition d La composition de la c	n an	an a tao an
Recorded Data (Describe in Remarks)			ology Indicators:		
Stream, Lake, or tide Gauge Aerial Photographs	a serie de la composition de	Primary In	idicators: Inundated	en stal de la compete A	الحيدة والمتأثر بالتي الإ
Other			Saturated in Upper 1	12 Inches	
X No Recorded Data Available			Water Marks Drift Lines	an de la po	e de la servició de la
			Sediment Deposits	•	nder style son of the
Field Observations:	and a straight for		Drainage Patterns in y Indicators (2 or m		
Depth of Surface Water: <u>N/A</u> (in.)		·	Oxidized Root Chan	inels in Upper 1	2 Inches
Depth to Free Water in Pit: <u>12</u> (in.)		x	Water-Stained Leave Local Soil Survey D		
Depth to Saturated Soil: <u>N/A</u> (in.)			FAC-Neutral Test Other (Explain in Re	emarks)	
	harved however				

.

	Stockade fine sa	andy loam	Drainage Class: Field Observations	Very poorly
axonomy (Subgroup)	Umbric Endo	aqualfs	Confirm Mapped Typ	e? Yes No
rofile Description:				
Depth (inches) <u>Horizon</u>	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-4" A	10 YR 3/1		hornes Anton Antones (antones) Antones (antones)	silty clay loam
4-8" BA	10 YR 3/1	10 YR 5/2	few, medium, faint	fine sandy clay loam, stic
8-12" <u>Btg</u>	<u>7.5 YR 3/1</u>	7.5 YR 6/6	sandy inclusions	silty clay loam, sticky
· · · · ·		· · · · ·		
		· · · · · ·	nen territeri en	· · · · · · · · · · · · · · · · · · ·
، ئى يەر	· · · · · · · · · · · · · · · · · · ·	ng sa sana sa		
	<u> </u>			n an
lydric Soil Indicators:	general de la construction de la co La construction de la construction d	an a		ang kanalan di sang kanalan sang Kanalan sang kanalan
Histosol Histic Epipedon Sulfidic Odor X Aquic Moisture Regin X Reducing Conditions	a server a s		Organic Streaking in <u>x</u> Listed on Local Hydri Listed on National Hy	e Soils List drie Soils List
x Gleyed or Low-Chrom	ia Colors		Other (Explain in Re	marks)
emarks: Fine sand inclusions i	n B horizon, just above w	ater table at 12"		and a start of the second s Second second s Second second
temarks: Fine sand inclusions i WETLAND DETERM lydrophytic Vegetation Present? lydric Soils Present? lydric Soils Present?	INATION Yes N Yes N	Io Io	is Sampling Point Within a Wet	and? Yes No
WETLAND DETERM lydrophytic Vegetation Present? Vetland Hydrology Present? lydric Soils Present?	INATION Yes N Yes N	Io Io	is Sampling Point Within a Wetl	and? Yes No
WETLAND DETERM lydrophytic Vegetation Present? Vetland Hydrology Present? lydric Soils Present?	INATION Yes N Yes N	Io Io	is Sampling Point Within a Wet	and a second second Second second second Second second second Second second second Second second second Second second second Second second
WETLAND DETERM lydrophytic Vegetation Present? Vetland Hydrology Present? lydric Soils Present?	INATION Yes N Yes N	Io Io	is Sampling Point Within a Wetl	and? Yes No Approved by HQUSACE 3/

Project/Site: BISHOP ROAD MIT Applicant/Owner: NCDOT Investigator(s): CINDY CARR, TOM	1			Date: County State:	/;	1/29/2001 HYDE H CAROLINA
Do Normal Circumstances exist on the si Is the site significantly disturbed (Atypic Is this area a potential Problem Area? (If needed, explain on reverse)		Yes Yes Yes	No No No	Comm Transe Plot IE	ct ID:	ne cutover Q 13
VEGETATION				an airte anns an tha an Anns		
Dominant Plant Species	Stratum	Indicator		Dominant Plant Species	Stratum	Indicator
1. Juncus effesus	herb	FACW+	9.	Panicum verrucosum	herb	FAC+
2. Eleocharis sp.	herb	FACW+	10.	na 1997 - Angel States 1997 - Angel States		
3. <u>Dichanthelium consanguieum</u>	herb	FAC	11.	· · · · · · · · · · · · · · · · · · ·		
4. Solidago altissima	herb	FACU+	12.		· · · · · · · · · · · · · · · · · · ·	
5. Eupatorium capillifolium	herb	FACU	13.	n an	7 (1) (1) (1) (1) (1) (1) (1) (1) (1) (1)	and the second sec
6. Persea borbonia	shrub	FACW	14.	an an an an an agus a' thair. Tha an		
7. <u>Acer rubrum</u>	shrub	FAC	15.			
8. Arundinaria gigantea	herb	FACW	16.			
Percent of Dominant Species that are OB Remarks:	L, FACW, or FAC	(excluding FAC-	-).	>5	0%	
HYDROLOGY	· · · · · · · · · · · · · · · · · · ·	an an an Arran an Ar Arran an Arran an Arr		and a second	 Алтория и вображите на представите на представите на представите на представите на представите на п на представите на пред на представите на пре на представите на представите на представите на представите на представите на представите на представите на Представите на представите на представите на представите на представите на на представите на пре	na sanga gantaritang basa Talah sangang sangang sangang sangang sangang sangang sangang sangang sangang sangang Talah sangang s
Recorded Data (Describe in Remark Stream, Lake, or tide G Aerial Photographs Other X No Recorded Data Available				Water Marks Drift Lines	per 12 Inches	
Field Observations: Depth of Surface Water:	<u>N/A (</u> in.)				ns in Wetlands or more required): Channels in Upper 1	and and a second se
Depth to Free Water in Pit:	N/A_(in.)			Water-Stained 1 x Local Soil Surv x FAC-Neutral T	ey Data	
Depth to Saturated Soil:	<u>N/A</u> (in.)			Other (Explain		
Remarks: No obvious hydrologica	al indicators; howe	ever, two seconda	ry indica	tors exist.		

Faxonomy (Subgroup) Umbric Endoaqualfs Confirm Mapped Type No Profile Description: Depth Matrix Color Mottle Colors Mottle Abundance/Contrast Texture, Concretions, Structure, etc. 0-6" A 10 YR 2/1 isli loam isli loam 6-16" Big1 10 YR 7/1 10 YR 5/6 common, coarse, distinct sandy loam 16-24+" Big2 10 YR 6/1 10 YR 5/8 common, coarse, distinct sandy clay loam dxidized rhizospheres	(Series and Phase):	Stockade fine	sandy loam	Drainage Class: Field Observations	Very poorly
Depth (inches) Matrix Color (Munsell Moist) Mottle Colors (Munsell Moist) Mottle Abundance/Contrast Texture, Concretions, Structure, etc. 0-6" A 10 YR 2/1 sill loam 6-16" Big1 10 YR 7/1 10 YR 5/6 common, coarse, distinct sandy loam 16-24+" Big2 10 YR 6/1 10 YR 5/8 common, coarse, distinct sandy clay loam 16-24+" Big2 10 YR 6/1 10 YR 5/8 common, coarse, distinct sandy clay loam A trip of the first set of the first s	Taxonomy (Subgroup)	Umbric Ena	loaqualfs		e Yes No
6-16" Btg1 10 YR 7/1 10 YR 5/6 common, coarse, distinct sandy loam 16-24+" Btg2 10 YR 6/1 10 YR 5/8 common, coarse, distinct sandy clay loam oxidized rhizospheres Hydric Soil Indicators: Histosol High Organic Content in Surface Layer in Sandy Soils Sulfdie Odor Organic Streaking in Sandy Soils X Aquic Moisture Regime Listed on Local Hydric Soils List X Reducing Conditions Listed on Local Hydric Soils List X Gleyed or Low-Chroma Colors Other (Explain in Remarks) WETLAND DETERMINATION Hydric Vegetation Present? My Yes No No No No	(inches) <u>Horizon</u>	(Munsell Moist)			Structure, etc.
16-24+" Big2 10 YR 6/1 10 YR 5/8 common, coarse, distinct sandy clay loam oxidized rhizospheres oxidized rhizospheres oxidized rhizospheres Hydric Soil Indicators: Concretions Histosol High Organic Content in Surface Layer in Sandy Soi Sulfidic Odor Organic Streaking in Sandy Soils X Reducing Conditions X Reducing Conditions X Gleyed or Low-Chroma Colors Remarks: Stockade is a Hydric A soil					and the second
axidized rhizospheres Aquic Soil Indicators: Histic Epipedon Sulfidic Odor X Aquic Moisture Regime X Aquic Moisture Regime X Reducing Conditions X Gleyed or Low-Chroma Colors Stockade is a Hydric A soil WETLAND DETERMINATION Hydrophytic Vegetation Present? Yes No No No No No		· · · · · · · · · · · · · · · · · · ·			a an
Hydric Soil Indicators: Concretions Histic Epipedon High Organic Content in Surface Layer in Sandy Soils X Aquic Moisture Regime X Reducing Conditions X Reducing Conditions X Gleyed or Low-Chroma Colors Remarks: Stockade is a Hydric A soil WETLAND DETERMINATION Hydrophytic Vegetation Present? Yes No	<u>16-24+" Big2</u>	<u> </u>	10 1K 3/8		sanay ciay ioam
Histosol Concretions Histic Epipedon High Organic Content in Surface Layer in Sandy Soc Sulfidic Odor Organic Streaking in Sandy Soils X Aquic Moisture Regime X Reducing Conditions X Gleyed or Low-Chroma Colors Remarks: Stockade is a Hydric A soil WETLAND DETERMINATION Hydrophytic Vegetation Present? Yes No No No				Oxiaizea rhizospheres	
Histosol Concretions Histic Epipedon High Organic Content in Surface Layer in Sandy Soc Sulfidic Odor Organic Streaking in Sandy Soils X Aquic Moisture Regime X Reducing Conditions X Gleyed or Low-Chroma Colors Remarks: Stockade is a Hydric A soil WETLAND DETERMINATION Hydrophytic Vegetation Present? Yes No No Wetland Hydrology Present? Yes		· · · · · · · · · ·			. The second
Histosol Concretions Histic Epipedon High Organic Content in Surface Layer in Sandy So Sulfidic Odor Organic Streaking in Sandy Soils X Aquic Moisture Regime X Reducing Conditions X Gleyed or Low-Chroma Colors Remarks: Stockade is a Hydric A soil WETLAND DETERMINATION Hydrophytic Vegetation Present? Yes No No No					
Histic Epipedon High Organic Content in Surface Layer in Sandy So Sulfidic Odor Organic Streaking in Sandy Soils X Aquic Moisture Regime X Reducing Conditions X Gleyed or Low-Chroma Colors Remarks: Stockade is a Hydric A soil WETLAND DETERMINATION Hydrophytic Vegetation Present? Yes No No Wetland Hydrology Present? Yes	lydric Soil Indicators:				
WETLAND DETERMINATION Hydrophytic Vegetation Present? Yes No Wetland Hydrology Present? Yes	Histic Epipedon Sulfidic Odor <u>x</u> Aquic Moisture Regin <u>x</u> Reducing Conditions	$(x_1,x_2,\dots,x_{n-1},x_{n-1},\dots,\dots,x_{n-1},\dots,x_{n-1},\dots,x_{n-1},\dots,x_{n-1},\dots,x_{n-1},\dots,x_{n-1},\dots,x_{n-1},\dots,x_{n-1},\dots,\dots,x_{n-1},\dots,x_{n-1},\dots,x_{n-1},\dots,x_{n-1},\dots,x_{n-1},\dots,x_{n-1},\dots,\dots$		High Organic Conten Organic Streaking in X Listed on Local Hydri Listed on National Hy	Sandy Soils c Soils List dric Soils List
	Remarks: Stockade is a H WETLAND DETERM Hydrophytic Vegetation Present? Wetland Hydrology Present?	ydric A soil INATION Yes Yes	No	Sampling Point Within a Wet	
Remarks:	Remarks: Stockade is a H WETLAND DETERM Hydrophytic Vegetation Present? Wetland Hydrology Present? Hydric Soils Present?	ydric A soil INATION Yes Yes	No		
Remarks:	Remarks: Stockade is a H WETLAND DETERM Hydrophytic Vegetation Present? Wetland Hydrology Present? Hydric Soils Present?	ydric A soil INATION Yes Yes	No		
Remarks:	Remarks: Stockade is a H WETLAND DETERM Hydrophytic Vegetation Present? Wetland Hydrology Present? Hydric Soils Present?	ydric A soil INATION Yes Yes	No		
Remarks: Approved by HQUSACE 3/	Remarks: Stockade is a H WETLAND DETERM Hydrophytic Vegetation Present? Wetland Hydrology Present? Hydric Soils Present?	ydric A soil INATION Yes Yes	No No Is this		and? Yes No
Approved by HQUSACE 3/	Remarks: Stockade is a H WETLAND DETERM Hydrophytic Vegetation Present? Wetland Hydrology Present? Hydric Soils Present?	ydric A soil INATION Yes Yes	No No Is this		and? Yes No
그는 것 같아요. 이렇게 잘 하는 것 같아요. 이렇게 잘 하는 것 같아요. 나는 것 같아요. 아무지 않는 것 같아요. 아무지 않는 것 같아요. 나는 것 같아요. 아무지 않는 것 같아요. 아무지 않는 것 같아요. 나는 것 같아요. 아무지 않는 것 않는	Remarks: Stockade is a H WETLAND DETERM Hydrophytic Vegetation Present? Wetland Hydrology Present? Hydric Soils Present?	ydric A soil INATION Yes Yes	No No Is this		and? Yes No

Project/Site: BISHOP ROAD MITIGATION SITE Applicant/Owner: NCDOT Investigator(s): CINDY CARR, TOM BARRETT	n an	tan araa ahaa ahaa ahaa ahaa ahaa ahaa ah	Date: County: State:	11/29/2001 HYDE NORTH CAROLINA
Do Normal Circumstances exist on the site? Is the site significantly disturbed (Atypical Situation)? Is this area a potential Problem Area? (If needed, explain on reverse)	Yes Yes Yes	No	Community II Transect ID: Plot ID:	D: Pine cutover R 1
VEGETATION	ې د د د د به ۲	tan tana kana kana sa		a and a second secon
Dominant Plant Species Stratum	Indicator	<u>Dominan</u>	t Plant Species	Stratum Indicator
1. Persea borbonia shrub	FACW	9. <u>Rhex</u>	cia marianna	herb FACW+
2. <u>Rhycospera inexpansa</u> herb	FACW	10	······································	
3. Solidago altissima herb	FACU	11.		
4. Panicum verrucosum herb	FAC+	12.	<u></u>	
5. <u>Acer rubrum</u>	FAC	13.	nativa na provinsi na provi Provinsi na provinsi na prov	an an an an an Arban an an Arban an Arb
6. Eupatorium capillifolium herb	FACU	14.	·	
7. Solidago microcephala herb	UPL	15.		
8. <u>Andropogon virginicus</u> herb	FAC-	16.		
Percent of Dominant Species that are OBL, FACW, or FAC	(excluding FAC		>50%	n an
Remarks:	· · · · · · · · · · · · · · · · · · ·			
HYDROLOGY	Alexandro de la composición de la composicinde la composición de la composición de la composición de l	n an an search ann an search an	ing on the integration of the transformer of the second second second second second second second second second	and a second s
Recorded Data (Describe in Remarks) Stream, Lake, or tide Gauge Aerial Photographs Other X No Recorded Data Available		Primary In	ology Indicators: ndicators: Inundated Saturated in Upper 12 Water Marks Drift Lines	Inches
Field Observations:		Secondar	Sediment Deposits Dräinage Patterns in W y Indicators (2 or more	e required):
Depth of Surface Water: <u>N/A</u> (in.)			Oxidized Root Channe Water-Stained Leaves	
Depth to Free Water in Pit: <u>N/A</u> (in.)			Local Soil Survey Data FAC-Neutral Test	3
Depth to Saturated Soil: <u>N/A</u> (in.)			Other (Explain in Rem	arks)
Remarks: No obvious hydrological indicators.	n and a second s		5	

Remarks:

Map Unit Name (Series and Phase):	Fork fine so		Drainage Class: Field Observations	Somewhat poorly Yest No
Taxonomy (Subgroup)	Aeric Endo	aquays	Confirm Mapped Type?	Yes
Profile Description: Depth (inches) Horizon	Matrix Color (Munsell Moist) 10 YR 3/1	Mottle Colors (<u>Munsell Moist)</u>	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc. fine sandy loam
<u>6-8"</u> <u>BA</u>	10 YR 4/2		oxidized rhizospheres	fine sandy loam
<u>8-16" Bt</u>	2.5 Y 6/4	10 YR 5/8	common, coarse, distinct	sandy clay loam, sticky
<u>16-24+" Big</u>	10 YR 6/1	10 YR 6/8	common, coarse, distinct	sandy clay loam, sticky
n and a second secon	· · · · ·	ana ang ang ang ang ang ang ang ang ang		
	· · · · · · · · · · ·	·		
Hydric Soil Indicators: Histosol	a a construction de la construcción de la construcción de la construcción de la construcción de la construcción La construcción de la construcción d La construcción de la construcción d		Concretions	
Histic Epipedon Sulfidic Odor	andar A garage and a second secon			Surface Layer in Sandy Soils
x Aquic Moisture Re Reducing Conditio	ns i li l		Listed on Local Hydric S Listed on National Hydri Other (Explain in Rema	Soils List ic Soils List
Remarks: Fork is a hy	dric B soil.			
· · ·				a da anti-anti-anti-anti-anti-anti-anti- anti-anti-anti-anti-anti-anti-anti- anti-anti-anti-anti-anti-anti-anti-anti-
	an a			andra († 1997) 1940 - Stan Stan Stan Stan 1940 - Stan Stan Stan Stan Stan Stan Stan Stan
WETLAND DETER	MINATION	waa chaasa dhalada dha Milada dhalada d Milada dhalada d		

Hydrophytic Vegetation Present?	Yes No	
Wetland Hydrology Present?	Yes No	
Hydric Soils Present?	Yes No	Is this Sampling Point Within a Wetland? Yes No
a de la companya de l		
	en en tradaction de la companya	

Approved by HQUSACE 3/92

Project/Site: BISHOP ROAD MITIGA Applicant/Owner: NCDOT Investigator(s): CINDY CARR, MARTHA	ATION SITE A BREWSTER, HAROLD I	BRADY, TOM BAR	Date: County: RETT State:	11/29/2001 HYDE NORTH CAROLINA	
Do Normal Circumstances exist on the site? Is the site significantly disturbed (Atypical S Is this area a potential Problem Area? (If needed, explain on reverse)		Yes No Yes No Yes No	Communit Transect I Plot ID:	-	
VEGETATION	· · · · · · · · · · · · · · · · · · ·			a an an an ann an Arland. An Arland an Ar	
Dominant Plant Species	Stratum Indicat	or Dc	minant Plant Species	Stratum Indicator	
1. <u>Eupatorium capillifolium</u>	herb FACU	<u>7</u> 9. <u> </u>	Cyperus sp.	herb OBL	
2. Andropogon virginicus	herb FAC-	10		· · · · · · · · · · · · · · · · · · ·	·. ·
3Solidago microcephala	herb UPL	<u> </u>			
4. Rhynchospora inexpansa	herb FACW	/ 12.	and the second second		
5. <u>Hydrocotyle sp.</u>	herb FACW	7 13. c	and and a second se Second second second Second second		
6. Solidago rugosa	herb FAC	14		· · · · · · · · · · · · · · · · · · ·	. , .
7. Pinus taeda	shrub FAC	15			
8. Myrica cerifera	shrub FAC+	16.			2
			·		
Percent of Dominant Species that are OBL, Remarks:	FACW, or FAC (excludin	ıg FAC-).	>50%		
Remarks:	FACW, or FAC (excludin	ıg FAC-).	>50%		
Remarks:	ge <u>A</u> (in.) <u>1</u> (in.)	Wetlan Prin	d Hydrology Indicators: mary Indicators: Inundated Saturated in Upper Water Marks Drift Lines Sediment Deposits Drainage Patterns iccondary Indicators (2 or n Oxidized Root Cha Water-Stained Lea X Local Soil Survey X FAC-Neutral Test	in Wetlands more required): annels in Upper 12 Inches ves Data	
Remarks: Recorded Data (Describe in Remarks) Stream, Lake, or tide Gaug Aerial Photographs Other X No Recorded Data Available Field Observations: Depth of Surface Water: N// Depth to Free Water in Pit: 21 Depth to Saturated Soil: N//	ge <u>'A_</u> (in.)	Wetlan Prin	d Hydrology Indicators: mary Indicators: Inundated Saturated in Upper Water Marks Drift Lines Sediment Deposits Drainage Patterns condary Indicators (2 or 1 Oxidized Root Cha Water-Stained Lea X Local Soil Survey	in Wetlands more required): annels in Upper 12 Inches ves Data	

Map Unit Name (Series and Phase):	Chapanoke	silt loam	Drainage Class:	Somewhat poorly
Taxonomy (Subgroup)	Aeric Ende	oaquults	Field Observations Confirm Mapped Typ	e ² Yes No
Profile Description: Depth (inches) Horizon	Matrix Color (Munsell Moist)	Mottle Colors (<u>Munsell Moist)</u>	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
<u>0-6"</u> <u>A</u>	10 YR 3/1	5 YR 3/4	Fe layers	Sandy loam
<u>6-16"</u> <u>Bt</u>	<u>2.5 Y 7/3</u>			sandy loam
<u>16-24+" Btg</u>	2.5 Y 7/1	<u>10 YR 6/8</u>	<u>common, coarse, distinct</u>	sandy clay loam oxidized rhizospheres
······································				
Hydric Soil Indicators: Histosol Histic Epipedon Sulfidic Odor X Aquic Moisture Reg X Reducing Condition X Gleyed or Low-Chro	ns		Concretions High Organic Content Organic Streaking in 3 Listed on Local Hydri Listed on National Hy Other (Explain in Red	ic Soils List /dric Soils List
Rémarks: Chapanoke is a Hyd	tric B soil			
WETLAND DETER	MINATION		personale state in a second	
Hydrophytic Vegetation Preser Wetland Hydrology Present? Hydric Soils Present?	Yes	No No No Is 1	this Sampling Point Within a Wetl	and? Yes No
Remarks:				
				Approved by HQUSACE 3/92

Project/Site: BISHOP ROAD MITIGATION SITE Applicant/Owner: NCDOT Investigator(s): CINDY CARR, TOM BARRETT			Date: County: State:	11/29/2001 HYDE NORTH CAROLINA
Do Normal Circumstances exist on the site? Is the site significantly disturbed (Atypical Situation)? Is this area a potential Problem Area? (If needed, explain on reverse)	Yes Yes Yes	No No No	Community ID: Transect ID: Plot ID:	Pine cutover R 3
VEGETATION	· · · · · · · · · · · · · · · · · · ·			· · · · · · · · · · · · · · · · · · ·
Dominant Plant Species Stratum	Indicator	Dominant Plant	Species Strat	tum Indicator
1. <u>Acer rubrum</u> shrub	FAC	9. Solidago al	tissima hei	rbFACU+
2. Persea borbonia	FACW	10. Panicum verr	rocosum hei	rb FACW
3. Liquidambar styraciflua shrub	FAC	11. Rhynchospora	inexpansa her	rb FACW
4. <u>Baccharis halimifolia</u> shrub	FAC	12.		
5. <u>Myrica cerifera</u> shrub	FAC+	13 <u>.</u>		
6. Smilax smallii vine	FACU	14.	·	· · · · · · · · · · · · · · · · · · ·
7. <u>Quercus nigra</u> shrub	FAC	15.	·	
8. Rubus spp. vine	FAC	16.	<u> </u>	
Percent of Dominant Species that are OBL, FACW, or FAC	(excluding FAC).	>50	anti di anti anti anti anti anti anti anti ant
Remarks:	· · · · · ·		a par a sa kara	
an a				
HYDROLOGY	No. Solar States	an an an tha an	a da star se	araanaan Dooran ahaan ahaan Dooran ahaan ah
Recorded Data (Describe in Remarks)		Wetland Hydrology	Indicators:	n Anna an an Anna Anna Anna
Stream, Lake, or tide Gauge Aerial Photographs		Primary Indicato	rs: ated	Version and the second seco
Other X No Recorded Data Available			ted in Upper 12 Inch Marks .ines	ies and the contract of a spectrum of the spec
Field Observations:		Sedimo	ent Deposits age Patterns in Wetla	
Depth of Surface Water: <u>N/A</u> (in.)		<u>X</u> Oxidiz	cators (2 or more req red Root Channels in	
Depth to Free Water in Pit: <u>N/A</u> (in.)		X Local S	Stained Leaves Soil Survey Data	
Depth to Saturated Soil: <u>N/A</u> (in.)			Veutral Test (Explain in Remarks) .
Remarks: No obvious surface indicators; however, more the	an two secondar	indicators exist.	· · · · · · · · · · · · · · · · · · ·	······

Map Unit Name (Series and Phase):	Series and Phase): Acredale silt loam		Drainage Class:	Poorly
Taxonomy (Subgroup)			Field Observations Confirm Mapped Type? Ye	es No
Profile Description: Depth (inches) Horizon 0-4" 4-8" BA 8-24+"	Matrix Color (Munsell Moist) 7.5 YR 3/1 10 YR 6/3 2.5 Y 7/6	Mottle Colors (<u>Munsell Moist</u>) 5 YR 3/4 7.5 YR 7/8 10 YR 5/8	Mottle Abundance/Contrast common, med., distinct Fe concentrations 	Texture, Concretions, Structure, etc. silt loam sandy loam sandy loam
Hydric Soil Indicators: Histosol Histic Epipedon Sulfidic Odor X Aquic Moisture Reg Reducing Condition Gleyed or Low-Chro	S. S		X Concretions High Organic Content in Surf Organic Streaking in Sandy S Listed on Local Hydric Soils Listed on National Hydric So Other (Explain in Remarks)	oils List ils List
Remarks: Acredale is a Hydric Oxidized root chann				
WETLAND DETERM	MINATION	ang		
Hydrophytic Vegetation Presen Wetland Hydrology Present? Hydric Soils Present?	t? Yes Yes	No No No Is this	Sampling Point Within a Wetland?	Yes No
Remarks:				
			Аррл	oved by HQUSACE 3/92

				and an and a second		
Project/Site: BISHOP ROAD MIT Applicant/Owner: NCDOT Investigator(s): CINDY CARR, TOM	•			Date: County: State:	11/29/ HYI NORTH CA	DE .
Do Normal Circumstances exist on the s Is the site significantly disturbed (Atypic Is this area a potential Problem Area? (If needed, explain on reverse)		Yes Yes Yes	No No No	Community I Transect ID: Plot ID:	D: Pine cu R 4	
VEGETATION		ر المربية الفراحية (1990) 1970 - مربية 1970 - مربية	i satur i i i i i i i i i i i i i i i i i i i			
Dominant Plant Species	<u>Stratum</u>	Indicator	Domina	nt Plant Species	Stratum 1	ndicator
1. Liquidambar styraciflua	shrub	FAC	9.	Rubus spp.	shrub	FAC
2. Myrica cerifera	shrub	FAC+	10.	<u> </u>		
3. Arundinaria gigantea	herb	FACW	···11: ····	an a		1. 1. 1. 1.
4. Rhyncospora inexpansa	herb	FACW	12.	and the second		
5. Eupatorium capillifolium	herb	FACU	13.	n an an Aguna an Arabana Aguna an Arabana	n han an an an an har ann an	na series de la composition Notation
6. Andropogon virginiana	herb	FAC-	14.			•
7. Solidago altissima	herb	FACU+	15.			1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
8. Smilax laurifolia	vine	FACW+	16.			
0. Dimitar Maryona		11001	10.	······		
Percent of Dominant Species that are OF	BL, FACW, or FA	C (excluding FAC)	>50%	<u> </u>	
Remarks:					· · · · · · · · · · · · · · · · · · ·	
Kemaiks:			· .			
HYDROLOGY		and and a second se Second second second Second second	an an an an Africana. An	an a	n an an ghairte an	e de l'appendence. Transforme
Recorded Data (Describe in Remark				irology Indicators:		
Stream, Lake, or tide C	auge	na na sana na sana na sana na sana sa sana sa	. rnmary	Indicators: Inundated	lan ay Isy ay j	
Other X No Recorded Data Available	анананан Алананан		ya wa Martin	Saturated in Upper 12 Water Marks	Inches	ensing (
				Drift Lines Sediment Deposits		an an tha an an tha an an tha an an tha an t
Field Observations:				Drainage Patterns in V	Wetlands	
Depth of Surface Water:	<u>N/A (in.)</u>		Second	ary Indicators (2 or mor Oxidized Root Chann	els in Upper 12 Inc	hes
Depth to Free Water in Pit:	<u>N/A</u> (in.)		· · · · · · · · · · · · · · · · · · ·	Water-Stained Leaves Local Soil Survey Dat		
Depth to Saturated Soil:	<u>N/A</u> (in.)		<u> </u>	FAC-Neutral Test Other (Explain in Rer	narks)	
Remarks: No obvious surface indicator.	5	.				

Map Unit Name (Series and Phase):	Chapanoke s	ilt loam	Drainage Class:	Somewhat poorly
Taxonomy (Subgroup)	Aeric Endoaquults		Field Observations Confirm Mapped Type	Yes No
Profile Description: Depth (inches) Horizon 0-2 A	Matrix Color (Munsell Moist) 10 YR 2/1	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast Fe conc. Common,	Texture, Concretions, Structure, etc. Silt loam
<u> </u>	10 YR 4/2	5 YR 3/4	medium distinct	Silty clay loam
<u>4-15"</u> <u>B</u> <u>15-24"</u> <u>Bt</u>	<u>2.5 Y 7/4</u> <u>2.5 Y 6/8</u>	<u>2.5 ¥ 6/1</u>	common, coarse, distinct	Sandy loam Sandy clay loam
Hydric Soil Indicators:				n an an Arrange An Arrange an Arrange An Arrange an Arrange an Arrange
Histosol Histic Epipedon Sulfidic Odor X Aquic Moisture Regi Reducing Conditions X Gleyed or Low-Chron	and the second sec		Concretions High Organic Content i Organic Streaking in Sa Listed on Local Hydric Listed on National Hyd Other (Explain in Rem	Soils List ric Soils List
Remarks: Chapanoke is	a Hydric B soil.			
WETLAND DETERM	IINATION	en ander an en en en en er en er		
Hydrophytic Vegetation Present Wetland Hydrology Present? Hydric Soils Present?	Yes	No No Is this	Sampling Point Within a Wetlan	nd? Yes No
Remarks:				

Approved by HQUSACE 3/92

Project/Site: BISHOP ROAD MITIGATIC Applicant/Owner: NCDOT Investigator(s): CINDY CARR, TOM BARRI			Date: County: State:	11/29/2001 HYDE NORTH CAROLINA
Do Normal Circumstances exist on the site? Is the site significantly disturbed (Atypical Situa Is this area a potential Problem Area? (If needed, explain on reverse)	ation)? Yes Yes	No	Community ID: Transect ID: Plot ID:	Pine cutover R 5
VEGETATION	and the second			
Dominant Plant Species Stra	<u>itum Indicator</u>	Dominant P	lant Species Strat	um Indicator
1. Eupatorium capillifolium her	rb FACU	9. <u>Pani</u>	cum sp. her	b FACW
2. Solidago altissima her	rb FACU+	10. <u>Persea</u>	borbonia shri	ub FACW
3. Andropogon virginiana her	rb FAC-	11. Rhyncospo	ora inexpansa her	b FACW
4. Baccharis halimifolia her	rb	- 12		
5. Quercus rubra shr	ub FAC	13	<u> </u>	
6. <u>Myrica cerifera</u> her	rb FACU	14		
7. <u>Pteridium aquilinium</u> her	-b FACU	15	:	
8. <u>Rubus spp.</u> shr	ub FAC	16.	· · · · · · · · · · · · · · · · · · ·	
Percent of Dominant Species that are OBL, FAC	CW, or FAC (excluding FAC	C-)	>50%	
Remarks:				
HYDROLOGY	n an	un an	1.1111.111.111.111.1111.1111.1111.1111.1111	en en tel an en
Recorded Data (Describe in Remarks) Stream, Lake, or tide Gauge Aerial Photographs Other				an
X No Recorded Data Available		W	ater Marks iff Lines	on an an an tao an
Field Observations:	Security and states of the second		diment Deposits ainage Patterns in Wetlan Indicators (2 or more requ	
Depth of Surface Water: <u>N/A</u>	(in.)	Ox	didized Root Channels in ater-Stained Leaves	
Depth to Free Water in Pit: <u>N/A</u>	(in.)		cal Soil Survey Data C-Neutral Test	
Depth to Saturated Soil: <u>N/A</u>	(in.)		her (Explain in Remarks))
		a service a service of the service o	an a	

Remarks: No obvious surface indicators; however, two secondary indicators exist.

Map Unit Name (Series and Phase):	Acredale sil	lt loam	Drainage Class: <u>Poorly</u> Field Observations		
Taxonomy (Subgroup)	Typic Endoaqualfs		Confirm Mapped Types No		
<u>Profile Description:</u> Depth <u>(inches)</u> <u>Horizon</u>	Matrix Color (<u>Munsell Moist)</u>	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.	
<u> </u>	10 YR 3/1	7.5 YR 4/8	common, med., distinct Fe conc.	Silt loam	
<u>6-12" B</u>	2.5 Y 7/6	2.5 ¥ 5/6	few, medium, faint	Sandy loam	
<u>12-24+ Btg</u>	2.5 Y 6/1	10 YR 5/8	common, coarse, distinct	Sandy clay loam	
· · · · · · · · · · · · · · · · · · ·	a a second a second				
=			· · · · · · · · · · · · · · · · · · ·		
Hydric Soil Indicators:	n an	n an			
Histosol Histic Epipedon Sulfidic Odor Aquic Moisture Regin Reducing Conditions <u>x</u> Gleyed or Low-Chror	a de la companya de l		Concretions High Organic Content in S Organic Streaking in Sand Listed on Local Hydric So Listed on National Hydric Other (Explain in Remark	ils List Soils List	
Remarks: Acredale is a P	nydric A soil				
an a	and and a second se		a da ang ang ang ang ang ang ang ang ang an	an a	
WETLAND DETERM	IINATION	e de la composition d La composition de la c La composition de la c			
Hydrophytic Vegetation Present? Wetland Hydrology Present? Hydric Soils Present?	Yes N	No No Is this	Sampling Point Within a Wetland?	Yes No	
Remarks:	an an Araba an Araba an Araba. 1947 - Araba Araba an Araba, an Araba 1947 - Araba Araba, an Araba, an Araba. 1948 - Araba Araba, an Araba, an Araba.				

Approved by HQUSACE 3/92

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Project/Site:BISHOP ROAD MITIGATION SITEApplicant/Owner:NCDOTInvestigator(s):MARTHA BREWSTER, HAROLD BRAILDo Normal Circumstances exist on the site?Is the site significantly disturbed (Atypical Situation)?Is this area a potential Problem Area?(If needed, explain on reverse)	DY Yes Yes Yes	No No No	Date: County: State: Community ID: Transect ID: Plot ID:	11/29/2001 HYDE NORTH CAROLINA Pine cutover R 6
VEGETATION				
Dominant Plant Species Stratum	Indicator	<u>Dominan</u>	t Plant Species St	ratum Indicator
1. Panicum verrucosum herb	FACW	9. <u> </u>	Rhexia sp. h	erb FACW
2. Baccharis halimifolia shrub	FAC	10	e di mana an in sin	
3. Solidago altissima herb	FACU+	11.		
4. <u>Eupatorium capillifolium</u> herb	FACU			e a construction de la construcción
5. <u>Rhyncospora inexpansa</u> <u>herb</u>	FACW	13.		
6. Rhyncospora fascicularis herb	FACW+	14.	· · · · · · · · · · · · · · · · · · ·	· · · · · · · · · · · · · · · · · · ·
7. Chasmanthium laxum herb	FACW-	15.		
8. <u>Eleocharis sp.</u> herb	FACW	16.		
Percent of Dominant Species that are OBL, FACW, or FAC Remarks:	C (excluding FAC) .	>50%	
HYDROLOGY		a a baar iyo waxaa waxaa a	a da anti- na anti-anti-anti-anti-anti-anti-anti- na anti-anti-anti-anti-anti-anti-anti-anti-	
Recorded Data (Describe in Remarks)		Primary In	rology Indicators: Inundated Saturated in Upper 12 In Water Marks Drift Lines Sediment Deposits Drainage Patterns in Wei ry Indicators (2 or more r Oxidized Root Channels Water-Stained Leaves Local Soil Survey Data FAC-Neutral Test Other (Explain in Remar	tlands equired): in Upper 12 Inches
Remarks: Some oxidized root channels in Btg1.				

Map Unit Name (Series and Phase):	Iap Unit Name Series and Phase): Hydeland silt loam		Drainage Class: Very poorly		
Taxonomy (Subgroup)	Umbric Ena	loaqualfs	Field Observations Confirm Mapped Type: Ye	s No	
Profile Description: Depth (inches) Horizon	Matrix Color (<u>Munsell Moist)</u>	Mottle Colors (<u>Munsell Moist)</u>	Mottle T Abundance/Contrast	exture, Concretions, Structure, etc. Organic	
<u>1-7" A</u>	7.5 YR 3/1		land and a state of the state o	Organic silty loam	
7-15" Btg1	7.5 YR 5/1	10 YR 4/3	common, fine, distinct F	ine sandy clay loam	
<u>15-24+ Btg2</u>	7.5 YR 7/1	7.5 YR 7/8	common, medium, distinct	Fine sandy clay	
· · · · · · · · · · · · · · · · · · ·					
Hydric Soil Indicators: Histosol Histic Epipedon Sulfidic Odor X Aquic Moisture Regin X Reducing Conditions X Gleyed or Low-Chrom Remarks: Hydeland is a l	en en la superior de pre-	l at 15 inches.	Concretions High Organic Content in Surfa Organic Streaking in Sandy So x Listed on Local Hydric Soils I Listed on National Hydric Soil Other (Explain in Remarks)	oils .ist	
WETLAND DETERM Hydrophytic Vegetation Present? Wetland Hydrology Present? Hydric Soils Present?	Yes Yes	No No No	Sampling Point Within a Wetland?	Yes	
Remarks:					
			Appro	ved by HQUSACE 3/92	

Project/Site:BISHOP ROAD MITIGATION SITEApplicant/Owner:NCDOTInvestigator(s):MARTHA BREWSTER, HAROLD BRADo Normal Circumstances exist on the site?Is the site significantly disturbed (Atypical Situation)?Is this area a potential Problem Area?(If needed, explain on reverse)	DY Yes Yes Yes	No No No	Date: County: State: Community Transect ID: Plot ID:	11/29/2001 HYDE NORTH CAROLINA ID: Pine cutover R 7
VEGETATION		54		
Dominant Plant Species Stratum	Indicator		Dominant Plant Species	Stratum Indicator
1. Panicum verrucosum herb	FACW	· 9.	Chasmanthium laxum	herb FACW-
2. <u>Baccharis halimifolia</u> shrub	FAC	10.	Myrica cerifera	shrub FAC+
3. Solidago altissima herb	FACU+	··· 11.	Smilax bona-nox	vine FAC
4. <u>Eupatorium capillifolium</u> herb	FACU	12.	Pinus taeda	shrub FAC
5. <u>Rhyncospora inexpansa</u> herb	FACW	13.	Eleocharis sp.	herb FACW
6. Juncus effusus herb	FACW+	14.	· .	
7. Erechtites hieracifolia herb	FAC-	15.		
8. <u>Pteridium aquilinum herb</u>	FACU	16.		
Percent of Dominant Species that are OBL, FACW, or FAC	C (excluding FAC	-). · ·	>50%	
Remarks:		* .		
HYDROLOGY	an an that an	99 - 1 A - 1		an a shekara a shekara ya
Recorded Data (Describe in Remarks) Stream, Lake, or tide Gauge Aerial Photographs Other X No Recorded Data Available Field Observations: Depth of Surface Water: N/A (in.) Depth to Free Water in Pit: 20 (in.) Depth to Saturated Soil: 13 (in.)			Iand Hydrology Indicators: Primary Indicators: Inundated Saturated in Upper 1: Water Marks Drift Lines Sediment Deposits Drainage Patterns in Secondary Indicators (2 or moder) X Oxidized Root Channel Water-Stained Leave X Local Soil Survey Da X FAC-Neutral Test Other (Explain in Rest)	Wetlands ore required): nels in Upper 12 Inches s ita
Remarks: Some oxidized root channels in Btg1.	_			······

Map Unit Name (Series and Phase):	Acredale silt l	loam	Drainage Class:	Poorly
Taxonomy (Subgroup)	Typic Endoaqualfs		Field Observations Confirm Mapped Type?	Yes No.
Profile Description: Depth (inches) Horizon 0-1 04	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc. Organic
<u> </u>	2.5 YR 4/1	· · · · · · · · · · · · · · · · · · ·		Fine sandy loam
<u>7-13" Btg1</u>	10 YR 7/3	10 YR 6/8	few, faint, fine	Fine sandy clay loam
<u>13-24+</u> <u>Btg2</u>	10 YR 7/2	7.5 YR 7/8	common, coarse, distinct	Fine sandy clay
		7.5 YR 6/1	common, coarse, distinct	
Hydric Soil Indicators: Histosol Histic Epipedon Sulfidic Odor x Aquic Moisture Reg x Reducing Conditions x Gleyed or Low-Chro	S S S S S S S S S S S S S S S S S S S		Concretions High Organic Content in Organic Streaking in Sar X Listed on Local Hydric S Listed on National Hydri Other (Explain in Rema	soils List ic Soils List
Remarks: <i>Acredale is a</i>	Hydric A soil. Saturated at	15 inches.		
WETLAND DETERN	AINATION	· · · ·		
Hydrophytic Vegetation Present Wetland Hydrology Present? Hydric Soils Present?	Yes No Yes No		Sampling Point Within a Wetland	1? Yes No
Remarks:				

Approved by HQUSACE 3/92

 Project/Site: BISHOP ROAD MITIGATION SITE Applicant/Owner: NCDOT Investigator(s): CINDY CARR, TOM BARRETT Do Normal Circumstances exist on the site? Is the site significantly disturbed (Atypical Situation)? Is this area a potential Problem Area? (If needed, explain on reverse) 	Yes Yes	Date:11/29/2001County:HYDEState:NORTH CAROLINANoCommunity ID:NoTransect ID:NoPlot ID:1
VEGETATION		an a
Dominant Plant Species Stratum I	Indicator	Dominant Plant Species Stratum Indicator
1. Panicum verrucosum herb	FACW	9. Andropogon virginicus herb FAC-
2. Baccharis halimifolia shrub	FAC	10. Pinus taeda shrub FAC
3. Hydrocotyle sp. herb	FACW	11. <u>11.</u>
4. Eupatorium capillifolium herb	FACU	12: <u>12: 12: 12: 12: 12: 12: 12: 12: 12: 12: </u>
5. <u>Rhyncospora inexpansa</u> herb 1	FACW	13.
6. Cladium jamaicense herb	OBL	14.
7. Polygonum sp. herb	FAC	15.
8. <u>Rubus spp. shrub</u>	FAC	16.
Percent of Dominant Species that are OBL, FACW, or FAC (ex	cluding FAC-).	-) ->50
Remarks:		
HYDROLOGY	ang ter syntan a s	
Recorded Data (Describe in Remarks) Stream, Lake, or tide Gauge Aerial Photographs Other		Wetland Hydrology Indicators: Primary Indicators: Inundated Saturated in Upper 12 Inches
X No Recorded Data Available		Water Marks
Field Observations: Depth of Surface Water: N/A (in.) Depth to Free Water in Pit: 20 (in.) Depth to Saturated Soil: N/A (in.)		Sediment Deposits Drainage Patterns in Wetlands Secondary Indicators (2 or more required): Oxidized Root Channels in Upper 12 Inches Water-Stained Leaves X Local Soil Survey Data X FAC-Neutral Test X Other (Explain in Remarks)
	· · ·	

Remarks: Very close proximity to marsh.

Hydric Soils Present?

Remarks:

Map Unit Name (Series and Phase):	Acredale si	lt loam	Drainage Class:	Poorly
Taxonomy (Subgroup)	Typic Endo	aqualfs	Field Observations Confirm Mapped Type?	Yes No
Profile Description: Depth (inches) Horizon	Matrix Color (<u>Munsell Moist)</u>	Mottle Colors <u>(Munsell Moist)</u>	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
<u>0-6"</u> <u>A</u>	<u>10 YR 3/1</u>		na da ser en en anter de la composición de la composición de la composición de la composición de la composición En esta de la composición de la composic	silt loam
<u>6-12"</u> <u>B</u> 12-24+ <u>Btg</u>	2.5 Y 7/3 10 YR 6/1	10 YR 5/8	common, med., distinct	sandy loam Fine sandy clay
<u>12-24+</u> Dig		10118.58	common, mea., aistaice	T me sundy citay
		· · · · · · · · · · · ·	······································	· · · · · · · · · · · · · · · · · · ·
Hydric Soil Indicators: Histosol X Sulfidic Odor X Aquic Moisture I X Reducing Condit X Gleyed or Low-C	ions		Concretions High Organic Content in Organic Streaking in Sar Listed on Local Hydric S Listed on National Hydri Other (Explain in Rema	oils List ic Soils List
Remarks: Acredale	is a Hydric A soil.			
WETLAND DETE	RMINATION		An	
Hydrophytic Vegetation Pre Wetland Hydrology Present		No		

Yes

11.751

No

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Yes

No

Is this Sampling Point Within a Wetland?

Project/Site: BISHOP ROAD MITIGATION SITE Applicant/Owner: NCDOT Investigator(s): CINDY CARR, TOM BARRETT	Date:11/29/2001County:HYDEState:NORTH CAROLINA
Do Normal Circumstances exist on the site? Is the site significantly disturbed (Atypical Situation)? Is this area a potential Problem Area? (If needed, explain on reverse)	es No Community ID: Pine cutover es No Transect ID: S res No Plot ID: 2
VEGETATION	
Dominant Plant Species Stratum Indicator	Dominant Plant Species Stratum Indicator
1. Persea borbonia shrub FACW	9. Andropogon virginicus herb FAC-
2. <u>Baccharis halimifolia</u> shrub FAC	10. Pinus taeda shrub FAC
3. Hydrocotyle sp. herb FACW	11. Chasmanthium laxum herb FACW-
4. Eupatorium capillifolium herb FACU	12. Arundinaria gigantea herb FACW
5. Liquidambar styraciflua shrub FAC	13. Carex sp. herb FAC
6. Acer rubrum shrub FAC	14. Smilax sp. herb FAC
7. Myrica cerifera shrub FAC+	15.
8. Solidago altissima herb FACU	16. <u></u>
Percent of Dominant Species that are OBL, FACW, or FAC (excluding F.	AC-). >50
e e de la serie de la composition de la serie de la Esta de la serie de la ser ie La serie de la s	and a second second Second second
HYDROLOGY Recorded Data (Describe in Remarks)	Wetland Hydrology Indicators:
Stream, Lake, or tide Gauge	Primary Indicators: Inundated
Other X No Recorded Data Available	Saturated in Upper 12 Inches Water Marks Drift Lines
Field Observations:	Sediment Deposits Drainage Patterns in Wetlands Secondary Indicators (2 or more required):
Depth of Surface Water: <u>N/A</u> (in.)	X Oxidized Root Channels in Upper 12 Inches Water-Stained Leaves
Depth to Free Water in Pit:(in.)	X Local Soil Survey Data
Depth to Saturated Soil: <u>N/A</u> (in.)	X FAC-Neutral Test Other (Explain in Remarks)
Remarks:	

Map Unit Name (Series and Phase):	Acredale silt	loam	Drainage Class:	Poorly
Taxonomy (Subgroup)	Typic Endoaqualfs		Field Observations Confirm Mapped Type?	Yes No
Profile Description: Depth (inches) Horizon	Matrix Color (Munsell Moist) 10 YR 4/1	Mottle Colors (<u>Munsell Moist)</u>	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc. <i>fine sandy loam</i>
6-9" B/A	2.5 Y 6/4	1 G 5/10 Y	common, coarse, distinct	sandy loam
9-16" <u>B</u>	2.5 Y 6/3	2.5 Y 6/6	few, coarse, faint	sandy loam
<u>16-24+</u> <u>Btg</u>	<u>2.5 Y 6/2</u>	2.5 Y 6/8	<u>common, medium, distinct</u>	sandy clay loam
· · · · · · · · · · · · · · · · · · ·				
Hydric Soil Indicators:				
Histosol Histic Epipedon Sulfidic Odor Aquic Moisture Regin Reducing Conditions Gleyed or Low-Chrom Remarks: Acredale is a H	a Colors	izospheres and sulfur smell	Organic Streaking in San x Listed on Local Hydric So Listed on National Hydric Other (Explain in Remar	oils List c Soils List
WETLAND DETERM	INATION	alan Alan ang kang kang kang kang kang kang kan		
Hydrophytic Vegetation Present? Wetland Hydrology Present? Hydric Soils Present?		o	Sampling Point Within a Wetland	? Yes No
Remarks:				
				na an a
			<u></u>	pproved by HQUSACE 3/92

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Project/Site: BISHOP ROAD M Applicant/Owner: NCDOT Investigator(s): MARTHA BREWST	ER, HAROLD BRADY	Y		Date: County: State:	NORTH	29/2001 HYDE TCAROLINA
Do Normal Circumstances exist on the Is the site significantly disturbed (Atyr Is this area a potential Problem Area? (If needed, explain on reverse)		Yes Yes Yes		Community Transect ID Plot ID:		e cutover S 3
VEGETATION	and a spectrum of the					
Dominant Plant Species	Stratum	Indicator	Domina	nt Plant Species	Stratum	Indicator
1. Panicum verrucosum	herb	FACW	9. Androj	pogon virginicus	herb	FAC-
2. <u>Baccharis halimifolia</u>	shrub	FAC	10. Liquide	ambar styraciflua	tree	FAC
3. Solidago altissima	herb	FACU	* 11.* <u>*.</u>	· · · · ·		
4. <u>Arundinaria gigantea</u>	herb	FACW	. 12		<u> </u>	
5. Rhyncospora inexpansa	herb	FACW	13.	· · · ·		
6. Myrica cerifera		FAC+	14.			
7. Chasmanthium laxum	herb	FACW-	15.	·····		· · · · · · · · · · · · · · · · · · ·
8. Eupatorium capillifolium	herb	FACU	16		:	
Percent of Dominant Species that are ()BL, FACW, or FAC	(excluding FAC		>50%	•	1997 1997 - 1997 1997 - 1997 - 1997 1997 - 1997 - 1997 1997 - 1997 - 1997 1997 - 1997 - 1997 - 1997 1997 -
Remarks:						
HYDROLOGY	a and a sub-			· · · · · · · · · · · · · · · · · · ·		
Recorded Data (Describe in Rem Stream, Lake, or tide Aerial Photographs Other X No Recorded Data Available				drology Indicators: Indicators: Inundated Saturated in Upper Water Marks	12 Inches	
				Drift Lines Sediment Deposits	· · · · · ·	en na haran da. Thair an an an an
Field Observations:	n ja maana n		Second:	Drainage Patterns in ary Indicators (2 or m	n Wetlands	
Depth of Surface Water:	<u>N/A</u> (in.)			Oxidized Root Char Water-Stained Leav	nnels in Upper 12	Inches
Depth to Free Water in Pit:	<u>N/A</u> (in.)		x x	Local Soil Survey D FAC-Neutral Test		
Depth to Saturated Soil:	<u>N/A</u> (in.)			Other (Explain in R	emarks)	· .
Barradan Ma abuinn hudualaainal in	diaatawa		•			

Remarks:

Map Unit Name (Series and Phase):	Chapanoke silt loam		Drainage Class:	Somewhat poorly	
Taxonomy (Subgroup) <u>Aeric Endo</u>		oaquults	Field Observations Confirm Mapped Type?	Yes No	
Profile Description: Depth (inches) Horizon	Matrix Color (<u>Munsell Moist)</u>	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc. organic	
<u>1-5"</u> <u>A</u>	5 YR 4/1			fine sandy loam	
<u>5-13"</u> <u>B1</u>	10 YR 7/4	7.5 YR 7/6	common, med., faint	silty loam	
<u>13-24+</u> <u>B2</u>	2.5 Y 7/6	7.5 YR 7/1	<u>coarse, common, distinct</u>	fine sandy clay loam	
	· · · · · · · · · · · · · · · · · · ·		na se antenia en la composición de la c La composición de la c	· · · · · · · · · · · · · · · · · · ·	
Hydric Soil Indicators: Histosol Histic Epipedon Sulfidic Odor X Aquic Moisture Reg Reducing Condition	18		Crganic Streaking in San x Listed on Local Hydric S Listed on National Hydri	oils List c Soils List	
Gleyed or Low-Chro		n na serie de la constante de la constante La constante de la constante de	Other (Explain in Reman	.ks)	

 Hydrophytic Vegetation Present?
 Yes
 No

 Wetland Hydrology Present?
 Yes
 No

 Hydric Soils Present?
 Yes
 No

 Is this Sampling Point Within a Wetland?
 Yes
 No

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Project/Site:BISHOP ROAD MITIGATION SITEApplicant/Owner:NCDOTInvestigator(s):CINDY CARR, TOM BARRETTDo Normal Circumstances exist on the site?Is the site significantly disturbed (Atypical Situation)?Is this area a potential Problem Area?(If needed, explain on reverse)	Yes Yes Yes Yes	Date:11/29/2001County:HYDEState:NORTH CAROLINANoCommunity ID:NoTransect ID:NoPlot ID:4
VEGETATION		
Dominant Plant Species Stratum	Indicator	Dominant Plant Species Stratum Indicator
1. Persea borbonia shrub	FACW	9. <u>Andropogon virginicus</u> herb FAC-
2. Baccharis halimifolia shrub	FAC	10. Pinus taeda shrub FAC
3. <u>Ilex glabra</u> shrub	FACW	11. Ilex opaca shrub FAC
4. Quercus phellos shrub	FACW	12.
5. Liquidambar styraciflua shrub	FAC	13.
6. Smilax laurifolia vine	FACW	14
7. Myrica cerifera shrub	FAC+	15.
8. Smilax smallii vine	FACU	16.
Percent of Dominant Species that are OBL, FACW, or FAC	C (excluding FAC	-)
HYDROLOGY	an a	
Recorded Data (Describe in Remarks) Stream, Lake, or tide Gauge Aerial Photographs Other X No Recorded Data Available Field Observations: Depth of Surface Water: N/A (in.) Depth to Free Water in Pit: 17 (in.) Depth to Saturated Soil: N/A (in.)		Wetland Hydrology Indicators: Primary Indicators: Inundated Saturated in Upper 12 Inches Water Marks Drift Lines Sediment Deposits Drainage Patterns in Wetlands Secondary Indicators (2 or more required): X Oxidized Root Channels in Upper 12 Inches Water-Stained Leaves Local Soil Survey Data X FAC-Neutral Test Other (Explain in Remarks)
Remarks:		

Map Unit Name (Series and Phase): Fork fine sandy loam	Drainage Class: Somewhat poorly
Taxonomy (Subgroup) Aeric Endoaqualfs	Field Observations Confirm Mapped Type ² Yes No
Profile Description: Matrix Color Mottle Colors Depth Matrix Color Mottle Colors (inches) Horizon (Munsell Moist) (Munsell Moist) 0-6" A 10 YR 2/1	Mottle Texture, Concretions, Abundance/Contrast Structure, etc. mucky sandy loam
<u>6-12" Btg1 2.5 Y 6/3</u>	Organic streaking, sandy clay loam
<u>12-24+ Btg2 2.5 Y 6/8 2.5 Y 6/2</u>	common, medium, distinct sandy clay
n an	
Hydric Soil Indicators:	
Histosol Histic Epipedon Sulfidic Odor X Aquic Moisture Regime X Reducing Conditions Gleyed or Low-Chroma Colors	Concretions High Organic Content in Surface Layer in Sandy Soils Organic Streaking in Sandy Soils Listed on Local Hydric Soils List Listed on National Hydric Soils List Other (Explain in Remarks)
Remarks: Fork fine sandy loam is classified as a Hydric B soil. WETLAND DETERMINATION	
Hydrophytic Vegetation Present?YesNoWetland Hydrology Present?YesNoHydric Soils Present?YesNo	is Sampling Point Within a Wetland? Yes No
Remarks:	
	Approved by HQUSACE 3/92

Project/Site: BISHOP ROAD MITTO Applicant/Owner: NCDOT Investigator(s): MARTHA BREWSTER,		and a second sec		Date: County: State:	11/29/2001 HYDE NORTH CAROLINA
Do Normal Circumstances exist on the site Is the site significantly disturbed (Atypical Is this area a potential Problem Area? (If needed, explain on reverse)		Yes Yes Yes	No No No	Community Transect ID: Plot ID:	
VEGETATION	n an	· · · · · · · · · ·	· · · · · · · · · · · · · · · · · · ·	n an	
Dominant Plant Species	Stratum	Indicator	Domina	nt Plant Species	Stratum Indicator
1. Ilex glabra	shrub	FACW	9. <u>Androj</u>	oogon virginicus	herb FAC-
2. Quercus stellata	shrub	FACU	10. Liquido	umbar styraciflua	tree FAC
3. Solidago altissima	herb	FACU	11. <u>A</u>	cer rubrum	shrub FAC
4. Arundinaria gigantea	herb	FACW	12.	Rhexia sp.	herb FACW
5. Rhyncospora inexpansa	herb	FACW	13. <u>Smil</u>	ax rotundifolia	vine FAC
6. Myrica cerifera	shrub	FAC+	14. <u>Rhyncos</u>	spora fascicularis	herb FACW+
7. Chasmanthium laxum	herb	FACW-	15.		
8. Eupatorium capillifolium	herb	FACU	16.		ar an ann a' tha an a' tha an a' thair an an a' thair an an a' thair an
Percent of Dominant Species that are OBL Remarks:	, FACW, or FAC(excluding FAC-). 	>50%	
HYDROLOGY					
Recorded Data (Describe in Remarks Stream, Lake, or tide Ga Aerial Photographs Other X No Recorded Data Available				Irology Indicators: Indicators: Saturated Water Marks Drift Lines Sediment Deposits	12 Inches
Depth to Free Water in Pit: <u>N</u>	// <u>A</u> (in.) // <u>A</u> (in.) 18(in.)		<u>x</u>	Drainage Patterns in ary Indicators (2 or me	ore required): mels in Upper 12 Inches es ata
Remarks: No obvious hydrological indica	ttors; however, two	secondary indi	cators exist.		

Map Unit Name (Series and Phase): <u>Acredale silt loam</u>		Drainage Class:	Poorly	
Taxonomy (Subgroup)	Typic endoaqu	ualfs	Field Observations Confirm Mapped Type	Yes No
Profile Description: Depth (inches) Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc. organic
<u> </u>	7.5 YR 5/2	· · · · · · · · · · · · · · · · · · ·	··· <u>·································</u>	many fine roots, silty loam
10-18" Btg1	10 YR 7/4	2.5 Y 7/2	few, med., faint	silty clay loam
<u>18-30+</u> <u>Big2</u>	10 YR 7/3	2.5 Y 7/1	common, coarse, distinct	silty clay
		7.5 YR 6/8	common, medium	
	· · · · · · · · · · · · · · · · · · ·			an
Hydric Soil Indicators: Histosol Sulfidic Odor Aquic Moisture Regi Reducing Conditions Gleyed or Low-Chror Remarks: Oxidized rhizo	and the second	credale silt loam is classifi	Organic Streaking in Si Listed on Local Hydric Listed on National Hyd Other (Explain in Rem	Soils List ric Soils List
WETLAND DETERM				
Wetland Hydrology Present? Hydric Soils Present?	Yes No Yes No	Is this	Sampling Point Within a Wetlar	id? Yes No
Remarks:				
			en allen ander der anderen and Er en allen anderen and	Approved by HQUSACE 3/92

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Project/Site: BISHOP ROAD MITIGATION SITE Applicant/Owner: NCDOT Investigator(s): CINDY CARR, TOM BARRETT Do Normal Circumstances exist on the site? Yes Is the site significantly disturbed (Atypical Situation)? Yes Is this area a potential Problem Area? Yes (If needed, explain on reverse) Yes	Date:11/29/2001County:HYDEState:NORTH CAROLINANoCommunity ID:NoPine cutoverTransect ID:TPlot ID:2
VEGETATION	
Dominant Plant Species Stratum Indicator	Dominant Plant Species Stratum Indicator
1. Carex sp. herb FACW	9. Andropogon virginicus herb FAC-
2. Scirpus sp. herb FACW	10. Pinus taeda shrub FAC
3. Solidago altissima herb FACU	11. <u>Acer rubrum shrub FAC</u>
4. Panicum verrucosum herb FACW	12. Juncus sp. herb FACW
5. <u>Rhyncospora inexpansa</u> herb FACW	13
6. Myrica cerifera shrub FAC+	14
7. <u>Chasmanthium laxum herb</u> FACW-	15
8. <u>Baccharis halimifolia</u> shrub FAC	16.
Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-)>50%
Remarks:	
HYDROLOGY	ne en la companya de la companya de La companya de la comp
Recorded Data (Describe in Remarks) Stream, Lake, or tide Gauge Aerial Photographs Other X No Recorded Data Available	Wetland Hydrology Indicators: Primary Indicators: Inundated Saturated in Upper 12 Inches Water Marks Drift Lines
Field Observations:	Sediment Deposits Drainage Patterns in Wetlands Secondary Indicators (2 or more required):
Depth of Surface Water: <u>N/A</u> (in.)	X Oxidized Root Channels in Upper 12 Inches Water-Stained Leaves
Depth to Free Water in Pit: <u>N/A</u> (in.)	X Local Soil Survey Data X FAC-Neutral Test
Depth to Saturated Soil: <u>N/A</u> (in.)	Other (Explain in Remarks)
Remarks. No obvious hydrological indicators, however two secondary indic	antare exist

Map Unit Name (Series and Phase): Yonges loam			Drainage Class:	Poorly
Taxonomy (Subgroup)	Typic endoaqualfs		Field Observations Confirm Mapped Type	2 Yes No
Profile Description: Depth (inches) Horizon	Matrix Color (Munsell Moist)	Mottle Colors <u>(Munsell Moist)</u>	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
<u>0-2" A</u> 2-12" Bt	<u>10 YR 3/2</u> 2.5 Y 6/3	2.5 Y 6/8	common, medium, distinct	silt loam Oxidized rhizo., sandy clay loan
<u>12-24+</u> Btg1	<u>2.5 Y 6/1</u>	10 YR 6/8		fine sandy clay
<u>12-24</u> T <u>Dig1</u>		10 1K 0/0	<u>common, coarse, distinct</u>	jine sunay ciay
		a santa a	a a anna an a	
	in a start a			
·				
Hydric Soil Indicators:				
Histosol Histic Epipedon Sulfidic Odor X Aquic Moisture Regim Reducing Conditions Gleyed or Low-Chroma	an an ann an Alban a Alban an Alban an Alba		Concretions High Organic Content Organic Streaking in Si Listed on Local Hydric Listed on National Hydr Other (Explain in Rem	Soils List Iric Soils List
Remarks: Oxidized rhizos	pheres in the A horizon.	Yonges loam is classified t	as a Hydric A soil.	
WETLAND DETERM	INATION	an a	na an a	
Hydrophytic Vegetation Present? Wetland Hydrology Present? Hydric Soils Present?	Yes Yes Yes	No No Is thi	s Sampling Point Within a Wetlan	nd? Yes No
Remarks:				
				Approved by HQUSACE 3/92

Project/Site:BISHOP ROAD MITIGATION SITEApplicant/Owner:NCDOTInvestigator(s):MARTHA BREWSTER, HAROLD BRADDo Normal Circumstances exist on the site?Is the site significantly disturbed (Atypical Situation)?Is this area a potential Problem Area?(If needed, explain on reverse))Y Yes Yes Yes	No No No	Date: County: State: Community Transect ID Plot ID:	<u>NORT</u> 1D: UN	1/29/2001 HYDE H CAROLINA PLANTED U 1
VEGETATION		an a			
Dominant Plant Species Stratum	<u>Indicator</u>	Dominar	nt Plant Species	<u>Stratum</u>	Indicator
1. Baccharis halimifolia shrub	FAC	9. <u>Sm</u>	ulax smallii	vine	FACU
2. Myrica cerifera shrub	FAC+	10. <u>Smi</u>	lax bona-nox	vine	FAC
3. <u>Pinus taeda</u> tree	FAC	11. Liquida	mbar styraciflua	shrub	FAC
4. <u>Solidago altissima</u> <u>herb</u>	FACU	12. <u>A</u>	cer rubrum	shrub	FAC
5. <u>Aristida virgata</u> <u>herb</u>	FACW-	13. Androp	ogon virginicus	herb	FACU
6. <u>Chasmanthium laxum</u> herb	FACW+	14. Solid	lago tenuifolia	herb	NA
7. Solidago microcephala herb	NA	15	. · · .		
8. <u>Gelsemium sempervirens</u> vine	FAC	16.	· .	ng ter segler de Ter segler	
Percent of Dominant Species that are OBL, FACW, or FAC	C (excluding FAC	>-).	>75%		10 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1
Remarks:					
HYDROLOGY		is a an taite an	n an	یک اور کار میشید د. د	e por la come e transferencia de la com
Recorded Data (Describe in Remarks) Stream, Lake, or tide Gauge Aerial Photographs Other X No Recorded Data Available	Wetland Hydrology Indicators: Primary Indicators: Inundated Saturated in Upper 12 Inches Water Marks Drift Lines				
Field Observations:	Sediment Deposits Drainage Patterns in Wetlands Secondary Indicators (2 or more required):				
Depth of Surface Water: <u>N/A</u> (in.)	Oxidized Root Channels in Upper 12 Inches Water-Stained Leaves				
Depth to Free Water in Pit: <u>N/A</u> (in.)	Local Soil Survey Data FAC-Neutral Test				
Depth to Saturated Soil: <u>N/A</u> (in.)		_ *	Other (Explain in R	emarks)	
		a shara a shara a	n an		and the second s

Remarks: No obvious surface hydrology indicators.

Map Unit Name (Series and Phase): Taxonomy (Subgroup)		Fork fine sa	ndy loam	Drainage Class: Somewhat poorly drained		
		Aeric Ende	paqualfs	Field Observations Confirm Mapped Type	Yes	
Profile Descript Depth (inches)	<u>ion:</u> Horizon	Matrix Color (Munsell Moist)	Mottle Colors (<u>Munsell Moist)</u>	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.	
1-6"	<u> </u>	5 YR 4/1			silty loam	
6-20"	<u></u>	10 YR 6/4	7.5 YR 6/8; 7.5 YR 7/2	many, med, dist; few, crs, dist	silty clay loam	
<u></u>	<u></u>	7.5 YR 6/1	10 YR 6/8	common, coarse, prominent;	silty clay	
Sulfi Aqui Redu	19 a. a.	and the second sec		Concretions High Organic Content in S Organic Streaking in Sand Listed on Local Hydric So Listed on National Hydric Other (Explain in Remark	ls List Soils List	
Remarks:	Fork is a hydri	ic B soil.				
WETLAN]	D DETERM	INATION	a de la constante de la consta Constante de la constante de la			
Hydrophytic Ve Wetland Hydrol Hydric Soils Pro	- TT - 2 - 2 - 2 - 2 - 2 - 2 - 2 - 2 - 2	Yes	No No Is this	s Sampling Point Within a Wetland?	Yes No	
Remarke	t de Flatistik (Rich			 A statistic fragment of the search 		

la se anna an taoinn Taoinn an ta

Project/Site: BISHOP ROAD M. Applicant/Owner: NCDOT Investigator(s): MARTHA BREWST	TER, HAROLD BRAD				Date: County: State:		11/29/2001 HYDE DRTH CAROLINA	_
Do Normal Circumstances exist on the Is the site significantly disturbed (Atyp Is this area a potential Problem Area? (If needed, explain on reverse)	pical Situation)?	Yes Yes Yes	s No]	Communit Transect II Plot ID:	*	UNPLANTED U 2	_
VEGETATION		· · · · · · · · · · · · · · · · · · ·						-
Dominant Plant Species	<u>Stratum</u>	<u>Indicator</u>		Dominant Pla	and the second	<u>Stratum</u>	Indicator	
1. <u>Baccharis halimifolia</u>	shrub	FAC	- 9.	Juncus c	coriaceus	herb	FACW	
2. <u>Pinus taeda</u>	shrub	FAC	10.	Panicun	m anceps	herb	FAC-	
3. <u>Solidago altissima</u>	herb	FACU	- 11.	Chasmantl	thium laxum	herb	FACW-	_
4. <u>Andropogon virginicus</u>	herb	FACU	_ 12.	Mikania	scandens	vine	FACW	
5. <u>Rhynchospora inexpansa</u>	herb	FACW	13.	Rubi	us sp.	shrub	NA	
6. Juncus effusus	herb	FACW-	14.	·	2010 - 2010 - 2010 			_
7. <u>Smilax bona-nox</u>	vine	FAC	15.	· · · .				_
8. <u>Acer rubrum</u>	shrub	FAC	16.					
Percent of Dominant Species that are C Remarks:	DBL, FACW, or FAC	C (excluding FAC	,-).		>75%	· · ·		
			۰۰ یا ۲۰ ۱۹۰۰ میں ۱۹۰۰ میں					
HYDROLOGY Recorded Data (Describe in Rema	-1>		Wet	tland Hydrolog	to disators			<u> </u>
Recorded Data (Describe in Rema Stream, Lake, or tide Aerial Photographs Other X_No Recorded Data Available Field Observations: Depth of Surface Water: Depth to Free Water in Pit:			P 	Primary Indice Inum Satu Wat Drif Secondary In Oxic X Wat X Loce	ators: indated urated in Upper iter Marks iff Lines liment Deposits ainage Patterns i ndicators (2 or n idized Root Cha iter-Stained Leav cal Soil Survey I	s in Wetlands more required): annels in Uppe ives Data	r 12 Inches	
Depth to Saturated Soil:	<u>N/A</u> (in.)	N		FAC	C-Neutral Test ner (Explain in F	·		

Map Unit Name (Series and Phase): Taxonomy (Subgroup)	Yonges loam		Drainage Class: Field Observations Confirm Mapped Type	Poorly drained Yes No
Profile Description: Depth (inches) Horizon <u>0-1" 0</u>	Matrix Color (<u>Munsell Moist)</u>	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
<u>1-7"</u> <u>A</u> <u>7-15"</u> <u>Bg</u> <u>15-24"+</u> <u>Bt</u>	7.5 YR 3/1 10 YR 6/2 10 YR 7/3	10 YR 7/8 10 YR 6/1 2.5 Y 6/8	few, fine, faint common, coarse, distinct; common, coarse, prominent	sandy loam sandy loam sandy clay
Hydric Soil Indicators: Histosol Histic Epipedon Sulfidic Odor X Aquic Moisture Regir Reducing Conditions X Gleyed or Low-Chron			Concretions High Organic Content in Organic Streaking in San Listed on Local Hydric S Listed on National Hydri Other (Explain in Reman	oils List c Soils List
Remarks: Yonges is lister	d as a Hydric A soil.			
WETLAND DETERM	IINATION	an a		

5	Hydrophytic Vegetation Present? Yes	No	
	Wetland Hydrology Present? Yes	No	and the second secon
1999 - 19	Hydric Soils Present?	No	Is this Sampling Point Within a Wetland? Yes No
	Remarks:		

App	oject/Site: BISHOP ROAD MIT plicant/Owner: NCDOT estigator(s): MARTHA BREWSTE	$\label{eq:static} \left\{ \begin{array}{llllllllllllllllllllllllllllllllllll$				Date: County: State:	1	11/30/2001 HYDE RTH CAROLINA
Is th Is th	Normal Circumstances exist on the s he site significantly disturbed (Atypic his area a potential Problem Area? If needed, explain on reverse)		Yes Yes Yes	No No No	3	Communit Transect II Plot ID:		EAR OLD PINE V 1
	EGETATION				~		<u>a</u>	
an an	Dominant Plant Species	<u>Stratum</u>	<u>Indicator</u>		elle elle	it Plant Species	Stratum	Indicator
1.	Solidago tenuifolia	herb	UPL	9.	Ast	ter dumosa	herb	FAC
2.	Juncus effusus	herb	FACW-	10.	Panicu	um verrucosum	herb	FACW
3.	Solidago fistulosa	herb	FAC+	11.		· · · · · · · · · · · ·		
4.	Eupatorium capillifolium	herb	FACU	12.	• • •			
5.	Baccharis halimifolia	shrub	FAC	13.			· · · · · · · · · · · · · · · · · · ·	
6.	Lonicera japonica	vine	FAC	14.	Pi	inus taeda	planted	
7.	Dichanthelium consanguineu	herb	FAC	15.			·	
8.	Rubus sp	shrub	NA	16.	•		an a	
Ren	narks:							
Н	YDROLOGY						· ·	
	Recorded Data (Describe in Remar Stream, Lake, or tide (Aerial Photographs Other No Recorded Data Available				Primary In	Inundated Saturated in Upper Water Marks Drift Lines		
	d Observations: Depth of Surface Water:	<u>N/A</u> (in.)			Secondar	Sediment Deposits Drainage Patterns i ry Indicators (2 or n Oxidized Root Cha Water-Stained Lea	in Wetlands more required): annels in Upper	
. I	Depth to Free Water in Pit:	<u>N/A</u> (in.)		· .	X	Local Soil Survey I	Data	
	Depth to Saturated Soil:	<u>N/A (</u> in.)		:		FAC-Neutral Test Other (Explain in F	Remarks)	
Ren	narks: No obvious surface hydrolog	y indicators.						 • •

Map Unit Name (Series and Phase):	Stockade mucky	State - a count of a second or second	Drainage Class: Field Observations	Very poorly drained
Taxonomy (Subgroup)	Umbric Endo	aqualfs	Confirm Mapped Type	Yes No
Profile Description: Depth (inches) <u>Horizon</u>	Matrix Color (Munsell Moist)	Mottle Colors (<u>Munsell Moist)</u>	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
<u>0-12"</u> <u>A</u> 12-28" Big	<u> </u>		few, fine, faint	fine silty clay loam
<u>12-20</u> <u>Dtg</u>		10 IR 3/3	jew, june, juni	fine sandy clay loam
a de contra de a constante de la constante de En la constante de la constante			a.e.	
n an		n an		
Hydric Soil Indicators: Histosol Sulfidic Odor Aquic Moisture Regim Reducing Conditions X Gleyed or Low-Chrom	1997 - 1997 -		Concretions High Organic Content Organic Streaking in S: Listed on Local Hydric Listed on National Hyd Other (Explain in Rem	Soils List ric Soils List
Remarks: Stockade is liste	ed as a Hydric A soil. Fe	w oxidized root channels in t	the upper portion of the Big ho	izon.

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes	No	
Wetland Hydrology Present? Yes	No	
Hydric Soils Present? Yes	No	Is this Sampling Point Within a Wetland? Yes No
Remarks:		

4	Project/Site: BISHOP ROAD MITIGATION SITE Applicant/Owner: NCDOT Investigator(s): MARTHA BREWSTER, TOM BARRETT		یکی اور پینٹریں ایر بیار سور اور اور اور اور اور اور	Date; County: State:	NC	11/30/2001 HYDE RTH CAROLINA
	Do Normal Circumstances exist on the site? Is the site significantly disturbed (Atypical Situation)? Is this area a potential Problem Area? (If needed, explain on reverse)	Yes Yes Yes	No No No	Communit Transect II Plot ID:		VEAR OLD PINE V 2
	VEGETATION					
	Dominant Plant Species Stratum	Indicator	e de la constante de la constan La constante de la constante de	Dominant Plant Species	Stratum	Indicator
÷.,	1. Eupatorium capillifolium herb	FACU	9.	Smilax glauca	herb	FAC
	2. Solidago fistulosa herb	FAC+	10.	Ambrosia artemisiifolia	herb	FACU
	3. Solidago microcephala herb	UPL	11.	Setaria sp.	herb	FACU
	4. Dichanthelium consanguineu. herb	FAC	12.			
:	5. Andropogon virginicus herb	FAC-	13.			a sa ang ang ang ang ang ang ang ang ang an
	6. Erianthus gigantea herb	FACW	14.	Pinus taeda	planted	
	7. Panicum verrucosum herb	FACW	15.			
	8. Lonicera japonica vine	FAC	16.			
	Percent of Dominant Species that are OBL, FACW, or FAC	C (excluding FAC	-).	>50%	,	n en la tres de la filma.
	Remarks:				*	
•	HYDROLOGY				· · · ·	an a
	Recorded Data (Describe in Remarks) Stream, Lake, or tide Gauge Aerial Photographs Other X No Recorded Data Available			land Hydrology Indicators: Primary Indicators: Inundated Saturated in Upper Water Marks Drift Lines	12 Inches	n an an Arabana Ang taon an Arabana Ang taon an Arabana
	Field Observations:	ی این میشود می واند و می گر این می واند و مرکز این می واند و می	· · · · · ·	Sediment Deposits Drainage Patterns Secondary Indicators (2 or 1	in Wetlands	
-	Depth of Surface Water: <u>N/A</u> (in.)			Oxidized Root Cha Water-Stained Lea		er 12 Inches
	Depth to Free Water in Pit: <u>N/A</u> (in.)			X Local Soil Survey FAC-Neutral Test	Data	
	Depth to Saturated Soil: <u>N/A</u> (in.)			Other (Explain in)	Remarks)	

Remarks: No obvious surface hydrology indicators.

Map Unit Name (Series and Phase):	Stockade mucky s	andy loam	Drainage Class: Field Observations	Very poorly drained	
Taxonomy (Subgroup)	Umbric Endoa	aqualfs	Confirm Mapped Type Yes No		
Profile Description: Depth (inches) Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.	
<u> </u>	<u>7.5 YR 3/1</u> 10 YR 5/1	7.5 YR 6/8	few, medium distinct	fine sandy clay loam	
12-24+ Btg	10 YR 5/1	7.5 YR 6/8	many, coarse, prominent	fine sandy clay	
				an a	
Hydric Soil Indicators:					
Histic Epipedon Sulfidic Odor X Aquic Moisture Regime Reducing Conditions X Gleyed or Low-Chroma			High Organic Content Organic Streaking in S X Listed on Local Hydric Listed on National Hydric Other (Explain in Ren	e Soils List Iric Soils List	
Remarks: Stockade is listed	d as a Hydric A soil.				
WETLAND DETERMI	NATION				
Hydrophytic Vegetation Present? Wetland Hydrology Present? Hydric Soils Present?	Yes N Yes N Yes N	0	is Sampling Point Within a Wetla	nd? Yes No	
Remarks:	en Montra, mel 19 Sinte Stelland, and Stelland Status en Montra est				
		•	 A second sec second second sec		
e a start de la companya de la comp de la companya de la de la companya de la c de la companya de la c					

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	a da ang ang ang ang ang ang ang ang ang an						
Project/Site: BISHOP ROAD MITTO Applicant/Owner: NCDOT Investigator(s): MARTHA BREWSTER,	ta a litet		، ، ، ، ، ، ، ، ، ، ، ، ، ، ، ، ، ، ،		Date: County: State:		/30/2001 HYDE H CAROLINA
Do Normal Circumstances exist on the sit Is the site significantly disturbed (Atypica Is this area a potential Problem Area? (If needed, explain on reverse)		Yes Yes Yes	No No No]	Communit Transect II Plot ID:	·	R OLD PINE W I
VEGETATION	and and a start of the second s			1999 - 1999 -		a tara ang ang ang ang ang ang ang ang ang an	e en
Dominant Plant Species	<u>Stratum</u>	Indicator		Dominan	t Plant Species	Stratum	Indicator
1. Solidago fistulosa	herb	FAC+	· 9.		uncus sp.	herb	FAC
2. Juncus effusus	herb	FACW-	10.	Pan	icum anceps	herb	FAC-
3. Dichanthelium consanguineu.	herb	FAC	- 11.	Eupatori	um capillifolium	herb	FACU
4. Panicum verrucosum	herb	FACW	12.	1	a le productione.	- 19 - 19 - 19 - 19 - 19 - 19 - 19 - 19	
5. Baccharis halimifolia	shrub	FAC	13.		· · · · · · · · · · · · · · · · · · ·		
6. Erianthus gigantea	herb	FACW	14.	Pi	nus taeda	planted	
7. Solidago microcephala	herb	NA	15.		· · · · ·		
8. Polygonum sp.	herb	FAC	16.	· · ·			
Percent of Dominant Species that are OBI	, FACW, or FAC	(excluding FAC-).		>75%		
Remarks:							
HYDROLOGY	i na si	an an ar a'	en gann			park a first an	and the second of
Recorded Data (Describe in Remarks Stream, Lake, or tide Ga Aerial Photographs Other X No Recorded Data Available				Primary It	ology Indicators: Idicators: Inundated Saturated in Upper Water Marks Drift Lines Sediment Deposits	12 Inches	
Depth to Free Water in Pit:	<u>₹/A</u> (in.) <u>₹/A</u> (in.)			Secondar	Scannent Deposits Drainage Patterns in y Indicators (2 or n Oxidized Root Cha Water-Stained Leav Local Soil Survey I FAC-Neutral Test Other (Explain in R	nore required): nnels in Upper 1 /es Data	2 Inches
Remarks: Standing water in the bottoms	of low furrows.						

Map Unit Name (Series and Phase):	Brookman lo	am	Drainage Class:	Very poorly drained
Taxonomy (Subgroup)	Umbric Endoag	qualfs	Field Observations Confirm Mapped Type?	Yes No
Profile Description: Depth (inches) Horizon	Matrix Color (<u>Munsell Moist)</u>	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
<u>0-12"</u> <u>A</u>	10 YR 3/1		enzantaria en en en en en en en elemente de la dela de la compositiva en elemente de la dela dela dela dela de 19	silty clay loam
<u>12-20"</u> <u>Btg1</u>	10 YR 4/1		- <u> </u>	fine sandy clay loam
<u>20-24+</u> <u>Btg2</u>	<u>10 YR 4/1</u>	<u>10 YR 5/8</u>	common, coarse, distinct	fine sandy clay
	n na series and s			te esta per la transformación de la composición
n an		a an	n - Andrea -	
			· · · · · · · · · · · · · · · · · · ·	
Hydric Soil Indicators:	ing an an an ann an an an an an an an an an	a an	at a star a s	an ta sana da ta sana di sana da sana Internet sana da sana d
Histic Epipedon Sulfidic Odor X Aquic Moisture Regime Reducing Conditions X Gleyed or Low-Chroma C Remarks: Brookman loam is		soil. Few oxidized root ch	High Organic Content in Organic Streaking in San X Listed on Local Hydric S Listed on National Hydri Other (Explain in Reman	oils List c Soils List rks)
WETLAND DETERMIN	ATION	n fin standar og fillande sakte Referense fille og sok filler	an a	
Hydrophytic Vegetation Present? Wetland Hydrology Present? Hydric Soils Present?	Yes No Yes No Yes No		Sampling Point Within a Wetland	? Yes No
Remarks:				
				Approved by HQUSACE 3/92

Project/Site: BISHOP ROAD MITIGATION SITE Applicant/Owner: NCDOT Investigator(s): MARTHA BREWSTER, TOM BARRETT	Date: 11/30/2001 County: HYDE State: NORTH CAROLINA
Do Normal Circumstances exist on the site? Is the site significantly disturbed (Atypical Situation)? Is this area a potential Problem Area? (If needed, explain on reverse)	Yes No Yes No Yes No Plot ID: 2 YEAR OLD PINE
VEGETATION	n na na gunant na naisinan ani na na shi shine li ina guna an ina da shine tanan na sa sa na na na na na na na Tana na na Tana na na
Dominant Plant Species Stratum Indica	
1. Juncus effusus herb FACV	V- 9. <u>Andropogon virginicus herb FAC-</u>
2. Chasmanthium laxum herb FACW	7- 10. Polygonum sp herb FAC-
3. Eupatorium capillifolium herb FACU	J 11. Lonicera japonica vine FAC
4. <u>Baccharis halimifolia</u> shrub FAC	12
5. <u>Solidago microcephala</u> herb NA	And the set of the
6. Solidago fistulosa herb FAC+	+ 14. Pinus taeda planted
7. Dichanthelium consanguineu. herb FAC	15. <u>et al se al s</u>
8. Panicum verrucosum herb FACM	<u>/</u> 16.
Percent of Dominant Species that are OBL, FACW, or FAC (excludin	ng FAC-).
Remarks:	
HYDROLOGY	n en
Recorded Data (Describe in Remarks) Stream, Lake, or tide Gauge Aerial Photographs	Wetland Hydrology Indicators: Primary Indicators: Inundated
Other No Recorded Data Available	Saturated in Upper 12 Inches Water Marks Drift Lines
Field Observations:	Sediment Deposits Drainage Patterns in Wetlands Secondary Indicators (2 or more required):
Depth of Surface Water: <u>N/A</u> (in.)	Oxidized Root Channels in Upper 12 Inches Water-Stained Leaves
Depth to Free Water in Pit: <u>N/A</u> (in.)	X Local Soil Survey Data X FAC-Neutral Test
Depth to Saturated Soil: <u>N/A</u> (in.)	Other (Explain in Remarks)
Remarks: Standing water in the bottoms of low furrows.	

Map Unit Name (Series and Phase):	Brookman l	oam	Drainage Class: Field Observations	Very poorly drained
Taxonomy (Subgroup)	Umbric Endoa	qualfs	Field Observations Confirm Mapped Type	Yes No
Profile Description: Depth (inches) Horizon	Matrix Color (<u>Munsell Moist)</u> 10 YR 3/1	Mottle Colors (<u>Munsell Moist)</u>	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc. silty clay loam
<u>12-24+"</u> <u>Btg</u>	7.5 YR 4/1	7.5 YR 5/2	few, fine, faint	fine sandy clay loam
	· · · · · · · · · · · · · · · · · · ·	**************************************	· · · · · · · · · · · · · · · · · · ·	
			الدي الديني المراجعة. 1995 - المراجعة المر 1996 - مراجعة المراجعة المراجع	
Hydric Soil Indicators: Histosol Histic Epipedon Sulfidic Odor X Aquic Moisture Regin Reducing Conditions X Gleyed or Low-Chror			Concretions High Organic Content Organic Streaking in S Listed on Local Hydric Listed on National Hydric Other (Explain in Rer	e Soils List dric Soils List
			hannels in lower Btg horizon.	
WETLAND DETERM Hydrophytic Vegetation Present? Wetland Hydrology Present? Hydric Soils Present?		9	Sampling Point Within a Wetla	nd? Yes No
Remarks:				n det neder gedeten neder 1999 - Andrea Stationen 1997 - Andreas Maria († 1997) 1997 - Andreas Maria († 1997)
				Approved by HQUSACE 3/92

Project/Site: BISHOP ROAD MITIGAT Applicant/Owner: NCDOT Investigator(s): MARTHA BREWSTER, TO	· · · · · · · · · · · ·			Date: County: State:	11/30/ HYI NORTH C.	DE
Do Normal Circumstances exist on the site? Is the site significantly disturbed (Atypical Si Is this area a potential Problem Area? (If needed, explain on reverse)		Yes N Yes N Yes N	o la constante de la constante	Community ID: Transect ID: Plot ID:	2 YEAR О И З	/
VEGETATION	na n	an a			y distance The State	
Dominant Plant Species S	Stratum Inc	licator	Dominant Plant	Species St	ratum	Indicator
1. Panicum verrucosum	herb <u>F</u>	<u>ACW</u> 9.	Rubuss	<u>p. sl</u>	hrub	NA
2. Solidago fistulosa	herb F	<u>4C+</u> 10). Lonicera ja	ponica v	vine	FAC
3. <u>Baccharis halimifolia</u> s	hrub F	<u>AC 1</u>	Solidago ali	tissima h	erb	FACU
4. Dichanthelium consanguineu	herb F	<u>AC</u> 12	<u>)</u>	<u> </u>	<u></u>	
5. Panicum anceps	herb E	<u>AC-</u> 11),	·····		
6. Eupatorium capillifolium	herb F2	1 <i>CU</i> 14	. Pinus ta	eda pla	anted	
7. Phragmites australis	herb FA	1. 1.	5.	· · · · ·	es administrations.	
8. Juncus effusus	herb FA	<u>CW-</u> 10	š		in the state	
Percent of Dominant Species that are OBL, F Remarks:	ACW, or FAC (excl	uding FAC-).		>50%		
HYDROLOGY	andra y serie a strange. Na strange	میں کو ایک ویل و اور میں ایک مراجع	en en la seconda de la seco En la seconda de la seconda	n na strange og skrigere av strange og Sen skrigere av skrigere av skrigere av skrigere av skrigere av skrigere Sen skrigere av	tangka kalendar sa tanan Tan	ا أيونه المراجعين المراجعين. م
Recorded Data (Describe in Remarks) Stream, Lake, or tide Gauge Aerial Photographs Other X No Recorded Data Available	e		Water Drift I	rs: ated ted in Upper 12 In Marks .ines	ches	
Field Observations:			Draina	ent Deposits age Patterns in Wet cators (2 or more r		ASI wa di ili 19 19 - Antonio Maria
Depth of Surface Water: <u>N/A</u>	(in.)		Oxidiz	red Root Channels Stained Leaves		ches
Depth to Free Water in Pit: <u>N/A</u>	_(in.)		X Local	Soil Survey Data		
Depth to Saturated Soil: <u>N/A</u>	(in.)			(Explain in Remar	ks)	
Remarks: No obvious surface hydrology ind	icators.					

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Map Unit Name (Series and Phase):	Brookm	an loam	Drainage Class:	Very poorly drained
Taxonomy (Subgroup)	Umbric Ei	ndoaqualfs	Field Observations Confirm Mapped Typ	e? Yesi No
Profile Description: Depth (inches) Horizon 0-8" A	Matrix Color (<u>Munsell Moist)</u> 7.5YR 2.5/1	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc. silt loam; many fine roots
<u>8-12" BA</u>	7,5 YR 4/1	10 YR 5/6	few, medium, distinct	silt loam
<u>12-28+</u> <u>Btg</u>	2.5 ¥ 6/1	<u>10 YR 8/8</u>	common, medium, distinct	clay
Hydric Soil Indicators:			an a	an staal daa daala
Histosol Histic Epipedon Sulfidic Odor X Aquic Moisture Regi Reducing Conditions X Gleyed or Low-Chron	김 아파가 가지 않는다.		Concretions High Organic Conten Organic Streaking in X Listed on Local Hydr Listed on National Hy Other (Explain in Re	ic Soils List /dric Soils List
Remarks: Brookman loa	m is classified as a Hya	ric A soil. Few oxidized i	root channels in BA and Big horizoi	15.
WETLAND DETERM	IINATION	an ta' an taon an		
Hydrophytic Vegetation Present Wetland Hydrology Present? Hydric Soils Present?	? Yes Yes Yes	No No No	this Sampling Point Within a Wetl	and? Yes No
Remarks:				
				Approved by HQUSACE 3/92

Project/Site: BISHOP ROAD MI Applicant/Owner: NCDOT Investigator(s): MARTHA BREWSTE Do Normal Circumstances exist on the Is the site significantly disturbed (Atyp Is this area a potential Problem Area? (If needed, explain on reverse)	ER, TOM BARRETT e site?	T Yes Yes Yes	s No	Date: County: State: Community Transect II Plot ID:	<u>NOR:</u> y ID: <u>2 YE</u>	11/30/2001 HYDE TH CAROLINA AR OLD PINE W 4
VEGETATION	na an an an Arthur an Arthur Mar an Arthur an Arthur an Arthur An Arthur an Arthur an Arthur an Arthur					
Dominant Plant Species	<u>Stratum</u>	Indicator	- <u>(1</u>)	Dominant Plant Species	<u>Stratum</u>	Indicator
1. <u>Aster dumosa</u>	herb	FAC	- 9.	Eleocharis tuberculosa	herb	FACW+
2. <u>Andropogon virginicus</u>	herb	FAC-	10.	Gelsemium sempervirens	herb	FAC
3. <u>Eupatorium capillifolium</u>	herb	FACU	- 11.	· · · · · · · · · · · · · · · · · · ·		· · · · · · · · · · · · · · · · · · ·
4. <u>Panicum verrucosum</u>	herb	FACW	- 12.		· · · · · · · · · ·	
5. <u>Baccharis halimifolia</u>	shrub	FAC	13.			in an
6. Dichanthelium consanguineu.	herb	FAC	14.	Pinus taeda	planted	
7Rubus sp	shrub	NA	15.	· · · · · · · · · · · · · · · · · · ·		
8. <u>Rhynchospora fascicularis</u>	herb	FACW+	- 16.		· · · · · · · · · · · · · · · · · · ·	
Percent of Dominant Species that are C Remarks:)BL, FACW, or FA	C (excluding FAC	C-).	>50%		
HYDROLOGY	1997 - 19					
Recorded Data (Describe in Rema Stream, Lake, or tide Aerial Photographs Other X No Recorded Data Available			We	tland Hydrology Indicators: Primary Indicators: Inundated Saturated in Upper Water Marks Drift Lines Sediment Deposits	n en	na na prana ina prana Na Sangan Maria Na Sangan Na Sangara Mari Pangaran
Field Observations:		e na segura de la sécul	n an	Drainage Patterns in Secondary Indicators (2 or m	n Wetlands	a ay shara wata ay shi a Quna wata
Depth of Surface Water:	<u>N/A</u> (in.)	an a		Oxidized Root Char Water-Stained Leav	nnels in Upper	12 Inches
Depth to Free Water in Pit:	<u>N/A</u> (in.)			X Local Soil Survey D X FAC-Neutral Test		
Depth to Saturated Soil:	<u>N/A</u> (in.)	ti shekara 🕴		Other (Explain in R	emarks)	a Ang ang ang ang ang ang ang ang ang ang a
			d	<mark>, ,, ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,</mark>		<u></u>

Remarks: No obvious surface hydrology indicators.

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Map Unit Name (Series and Phase):	Brookman loa	n	Drainage Class:	Very poorly drained
Taxonomy (Subg	roup)	Umbric Endoaqu	alfs	Field Observations Confirm Mapped Type	Yes No
Profile Descriptio Depth (inches)	<u>n:</u> <u>Horizon</u>	Matrix Color (<u>Munsell Moist)</u>	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
<u> </u>	<u></u>	<u> </u>			silty clay loam
6-14"	Btg1	10 YR 4/1	inational di seconda d Seconda di seconda di se		fine sandy clay loam
14-24+	Btg2	7.5 YR 5/1	10 YR 5/8	common, medium, distinct	fine sandy clay loam
		din Buga din digera.		· · · · · · · · · · · · · · · · · · ·	
					n an air an
<u> </u>		t Berner and Starker en			
Sulfidi x Aquic Reduc				Organic Streaking in Sa x Listed on Local Hydric J Listed on National Hydri Other (Explain in Rema	Soils List ic Soils List ırks)
Remarks:	Brookman loam	is classified as a Hydric A s	oil.		en anglo se awel Agower (* 1999) Gwolennes (* 1999) Gwolennes (* 1999) Gwolennes (* 1999) Gwolennes (* 1999) Gwolennes (* 1999)
WETLAND	DETERMI	NATION			
Hydrophytic Vego Wetland Hydrolog Hydric Soils Preso	gy Present?	Yes No Yes No Yes No	Is this	Sampling Point Within a Wetlan	d? Yes No

Remarks:

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Investigatorisv MARIHAI	ROAD MITIGATION SITE BREWSTER, TOM BARRETT	en ante a construction de la construcción de la construcción de la construcción de la construcción de la constr la construcción de la construcción d		Date: County: State:		11/30/2001 HYDE RTH CAROLINA
Do Normal Circumstances ex Is the site significantly distur Is this area a potential Proble (If needed, explain on rever	tist on the site? bed (Atypical Situation)? m Area?	Ye Ye	s No	Community Transect ID Plot ID:	ID: 2 Y	EAR OLD PINE W 5
VEGETATION						
Dominant Plant Species	Stratum	Indicator	Ď	ominant Plant Species	Stratum	Indicator
1. Erigeron canadensi	is <u>herb</u>	FACW	9.	Rubus sp.	shrub	NA
2. Baccharis halimifol	iashrub	FAC		Lonicera japonica	herb	FAC
3. Juncus effusus	herb	FACW	11	Polygonum sp	herb	FAC
4. Eupatorium capillifol	ium herb	FACU	12	Panicum verrucosum	herb	FACW
5. Panicum anceps	herb	FAC-	13.			
6. Typha sp.	herb	OBL	14	Pinus taeda	planted	
7. Solidago fistulosa	herb	FAC+	15.	·		
8. Eleocharis tuberculo	sa herb	FACW+	16.		latite and a	
Percent of Dominant Species	that are OBL, FACW, or FAC	C (excluding FA	 .c-)	>50%	an a	
Percent of Dominant Species Remarks:	that are OBL, FACW, or FAC	C (excluding FA	 	>50%		
	that are OBL, FACW, or FAC	C (excluding FA				
Remarks: HYDROLOGY Recorded Data (Describ	e in Remarks) ke, or tide Gauge tographs	C (excluding FA	Wetla	> 50%	12 Inches	

Map Unit Name (Series and Phase):	Brookman	loam	Drainage Class: Field Observations	Very poorly drained
Taxonomy (Subgroup)	Umbric Endo	aqualfs	Confirm Mapped Type	Yes No
Profile Description: Depth (inches) Horizon	Matrix Color <u>(Munsell Moist)</u>	Mottle Colors (<u>Munsell Moist)</u>	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
<u> </u>	<u>10 YR 3/1</u>		en and an	silt loam;many fine roots
<u>8-16"</u> <u>Btg1</u>	<u> </u>	2.5 Y 6/6	few, medium, distint	fine sandy clay loam
<u>16-24+</u> Btg2	7.5 YR 5/1	7.5 YR 5/8	common, medium, distinct	fine sandy clay
	an a			
			· · · · · · · · · · · · · · · · · · ·	
Hydric Soil Indicators: Histosol Histic Epipedon Sulfidic Odor X Aquic Moisture I Reducing Condit X Gleyed or Low-C Remarks: Brookman	Regime tions	A soil.	Concretions High Organic Content ir Organic Streaking in Sai Listed on Local Hydric S Listed on National Hydr Other (Explain in Rema	Soils List ic Soils List
WETLAND DETE	RMINATION			
Hydrophytic Vegetation Pre Wetland Hydrology Present Hydric Soils Present?	the state of the s	Io Io Io Is this	Sampling Point Within a Wetland	d? Yes No
Remarks:				
				Approved by HQUSACE 3/92

Project/Site:BISHOP ROAD MITIGATION SITEApplicant/Owner:NCDOTInvestigator(s):CINDY CARR, HAROLD BRADYDo Normal Circumstances exist on the site?Is the site significantly disturbed (Atypical Situation)?Is this area a potential Problem Area?(If needed, explain on reverse)	Yes Yes Yes	Date:11/30/2001County:HYDEState:NORTH CAROLINANoCommunity ID:Pine cutoverTransect ID:XNoPlot ID:I	
VEGETATION		Dominant Plant Species Stratum Indicator	
Dominant Plant Species Stratum	Indicator		
1. Dichanthelium consanguineum herb	FAC		
2. Baccharis halimifolia shrub	FAC	10.	<u> </u>
3. Solidago altissima herb	FACU+	··11. ··	
4. Osmunda regalis herb	OBL	12.	· . · .
5. <u>Rubus spp.</u> <u>shrub</u>	FAC	13.	
6. Juncus effusus herb	FACW+	14	
7. Lonicera japonica vine	FAC	15	:
8. Pteridium aquilinum herb	FACU	16	:
	and the second		
Percent of Dominant Species that are OBL, FACW, or F	AC (excluding FAC)>50%	· · · ·
Percent of Dominant Species that are OBL, FACW, or F Remarks:	AC (excluding FAC	> <i>50%</i>	
Remarks:	AC (excluding FAC	>50%	
	AC (excluding FAC	Wetland Hydrology Indicators: Primary Indicators: Inundated Saturated in Upper 12 Inches Water Marks Drift Lines	
Remarks: HYDROLOGY Recorded Data (Describe in Remarks) Recorded Data (Describe in Remarks) Acrial Photographs Other X No Recorded Data Available Field Observations:	AC (excluding FAC	Wetland Hydrology Indicators: Primary Indicators: Inundated Saturated in Upper 12 Inches Water Marks Drift Lines Sediment Deposits Drainage Patterns in Wetlands Secondary Indicators (2 or more required):	
Remarks: HYDROLOGY Recorded Data (Describe in Remarks) Stream, Lake, or tide Gauge Aerial Photographs Other XNo Recorded Data Available Field Observations: Depth of Surface Water: N/A(in.)	AC (excluding FAC	Wetland Hydrology Indicators: Primary Indicators: Inundated Saturated in Upper 12 Inches Water Marks Drift Lines Sediment Deposits Drainage Patterns in Wetlands Secondary Indicators (2 or more required): Oxidized Root Channels in Upper 12 Inches Water-Stained Leaves	
Remarks: HYDROLOGY Recorded Data (Describe in Remarks) Recorded Data (Describe in Remarks) Acrial Photographs Other X No Recorded Data Available Field Observations:	AC (excluding FAC	Wetland Hydrology Indicators: Primary Indicators: Inundated Saturated in Upper 12 Inches Water Marks Drift Lines Sediment Deposits Drainage Patterns in Wetlands Secondary Indicators (2 or more required): Oxidized Root Channels in Upper 12 Inches	

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Map Unit Name (Series and Phase):	Brookman	loam	Drainage Class:	Very poorly
Taxonomy (Subgroup)	Umbric Endo		Field Observations Confirm Mapped Type?	Yes No
<u>Profile Description:</u> Depth <u>(inches) Horizon</u>	Matrix Color <u>(Munsell Moist)</u>	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
<u>0-12" A</u>	7.5 YR 3/1	and a second		sandy loam
<u>12-24" Btg</u>	2.5 YR 6/1	7.5 YR 6/8	many, medium, distinct	sandy clay loam
· · · · · · · · · ·				
			· · · · · · · · · · · · · · · · · · ·	
· · · · · · · · · · · · · · · · · · ·				
Hydric Soil Indicators:			n an	
Histosol Histic Epipedon Sulfidic Odor X Aquic Moisture Re Reducing Condition X Gleyed or Low-Chr	ns		Concretions High Organic Content in Organic Streaking in San Listed on Local Hydric S Listed on National Hydrid Other (Explain in Remar	oils List c Soils List
Remarks: Brookman la	oam is a Hydric A soil.			
WETLAND DETER	MINATION			
Hydrophytic Vegetation Presei Wetland Hydrology Present? Hydric Soils Present?	Yes	No No No Is this f	Sampling Point Within a Wetland	? Yes <u>No</u>
Remarks:				
				approved by HQUSACE 3/92

Project/Site: BISHOP ROAD M Applicant/Owner: NCDOT Investigator(s): CINDY CARR, HAR	·	na (na 1997) An Angaratan An Angaratan (na 1997) An		Date: County: State:		1/30/2001 HYDE H CAROLINA
Do Normal Circumstances exist on the Is the site significantly disturbed (Atyr Is this area a potential Problem Area? (If needed, explain on reverse)	1	Yes Yes Yes	No No No	Community Transect ID Plot ID:		ne cutover. X 2
VEGETATION	n na sana ang kang kang kang kang kang kang ka	a and a second second				
Dominant Plant Species	Stratum	Indicator	<u>Dominan</u>	t Plant Species	Stratum	Indicator
1. Dichanthelium consanguineum	herb	FAC	9. <u>Eupatori</u>	um capillifolium	herb	FACU
2. Baccharis halimifolia	shrub	FAC	10. <u>Androp</u>	ogon virginicus	herb	FAC-
3. Solidago altissima	herb	FACU+	11. Arundi	naria gigantea	<u>herb</u>	FACW
4. Panicum virgatum	herb	FAC	12. Erian	thus gigantea	herb	FACW
5. <u>Rubus spp.</u>	shrub	FAC	13.			
6. Juncus effusus	herb	FACW+	14.	· · · · · · · · · · · · · · · · · · ·		
7. Lonicera japonica	vine	FAC	15.		i yang di k	
8. Pteridium aquilinum	herb	FACU	16.	· · · · ·		
Percent of Dominant Species that are C	DBL, FACW, or FAC	(excluding FAC-)	>50%		
HYDROLOGY	······	n Service (Service) Service Service			lena gran	a geografia de la composición de la co Composición de la composición de la comp
Recorded Data (Describe in Rem Stream, Lake, or tide Aerial Photographs Other X No Recorded Data Available			Primary In	ology Indicators: idicators: Inundated Saturated in Upper Water Marks Drift Lines	12 Inches	
Field Observations: Depth of Surface Water:	<u>N/A</u> (in.)		Secondar	Sediment Deposits Drainage Patterns ir y Indicators (2 or m Oxidized Root Char	ore required): mels in Upper l	2 Inches
Depth to Free Water in Pit:	20 (in.)		X	Water-Stained Leav Local Soil Survey D FAC-Neutral Test		
Depth to Saturated Soil:	<u>15</u> (in.)			Other (Explain in R	emarks)	
Remarks: No observed hydrold	gical indicators	• • • • • • • • • • • • •				

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Map Unit Name (Series and Phase):	Argent lo	oam.	Drainage Class:	Very poorly
Taxonomy (Subgroup)	Typic Endoc	aqualfs	Field Observations Confirm Mapped Type	Yes No
<u>Profile Description:</u> Depth (inches) <u>Horizon</u>	Matrix Color <u>(Munsell Moist)</u>	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
<u> </u>	5 YR 4/1		· · · · · · · · · · · · · · · · · · ·	Organic ilty loam, friable, many fine roots
	2.5 YR 6/1	10 YR 6/8	many, medium, distinct	silty clay, firm, sticky
<u>12-24+</u> <u>Btg</u>	2.5 1R 0/1	10 1K 0/8	many, meatum, aistinci	sitty ciay, jirm, sucky
			• • • • • • • • • • • • • • • • • • •	
	· · · · · · · · · · · · · · · · · · ·			
Hydric Soil Indicators: Histosol Histic Epipedon Sulfidic Odor X Aquic Moisture Regim Reducing Conditions X Gleyed or Low-Chroma Remarks: Soil saturated a			Concretions High Organic Content Organic Streaking in S Listed on Local Hydric Listed on National Hydric Other (Explain in Rem	Soils List Iric Soils List
	and a second second second second second second second second second second			an an tha an an an tha an an an tha an an An an
WETLAND DETERM	INATION	a yang balang serah serah serah serah Tang		
Hydrophytic Vegetation Present? Wetland Hydrology Present? Hydric Soils Present?	Yes	To To To Is this	s Sampling Point Within a Wetla	nd? Yes No
Remarks:				al ar staff og lander Gan er staff og lagdas og la Gan lander og her som staff

Project/Site: BISHOP ROAD MITIGATION SITE Applicant/Owner: NCDOT Investigator(s): CINDY CARR, HAROLD BRADY			Date: County: State:	11/30/2001 <u>HYDE</u> NORTH CAROLINA
Do Normal Circumstances exist on the site?	Yes	No	Community	D: Pine cutover
Is the site significantly disturbed (Atypical Situation)?	Yes		Transect ID	
Is this area a potential Problem Area? (If needed, explain on reverse)	Yes	No	Plot ID:	3
VEGETATION		nin Karala (Karalan) (Karalan) La Karalan		
Dominant Plant Species Stratum	Indicator	Dominal	nt Plant Species	Stratum Indicator
1. Pinus taeda shrub	planted	- <u>9. 1. 1</u>		
2. Baccharis halimifolia shrub	FAC	10. ··· <u>·</u>		
3. Solidago altissima herb	FACU+		· · · · · · · · · · · · · · · · · · ·	
4. Panicum virgatum herb	FAC	12.	and an	and a second sec
5. <u>Arundinaria gigantea</u> herb	FACW	13	n a geologica nam	n an an an Arland A Arland Arland Arland Arland Arland
6. Eupatorium capillifolium herb	FACU	14.	······	
7. <u>Andropogon virginicus</u> herb	FAC-	15.	· ·	
8. •••		16.	·	
·····				
Percent of Dominant Species that are OBL, FACW, or FAC	(excluding FAC		>50%	
Percent of Dominant Species that are OBL, FACW, or FAC	(excluding FAC	 C-).	>50%	
Percent of Dominant Species that are OBL, FACW, or FAC Remarks:	(excluding FAC	 C-).	>50%	
	(excluding FAC	 2-)	>50%	
	(excluding FAC)	>50%	
Remarks:	(excluding FAC		>50%	
Remarks: HYDROLOGY Recorded Data (Describe in Remarks)	(excluding FAC	Wetland Hyd	rology Indicators:	
Remarks: HYDROLOGY Recorded Data (Describe in Remarks) Stream, Lake, or tide Gauge	(excluding FAC	Wetland Hyd	rology Indicators: indicators:	
Remarks: HYDROLOGY Recorded Data (Describe in Remarks) Stream, Lake, or tide Gauge Aerial Photographs Other	(excluding FAC	Wetland Hyd	rology Indicators: indicators: Inundated Saturated in Upper	12 Inches
Remarks: HYDROLOGY Recorded Data (Describe in Remarks) Stream, Lake, or tide Gauge Aerial Photographs	(excluding FAC	Wetland Hyd	rology Indicators: indicators: Inundated Saturated in Upper Water Marks	12 Inches
Remarks: HYDROLOGY Recorded Data (Describe in Remarks) Stream, Lake, or tide Gauge Aerial Photographs Other	(excluding FAC	Wetland Hyd	Irology Indicators: Indicators: Inundated Saturated in Upper Water Marks Drift Lines Sediment Deposits	a di serie da serie Serie da serie da ser Serie da serie da ser
Remarks: HYDROLOGY Recorded Data (Describe in Remarks) Stream, Lake, or tide Gauge Aerial Photographs Other	(excluding FAC	Wetland Hyd Primary I	Irology Indicators: Indicators: Inundated Saturated in Upper Water Marks Drift Lines Sediment Deposits Drainage Patterns in	1 Wetlands
Remarks: HYDROLOGY Recorded Data (Describe in Remarks) Recorded Data (Describe in Remarks) Acrial Photographs Other No Recorded Data Available	(excluding FAC	Wetland Hyd Primary I	rology Indicators: indicators: Inundated Saturated in Upper Water Marks Drift Lines Sediment Deposits Drainage Patterns in ry Indicators (2 or m Oxidized Root Chan	1 Wetlands fore required): nuels in Upper 12 Inches
Remarks: HYDROLOGY Recorded Data (Describe in Remarks) Stream, Lake, or tide Gauge Aerial Photographs Other X No Recorded Data Available Field Observations:	(excluding FAC	Wetland Hyd Primary I Seconda	rology Indicators: indicators: Inundated Saturated in Upper Water Marks Drift Lines Sediment Deposits Drainage Patterns in ry Indicators (2 or m Oxidized Root Chan Water-Stained Leav Local Soil Survey D	1 Wetlands fore required): nuels in Upper 12 Inches es
Remarks: HYDROLOGY Recorded Data (Describe in Remarks) Stream, Lake, or tide Gauge Aerial Photographs Other XNo Recorded Data Available Field Observations: Depth of Surface Water: N/A(in.) Depth to Free Water in Pit: N/A(in.)	(excluding FAC	Wetland Hyd Primary I Seconda	rology Indicators: indicators: Inundated Saturated in Upper Water Marks Drift Lines Sediment Deposits Drainage Patterns in ry Indicators (2 or m Oxidized Root Chan Water-Stained Leav Local Soil Survey D FAC-Neutral Test	n Wetlands lore required): nnels in Upper 12 Inches es lata
Remarks: HYDROLOGY	(excluding FAC	Wetland Hyd Primary I Seconda	rology Indicators: indicators: Inundated Saturated in Upper Water Marks Drift Lines Sediment Deposits Drainage Patterns in ry Indicators (2 or m Oxidized Root Chan Water-Stained Leav Local Soil Survey D	n Wetlands lore required): nnels in Upper 12 Inches es lata
Remarks: HYDROLOGY Recorded Data (Describe in Remarks) Stream, Lake, or tide Gauge Aerial Photographs Other XNo Recorded Data Available Field Observations: Depth of Surface Water: N/A(in.) Depth to Free Water in Pit: N/A(in.)		Wetland Hyd Primary I Seconda	rology Indicators: indicators: Inundated Saturated in Upper Water Marks Drift Lines Sediment Deposits Drainage Patterns in try Indicators (2 or m Oxidized Root Chan Water-Stained Leav Local Soil Survey D FAC-Neutral Test Other (Explain in R	n Wetlands lore required): nnels in Upper 12 Inches es lata

Map Unit Name		1	During on Class	Vatu popula	
(Series and Phase):			Drainage Class: Very poorly Field Observations		
Taxonomy (Subgroup)	Typic Ende	paqualfs	Confirm Mapped Type'	Yes No	
Profile Description: Depth (inches) Horizon 0-8" A	Matrix Color (Munsell Moist) 5 YR 4/1	Mottle Colors (<u>Munsell Moist)</u>	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc. ilty loam, many fine roots	
8-24" Btg	2.5 YR 6/1	7.5 YR 6/8		silty clay	
Hydric Soil Indicators: Histosol Histic Epipedon Sulfidic Odor X Aquic Moisture Regime X Reducing Conditions X Gleyed or Low-Chroma	Colors		Concretions High Organic Content in S Organic Streaking in Sand X Listed on Local Hydric Soi Listed on National Hydric Other (Explain in Remark	ls List Soils List	
Remarks: Soil saturated at Methods Soil Saturated at Methods Source Sour	15" in Btg horizon NATION				
Hydrophytic Vegetation Present? Wetland Hydrology Present? Hydric Soils Present?	Yes	No No No Is this S	ampling Point Within a Wetland?	Yes No	
Remarks:				n e an suite a suite a suite airte de la charachta ann an suite airte de la charachta ann an suite an suite ann an suite ann an suite an suite an suite	
			Ap	proved by HQUSACE 3/92	

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Project/Site: BISHOP ROAD MITTO Applicant/Owner: NCDOT Investigator(s): CINDY CARR, HAROLI Do Normal Circumstances exist on the site Is the site significantly disturbed (Atypical Is this area a potential Problem Area? (If needed, explain on reverse)	BRADY	Yes Yes Yes	No No No		Date: County: State: Community Transect ID Piot ID:		11/30/2001 HYDE TH CAROLINA Pine cutover X 4
VEGETATION		a sa ang					
Dominant Plant Species	Stratum	Indicator		Dominan	t Plant Species	Stratum	Indicator
1. Dichanthelium consanguineum	herb	FAC	9.	Eupator	ium capillifolium	herb	FACU
2. Baccharis halimifolia	shrub	FAC	· 10.	Smila	x rotundifolia	vine	FAC
3. Solidago altissima	herb	FACU+	11.	Arundi	inaria gigantea	herb	FACW
4. Panicum virgatum	herb	FAC	12.	Poly	vgonum spp.	herb	FAC
5. <u>Rubus spp</u> .	shrub	FAC	13.	Myric	a heterophylla	shrub	FACW
6. Juncus effusus	herb	FACW+	14.	P	inus taeda	shrub	planted
7. Eleocharis spp.	herb	FACW	15.	x			
8. Solidago microchephala	herb	FACU	16.			<u></u>	
Percent of Dominant Species that are OBL	, FACW, or F	AC (excluding FAC	-).	<u> </u>	>50%		
HYDROLOGY	n na serve	and the second		an a		in an	
Recorded Data (Describe in Remarks Stream, Lake, or tide Ga Aerial Photographs Other X No Recorded Data Available			We	Primary II	Inundated Saturated in Upper Water Marks Drift Lines Sediment Deposits		
Field Observations:	n an	a da anti- anti-anti-anti-anti-anti-anti-anti-anti-		Seconda	Drainage Patterns in ry Indicators (2 or m	n Wetlands hore required):	an a
Depth of Surface Water:	<u>/A</u> (in.)				Oxidized Root Cha Water-Stained Leav	nnels in Upper	12 Inches
Depth to Free Water in Pit:	5_(in.)			X	Local Soil Survey I FAC-Neutral Test		
Depth to Saturated Soil:	<u>8 (in.)</u>		•		Other (Explain in R	emarks)	
Remarks:							

Map Unit Name		
(Series and Phase):	Brookman loam	Drainage Class: Very poorly Field Observations
Taxonomy (Subgroup)	Umbric Endoaqualfs	Confirm Mapped Type? Yes No
Profile Description: Depth (inches) Horizon	Matrix Color Mottle Colors (Munsell Moist) (Munsell Moist) 5 YR 3/1	Mottle Texture, Concretions, Abundance/Contrast Structure, etc. mucky silt loam, bedded row
14-24+ Btg	2.5 YR 6/1 7.5 YR 6/8	many, medium, distinctsilty clay
Hydric Soil Indicators: Histosol Sulfidic Odor X Aquic Moisture Re X Reducing Conditio X Gleyed or Low-Chr	ns	Concretions High Organic Content in Surface Layer in Sandy Soils Organic Streaking in Sandy Soils Listed on Local Hydric Soils List Listed on National Hydric Soils List Other (Explain in Remarks)
Remarks: Soil saturate	ed at 8 inches. MINATION	
Hydrophytic Vegetation Prese Wetland Hydrology Present? Hydric Soils Present?	Yes No	s Sampling Point Within a Wetland? Yes No
Remarks:		

Project/Site: BISHOP ROAD MITIGATION SITE Applicant/Owner: NCDOT Investigator(s): CINDY CARR, HAROLD BRADY Do Normal Circumstances exist on the site?	Yes		nty: :: <u>NOR</u> umunity ID: P	11/30/2001 HYDE TH CAROLINA
Is the site significantly disturbed (Atypical Situation)? Is this area a potential Problem Area? (If needed, explain on reverse)	Yes Yes	No Tran No Plot	sect ID: ID:	<u>X</u> 5
VEGETATION	ala false o stora a soa	n shini ta shike na fara sa sa		
Dominant Plant Species Stratum	Indicator	Dominant Plant Specie	es <u>Stratum</u>	Indicator
1. Carex sp. herb	FACW	9. <u>Acer rubrum</u>	shrub	FAC
2. <u>Baccharis halimifolia</u> shrub	FAC	10. Chasmanthium laxu	m herb	FACW-
3. Solidago altissima herb	FACU+	11. Pinus taeda	shrub	planted
4. Scirpus cyperinus herb	FACW	12. Panicum verrucosu	m herb	FACW
5. Rhyncospora inexpansa herb	FACW	1 3.	en et tangt ente 	
6. Juncus effusus herb	FACW+	14.	· · · · · · · · · · · · · · · · · · ·	· · ·
7. Myrica cerifera shrub	FAC+	15.		
8. Andropogon virginicus herb	FAC-	16.		
Percent of Dominant Species that are OBL, FACW, or FAC	(excluding FAC-)>	>75%	
Remarks:				1
Condias.				
	·		w.,	
HYDROLOGY		n (harrier and an		zerozani zerozani eta zerozani. Terrezentzen eta
Recorded Data (Describe in Remarks) Stream, Lake, or tide Gauge		Wetland Hydrology Indicat Primary Indicators:	ors:	
Acrial Photographs Other		Inundated	Upper 12 Inches	
X No Recorded Data Available		Water Marks		
		Drift Lines Sediment Dep		en de la composition de la composition En esta de la composition de la composit
Field Observations:	and the second second	Secondary Indicators (terns in Wetlands (2 or more required):	
Depth of Surface Water: <u>N/A</u> (in.)		X Oxidized Roo Water-Staine	ot Channels in Upper d Leaves	12 Inches
Depth to Free Water in Pit: <u>N/A</u> (in.)		X Local Soil Su X FAC-Neutral	rvey Data	
Depth to Saturated Soil: <u>N/A</u> (in.)			in in Remarks)	
Remarks:				

Map Unit Name (Series and Phase):	Yonges lo	am	Drainage Class:	Poorly
Taxonomy (Subgroup)	Typic Endoa	qualfs	Field Observations Confirm Mapped Typ	e Yes No
Profile Description: Depth (inches) Horizon <u>0-2" A</u> 2-12" Btgl	Matrix Color (<u>Munsell Moist)</u> <u>10 YR 3/2</u> 2.5 Y 6/3	Mottle Colors (Munsell Moist) 2.5 Y 6/8	Mottle Abundance/Contrast <i>common, medium,</i> distinct 0.	Texture, Concretions, Structure, etc. <u>silt loam</u> xidized rhizospheres, sandy clay loa
<u>2-12" Btg1</u> <u>12-24+ Btg2</u>	2.5 Y 6/1	2.5 T 6/8	<u></u>	fine sandy clay
Hydric Soil Indicators: Histosol Histic Epipedon Sulfidic Odor X Aquic Moisture Regim Reducing Conditions Gleyed or Low-Chrom			Concretions High Organic Conten Organic Streaking in Listed on Local Hydr Listed on National Hy Other (Explain in Re	ic Soils List ydric Soils List
Remarks: Yonges is a hyd	ric A soil. Soil is in oxidi	ized state.		
WETLAND DETERM	INATION			
Hydrophytic Vegetation Present? Wetland Hydrology Present? Hydric Soils Present?	Yes N Yes N Yes N	ío	is Sampling Point Within a Wetl	and? Yes No
Remarks:				Approved by HOUSACE 3/92

Project/Site: BISHOP ROAD MITIGATION SITE Applicant/Owner: NCDOT Investigator(s): CINDY CARR, HAROLD BRADY		Dat Coi Stai	inty:	11/29/2001 HYDE TH CAROLINA
Do Normal Circumstances exist on the site? Is the site significantly disturbed (Atypical Situation)? Is this area a potential Problem Area? (If needed, explain on reverse)	Yes Yes Yes	No	mmunity ID: F nsect ID: t ID:	Pine cutover Y I
VEGETATION	a second da seconda para National	an a shan an gunan a shiri dan Tarihi	in a state of the	
Dominant Plant Species Stratum	Indicator	Dominant Plant Spec	ies <u>Stratum</u>	Indicator
1. Typha latifolia herb	OBL COBL	9. ***	<u> </u>	·
2. Baccharis halimifolia shrub	FAC	*10.***********************************		· · · · · · · ·
3. Solidago altissima herb	FACU+	11.	· · · · · · · · · · · ·	
4. Myrica heterophylla shrub	FACW	12.	······	
5. <u>Cyperus sp.</u> herb	FAC	13.		·
6. Andropogon virginicus herb	FAC-	14.	· · · · ·	· · ·
7. Distichlis spicata herb	FACW	15.		
8. Cladium jamaicense herb	OBL	16		
Percent of Dominant Species that are OBL, FACW, or FA	C (excluding FAC).	>50%	
Remarks:				
HYDROLOGY	ne og forske stært og se med Statenske stært og se med Statenske stært og se stært	a na serie a serie de la s Serie de la serie de la ser	an tha an	n at an ann ann an Ar Ann an Ar
Recorded Data (Describe in Remarks) Stream, Lake, or tide Gauge Aerial Photographs Other X No Recorded Data Available		Wetland Hydrology Indica Primary Indicators: Inundated Saturated in Water Mark Drift Lines Sediment D	a Upper 12 Inches	an a
Field Observations:		Drainage Pa	atterns in Wetlands (2 or more required):	
		occontraty introators	A 2 OF MOLE TEQUIED):	
Depth of Surface Water:N/A(in.)		Oxidized Re	oot Channels in Upper	12 Inches
Depth of Surface Water: N/A (in.) Depth to Free Water in Pit: N/A (in.)		Oxidized Re Water-Stain X Local Soil S	ed Leaves Survey Data	12 Inches
an a		Oxidized Ro Water-Stain X Local Soil S X FAC-Neutra	ed Leaves Survey Data	12 Inches

Map Unit Name (Series and Phase):	(Series and Phase): Brookman loam		Very poorly	
Taxonomy (Subgroup)			Yes No	
<u>Profile Description:</u> Depth <u>(inches)</u> <u>Horizon</u>	Matrix Color Mottle Colors (Munsell Moist) (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.	
<u>0-14" A</u>	7.4 YR 3/1	an a share an share a finn an sheri a s	sandy loam	
<u>14-24+</u> <u>Btg</u>	7.5 YR 7/1 7.5 YR 7/8	many, medium, distinct	sandy clay loam	
· · · · · · · · · · · · ·	· · · · · · · · · · · · · · · · · · ·			
		· · · · · · · · · · · · · · · · · · ·		
······································				
Hydric Soil Indicators: Histosol Sulfidic Odor Aquic Moisture Reg Reducing Condition: X Gleyed or Low-Chro Remarks: Brookman loo	${f s}$, the constant of the second secon	Concretions High Organic Content in Organic Streaking in San Listed on Local Hydric So Listed on National Hydric Other (Explain in Remar	oils List 2 Soils List	
WETLAND DETERM	MINATION			
Hydrophytic Vegetation Present Wetland Hydrology Present? Hydric Soils Present?	Yes No	Sampling Point Within a Wetland	Yes No	
Remarks:				

Appendix E

Design Sheets

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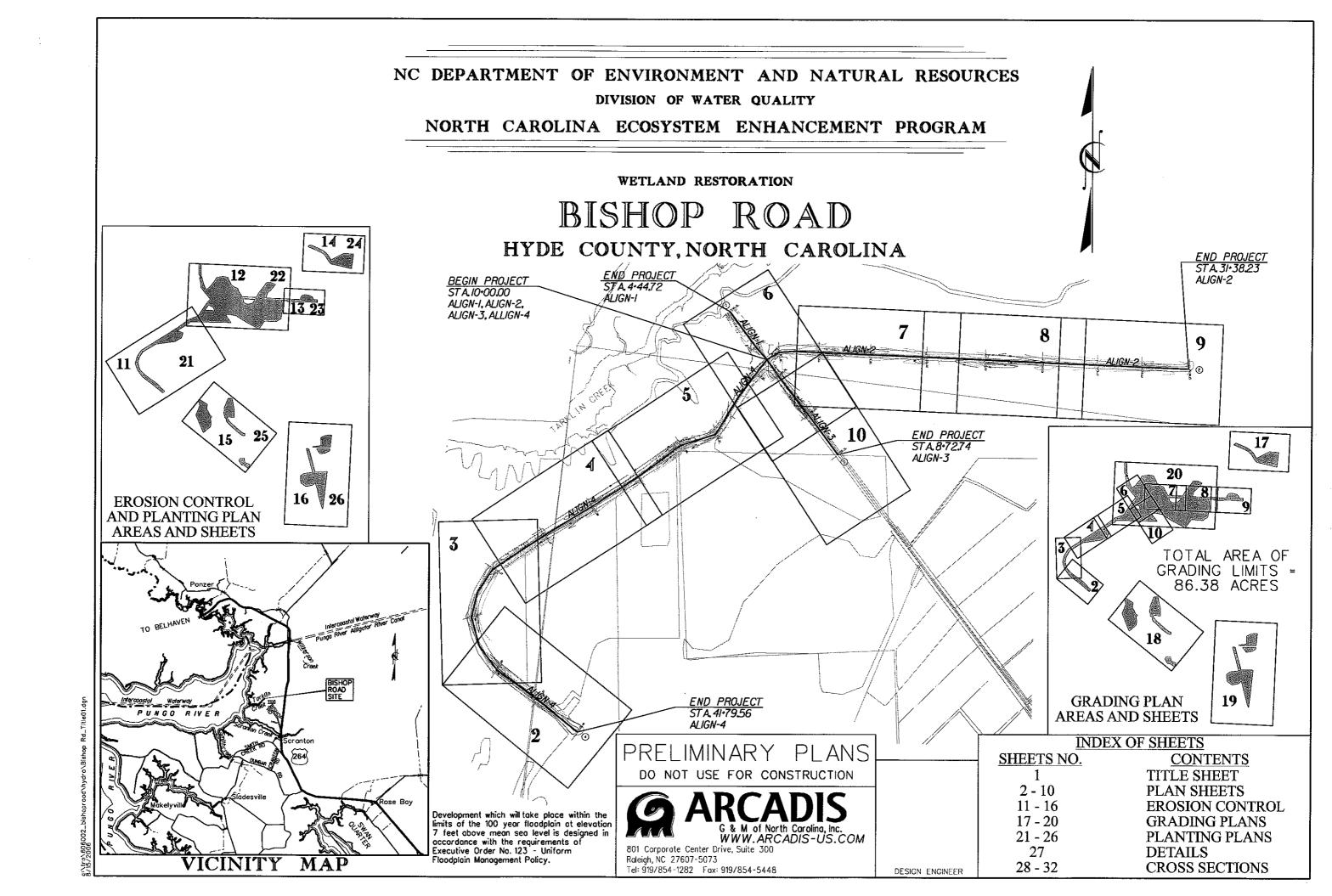
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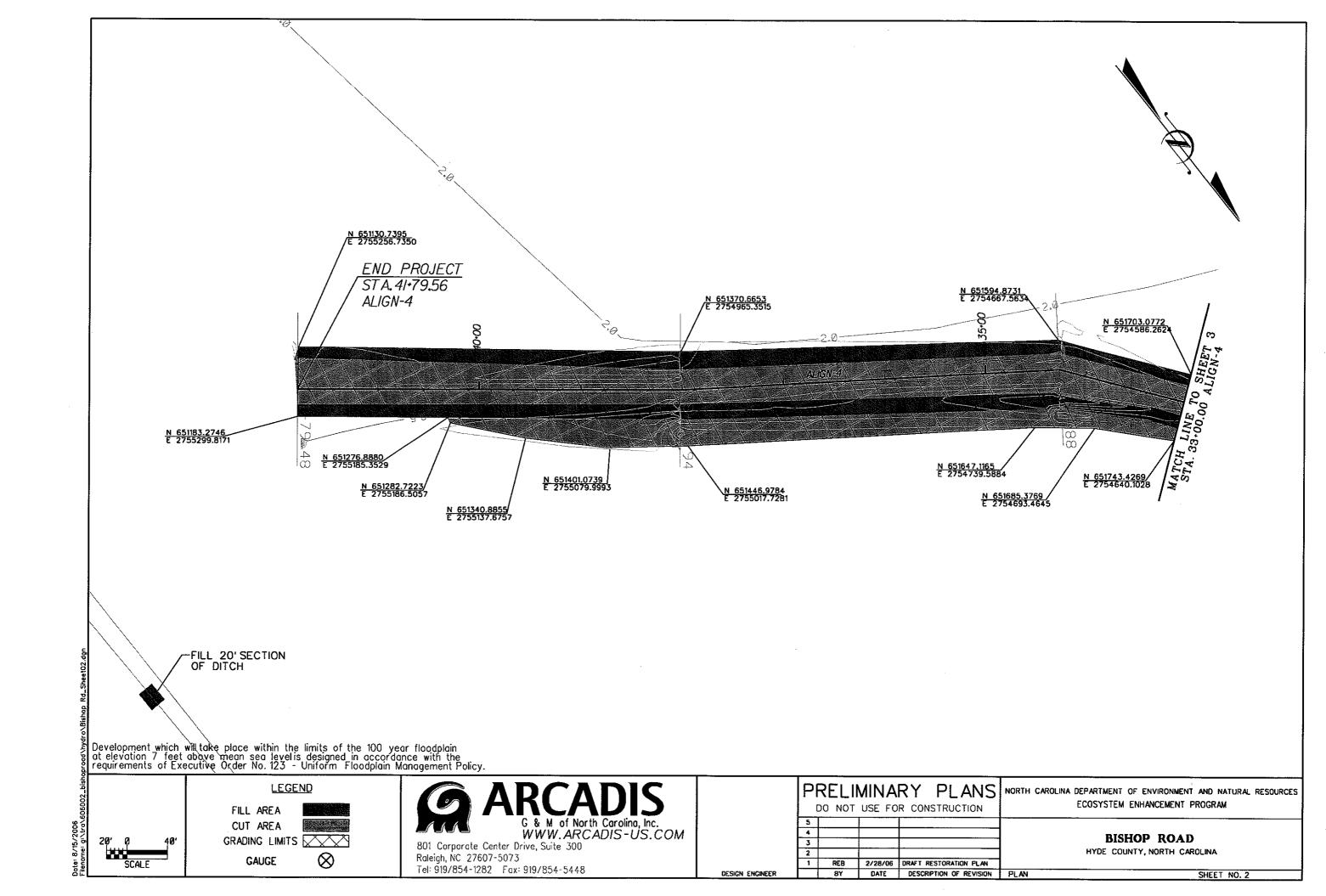
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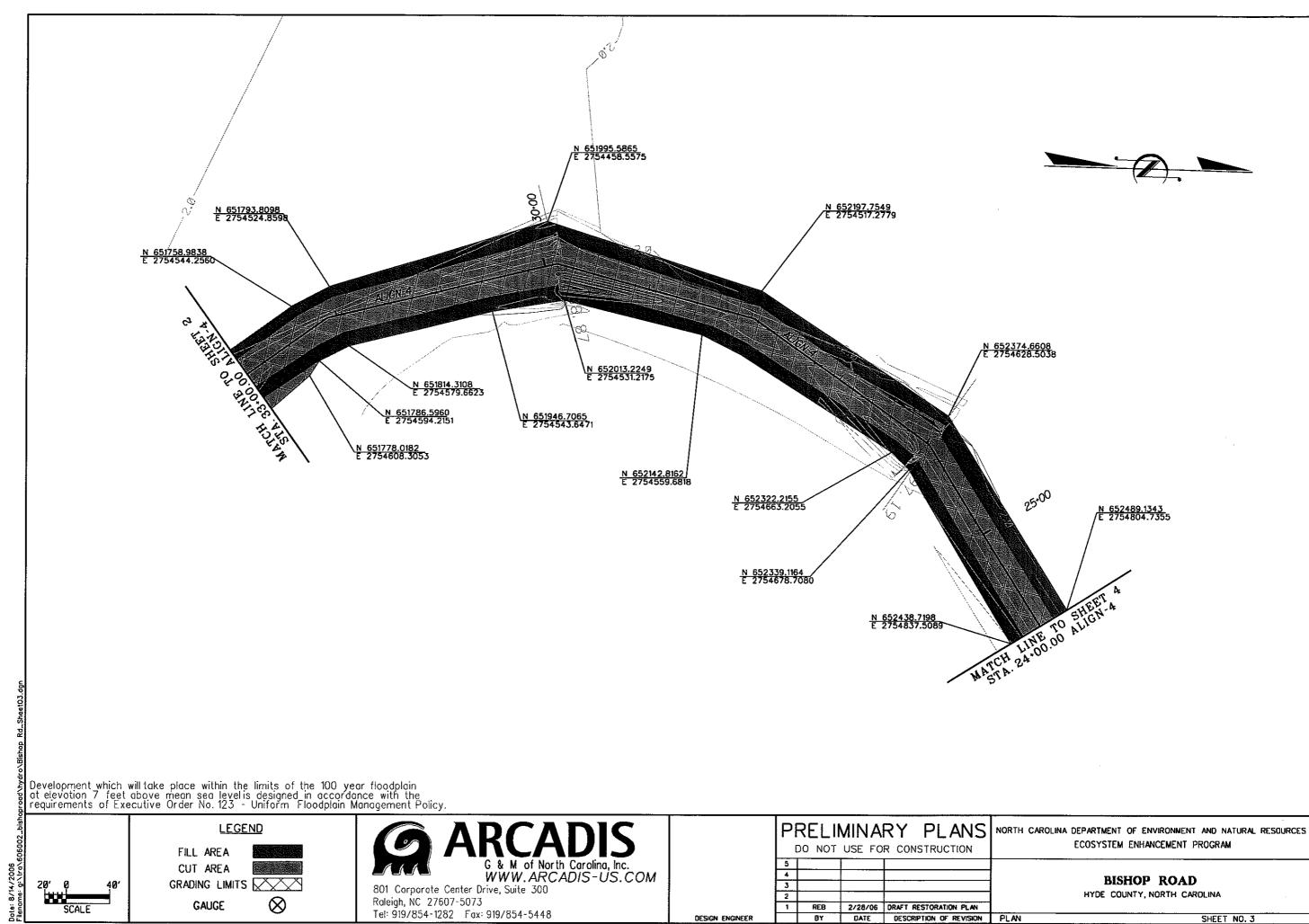
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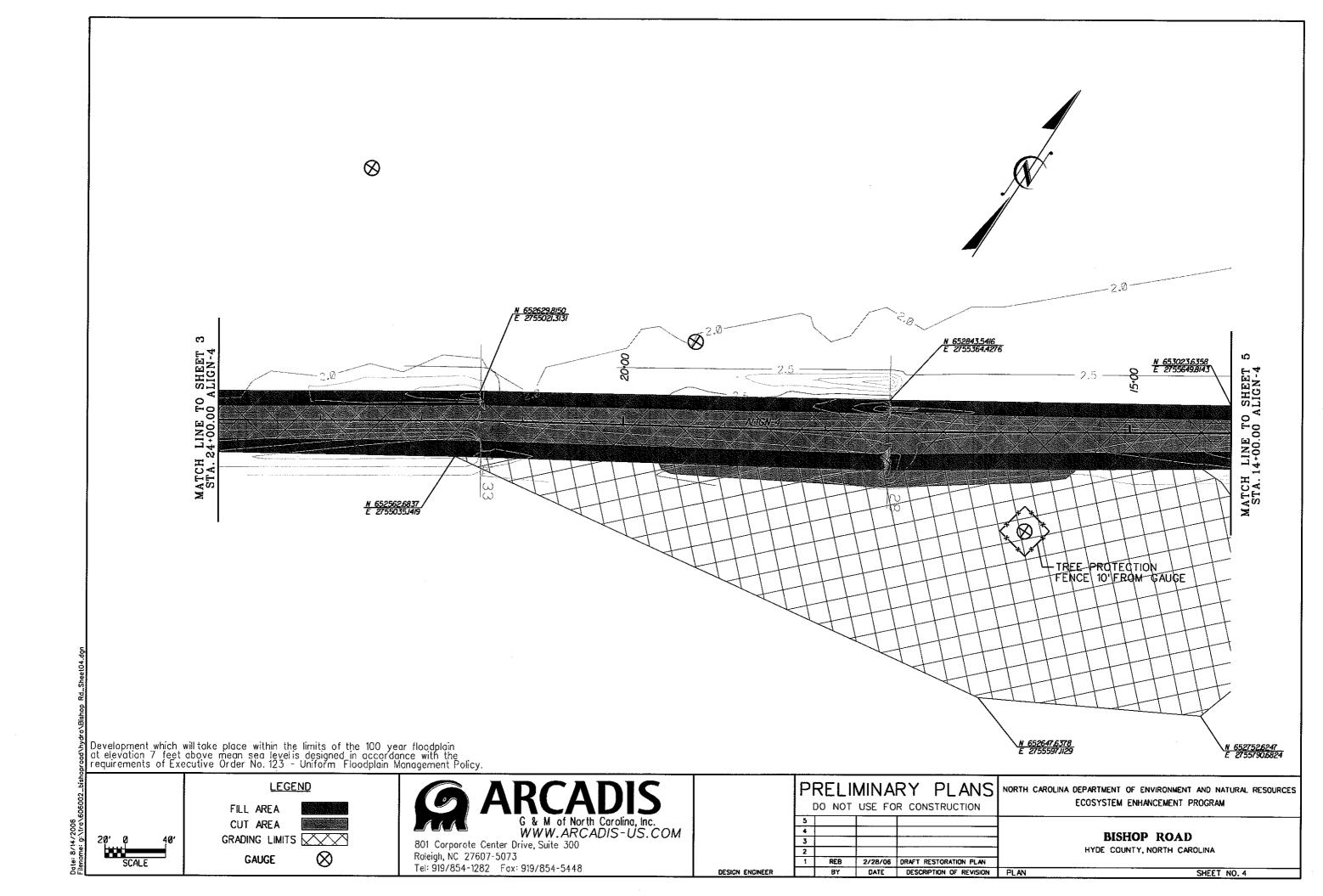
Appendix E

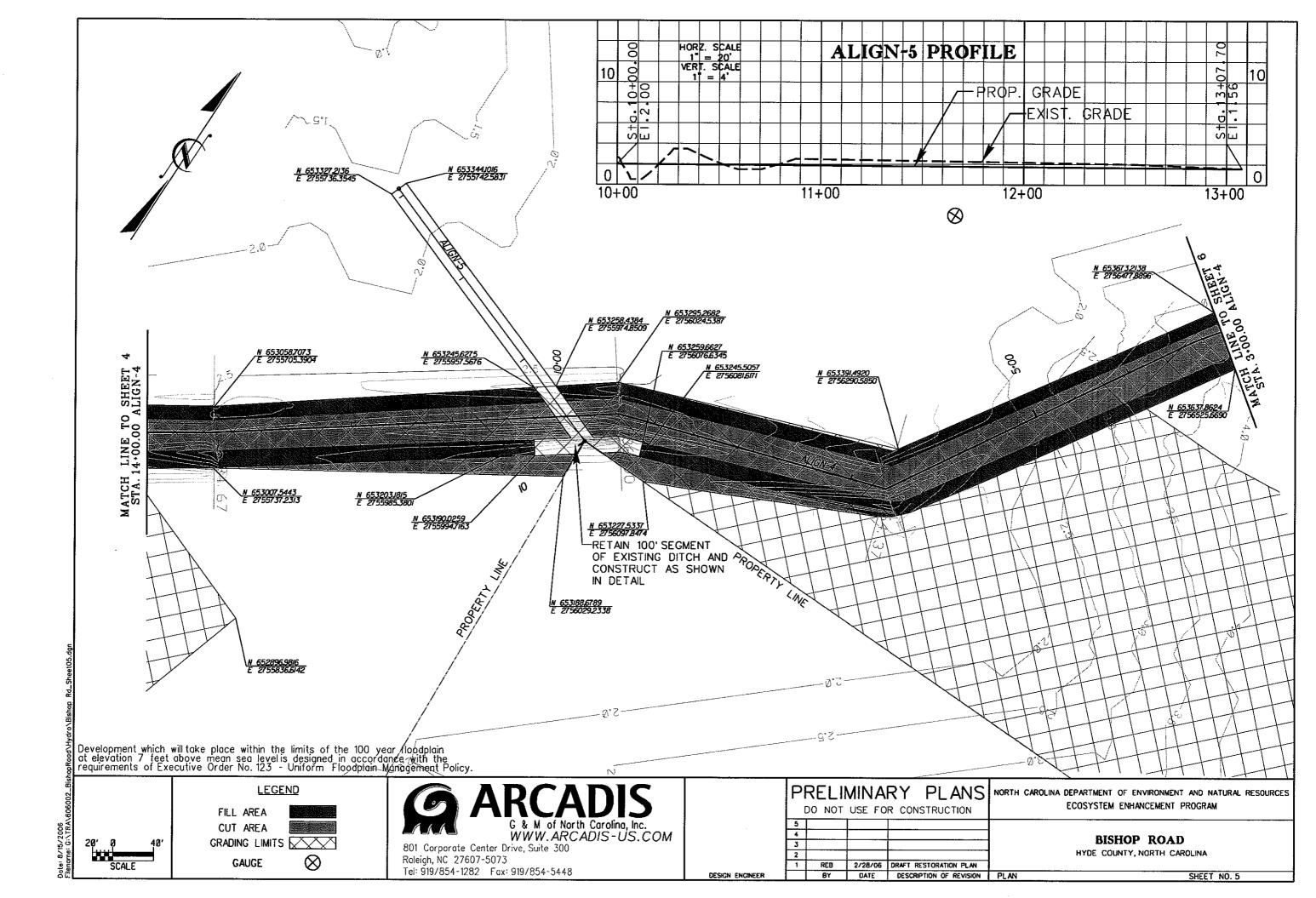
Design Sheets

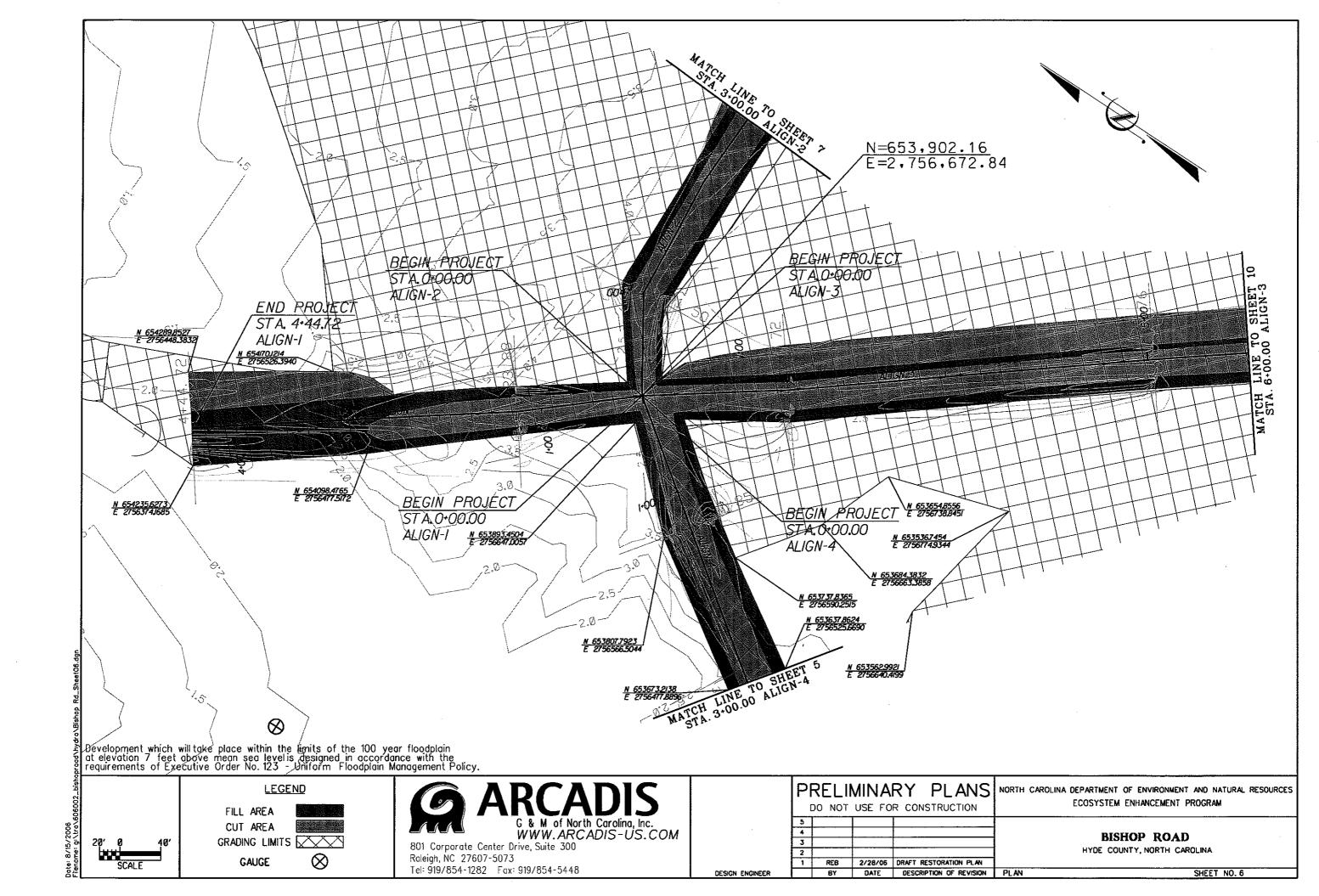


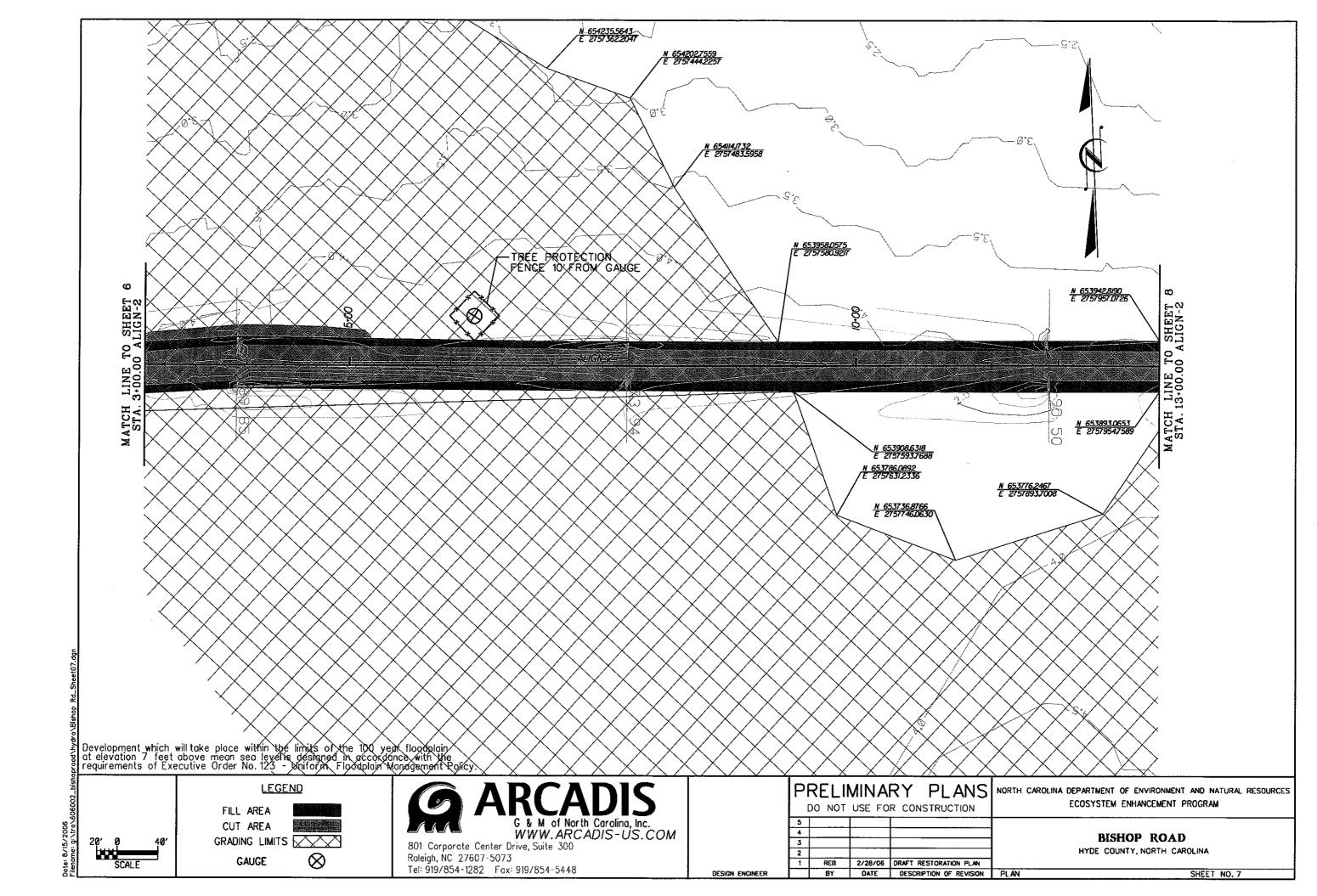


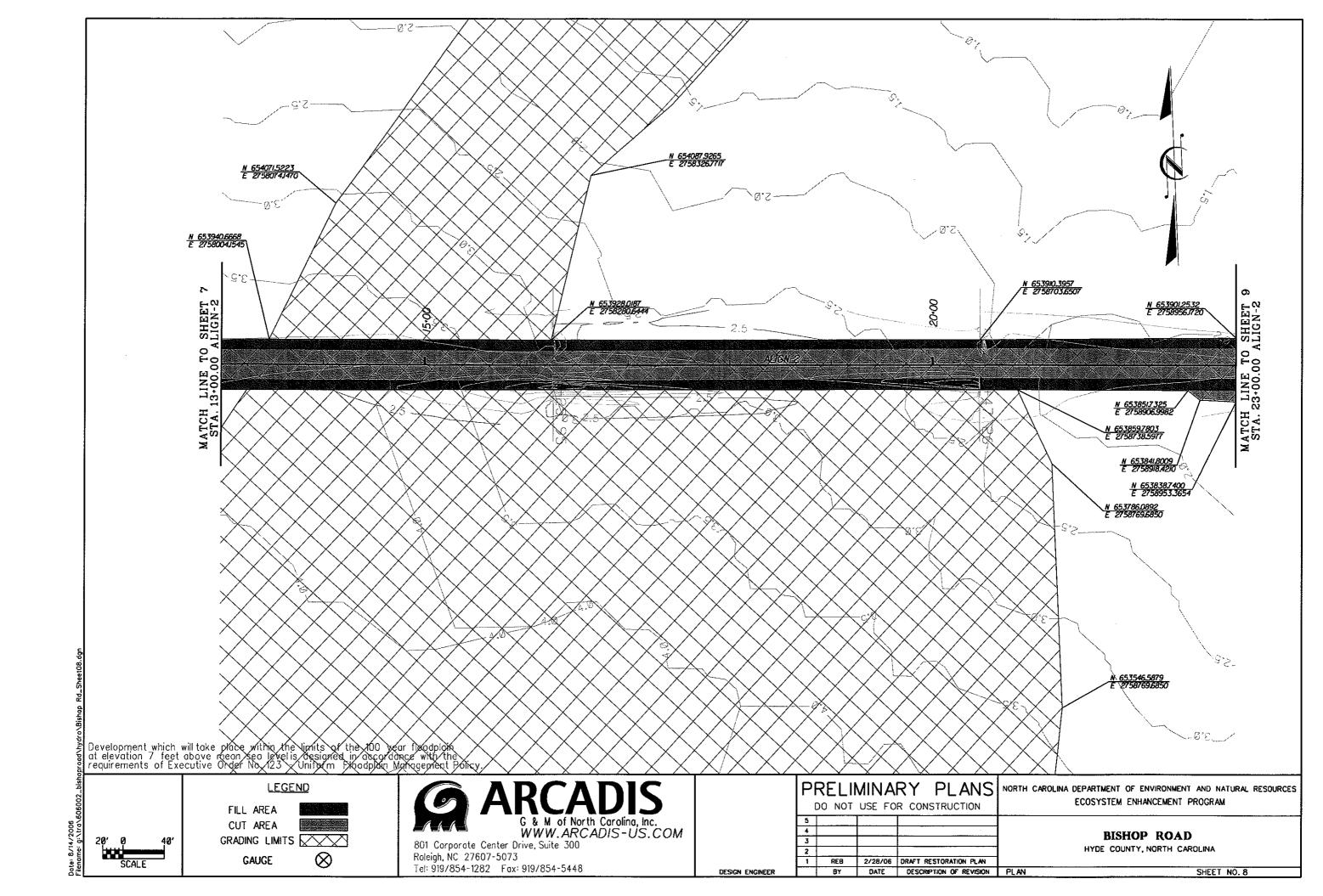


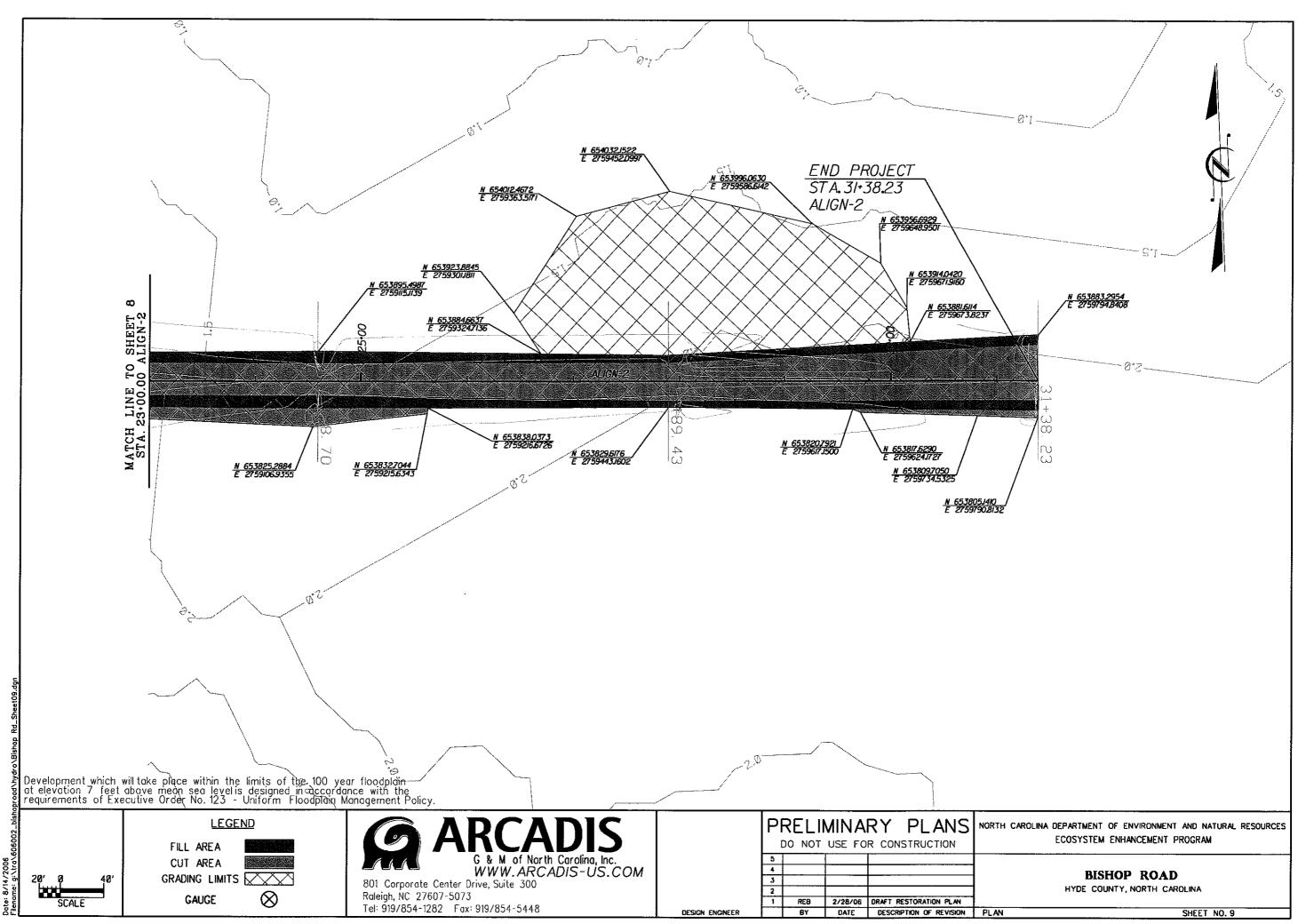


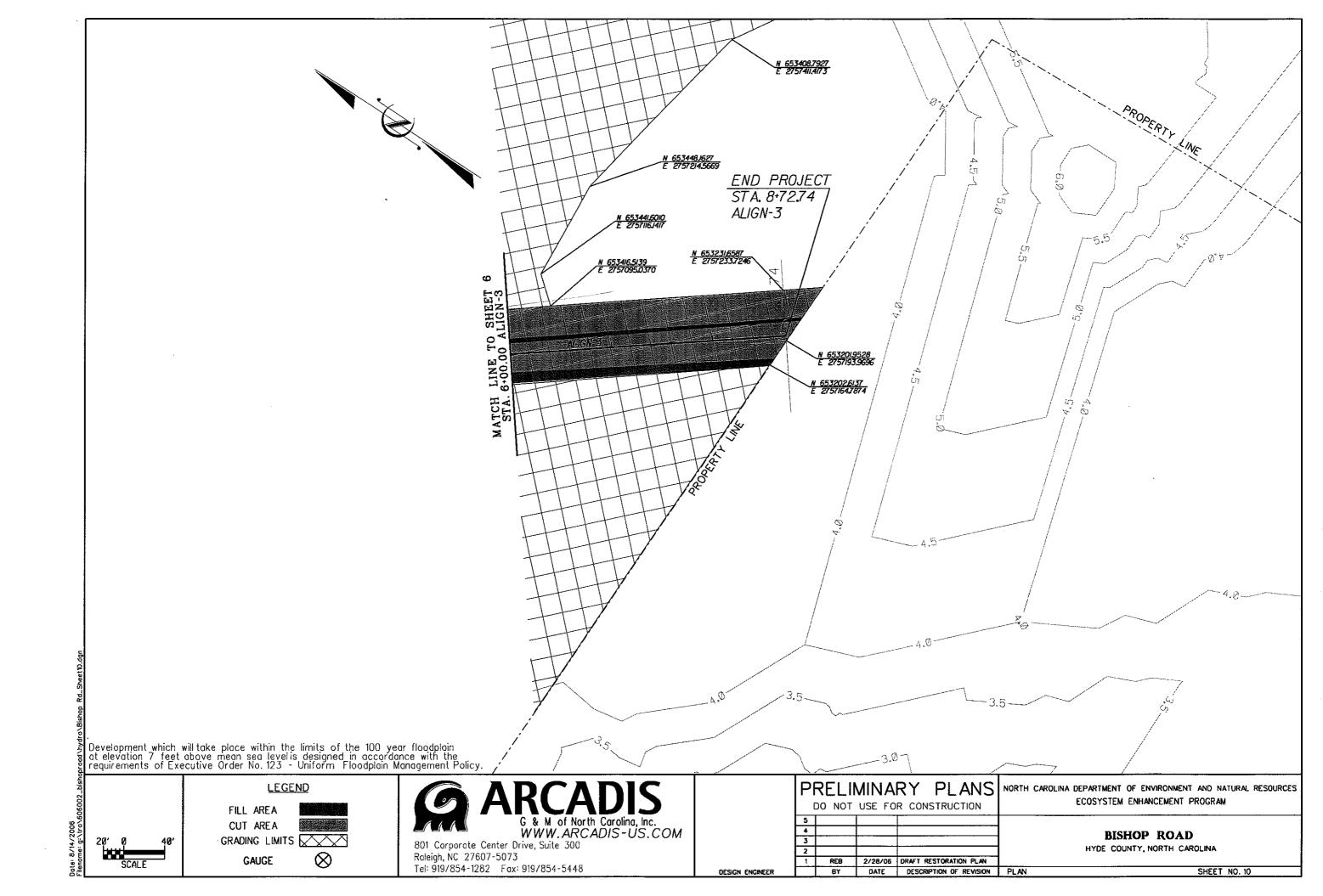




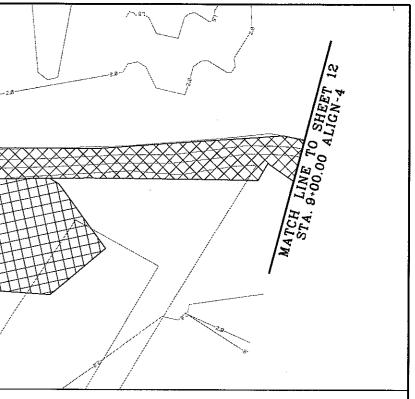


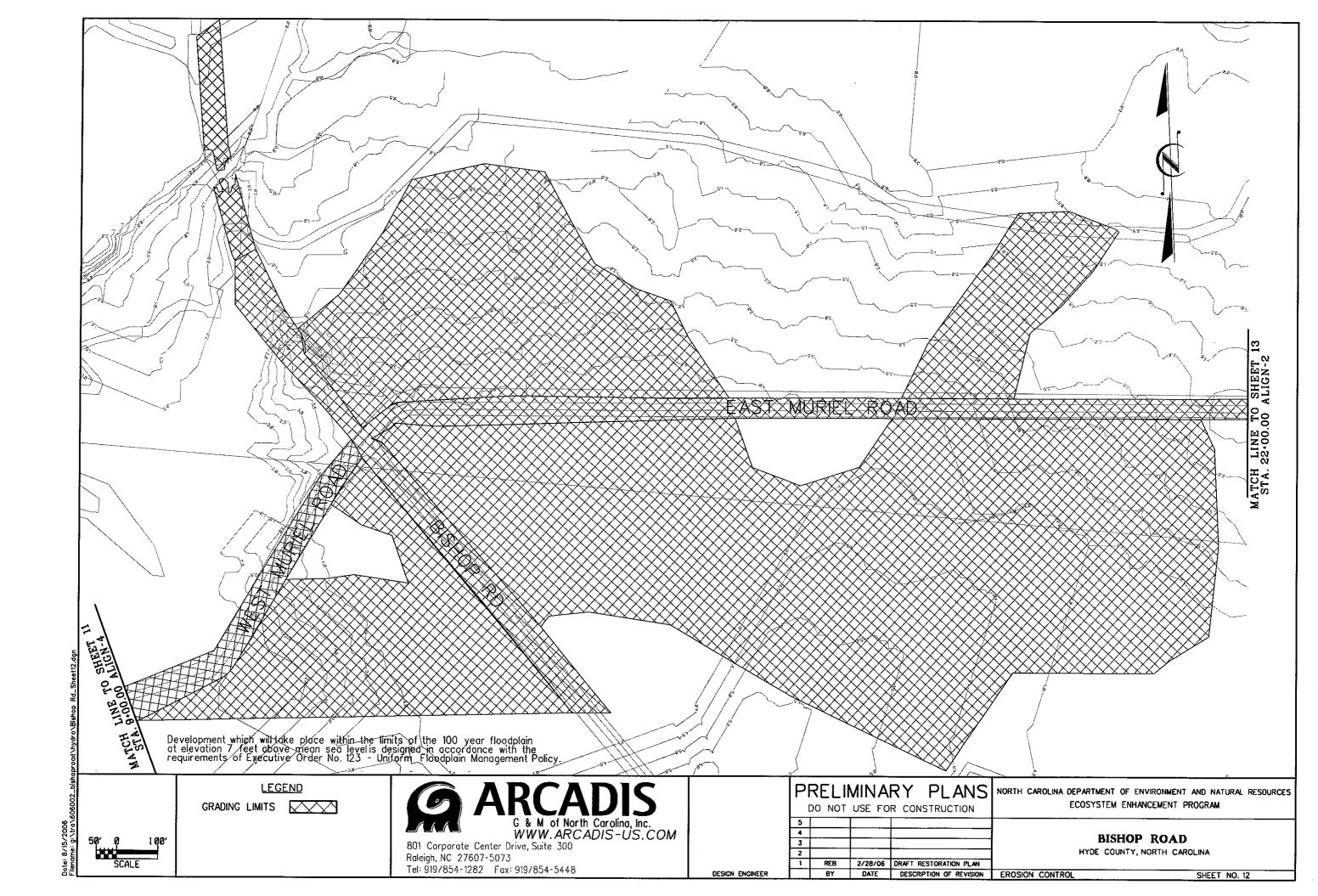


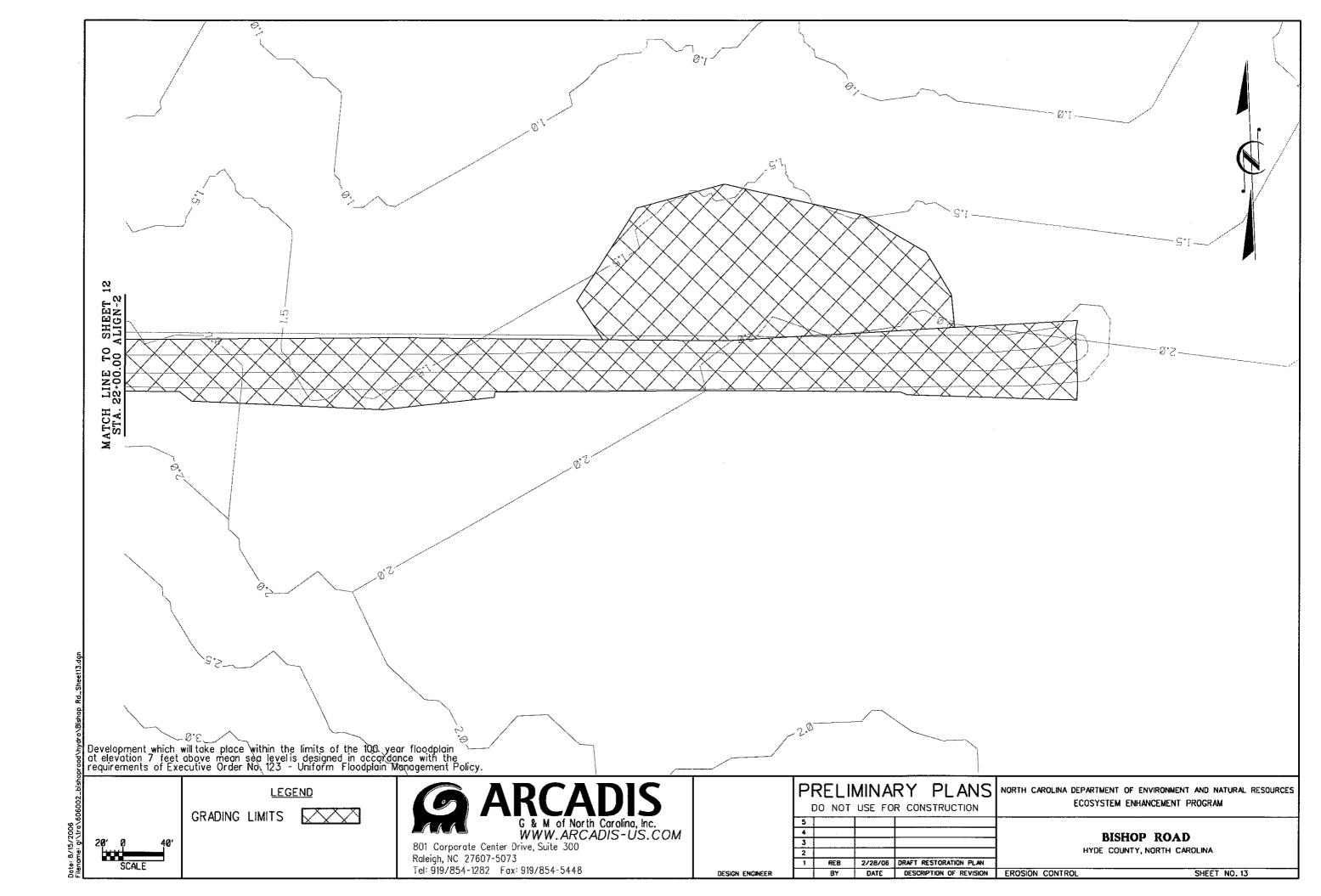




				MATCH STAL B-00.00 ALLGIN- 4 12
 BISHOP ROAD CONSTRUCTION SEQUENCE 1. Area of Disturbance = 86.38 acres. 2. Contractor will perform construction staking along entire project limit verifying property lines. 3. Construct temporary gravel construction entrances, temporary construction access roads and staging/storage areas as shown on plans. 4. Install silt fence around the limits of staging/stockpile areas. 5. Install tree protection fence as shown on the plans and directed by Designer. The site is divided into four work areas. Work can begin in any area and can occur concurrently in any or all areas. Area 1 is comprised of Design Sheets 11-13. Area 2 is comprised of Design Sheet 14. Area 3 is comprised of Design Sheet 15. Area 4 is comprised of Design Sheet 16. 	 Begin work at Sta. 4+44.72 ALIGN-1. Clear and grub vegetation from soilb removed from roadway and soilberm Grade the area to conform to adjac Rip old roadway as described in proj Install temporary and permanent seed Clear and grub vegetation from areas Grade bedding rows and rip soils as a Install temporary and permanent seed Begin work at Sta. 31+38.23 ALIGN-2. Clear and grub vegetation from soilb removed from roadway and soilberm 	erms on the outside of existing drai s to fill adjacent ditches. Place road ent ground elevations. ect specifications. mixture specified for the area and s outside of the roadway as they ar lescribed in project specifications ar mixture specified for the area and perms on the outside of existing dra s to fill adjacent ditches. Place road	mages ditches. Dispose of v lway material in the bottom mulch. Install herbaceous ve e encountered. Dispose of nd shown on plan sheets. G mulch. Install herbaceous ve inages ditches. Dispose of way material in the bottom	a.41+79.56 ALIGN-4) to the middle (Sta. 10+00). Work regetation as described in project specifications. Use mater of ditches then berm material on top. getation plugs and bare root seedlings specified for the are vegetation as described in project specifications. rading and ripping can occur concurrently. egetation plugs and bare root seedlings specified for the ar vegetation as described in project specifications. Use mate of ditches then berm material on top. getation plugs and bare root seedlings specified for the are vegetation as described in project specifications. Use mate of ditches then berm material on top. getation plugs and bare root seedlings specified for the ore vegetation as described in project specifications. rading and ripping can occur concurrently. getation plugs and bare root seedlings specified for the are rade the area to conform to adjacent ground elevations.
BISHOP ROAD MAINTENANCE PLAN Check silt fence, erosion control matting, diversion structures, etc. after each rainfall or weekly minimum. Repair damage and remove accumulated sediment immediately. Temporary Seed Mixture August 15 - April 15 Cereal Rye 120 lbs/acre Orchard Grass 20 lbs/acre Provintop Millet 40 lbs/acre Browntop Millet 30-40 lbs/acre Development which will take place within the limits of/the 100 year fl at elevation 7 feet above mean sea level is designed in accordance requirements of Executive Order No. 123 - Uniform Floodplain Mana	 Isodplain with the gement Policy. S. Clear and grub vegetation from soliborm removed from roadway and soilberm to adjag 5. Rip old roadway as described in projute 6. Install temporary and permanent seed 7. Clear and grub vegetation from areas 8. Grade bedding rows and rip soils as a 9. Install temporary and permanent seed 10. Maintain existing ditch at Sta. 9+70 A 11. Continue grading, ripping and planting D. ALIGN-3 Clear and grub vegetation from soilborm roadway and soilberm 3. Grade the area to conform to adjag 4. Rip old roadway as described in projute 5. Install temporary and permanent seed 10. State the area to conform to adjag 4. Rip old roadway as described in projute 5. Install temporary and permanent seed 6. Clear and grub vegetation from areas 7. Grade bedding rows and rip soils as a 8. Install temporary and permanent seed 6. Clear and grub vegetation from areas 7. Grade bedding rows and rip soils as a 8. Install temporary and permanent seed 6. Clear and grub vegetation from areas 7. Grade bedding rows and rip soils as a 1. Install temporary and permanent seed 10. Install temporary and permanent seed 10. Statement Policy. 	erms on the outside of existing drai is to fill adjacent ditches. Place road eent ground elevations. ect specifications. mixture specified for the area and is outside of the roadway as they ar lescribed in project specifications ar mixture specified for the area and	mages altones. Dispose of v way material in the bottom mulch. Install herbaceous ver e encountered. Dispose of id shown on plan sheets. Gi mulch. Install herbaceous ve	getation plugs and bare root seedlings specified for the are vegetation as described in project specifications. rading and ripping can occur concurrently. regetation plugs and bare root seedlings specified for the are rade the area to conform to adjacent ground elevations. regetation as described in project specifications. Use mater of ditches then berm material on top. getation plugs and bare root seedlings specified for the are vegetation as described in project specifications. regetation plugs and bare root seedlings specified for the are vegetation plugs and bare root seedlings specified for the are regetation plugs and bare root seedlings specified for the are vegetation plugs and bare root seedlings specified for the are regetation plugs and bare root seedlings specified for the are regetation plugs and bare root seedlings specified for the are regetation plugs and bare root seedlings specified for the are regetation plugs and bare root seedlings specified for the are regetation as described in project specifications. Use mater of ditches then berm material on top.
	ARCADIS G & M of North Carolina, Inc. WWW.ARCADIS-US.COM 801 Corporate Center Drive, Suite 300 Raleigh, NC 27607-5073 Tel: 919/854-1282 Fax: 919/854-5448	DO NOT U 5 4 3 2 1 REB 2	Z/28/06 DRAFT RESTORATION PLAN DATE DESCRIPTION OF REVISION	NORTH CAROLINA DEPARTMENT OF ENVIRONMENT AND NATURAL RESOUR ECOSYSTEM ENHANCEMENT PROGRAM BISHOP ROAD HYDE COUNTY, NORTH CAROLINA EROSION CONTROL SHEET NO. 11







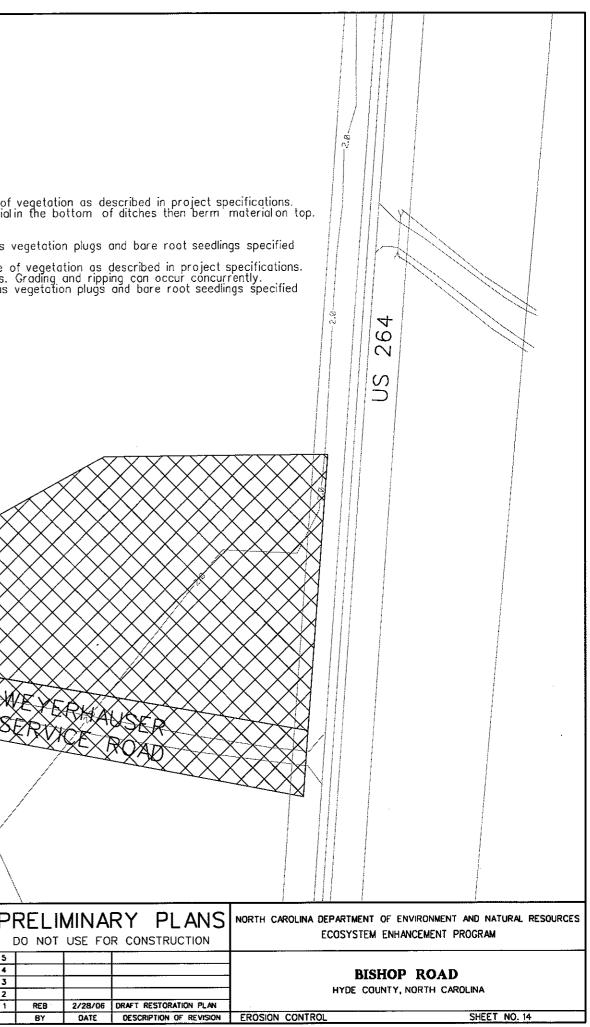
BISHOP ROAD CONSTRUCTION SEQUENCE

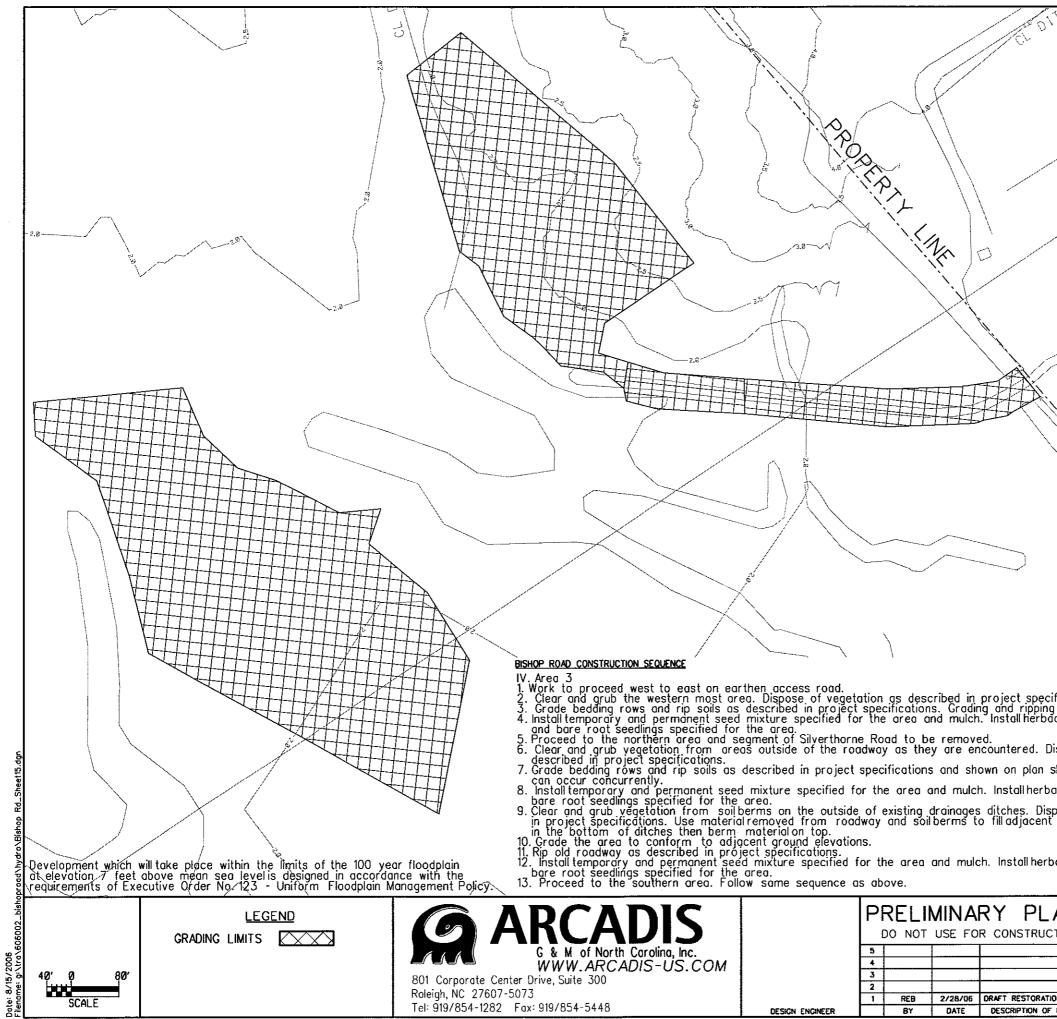
III. Area 2

Area 2
 Clear and grub vegetation from soil berms on the outside of existing drainages ditches. Dispose of vegetation as described in project specifications. Use material removed from roadway and soil berms to fill adjacent ditches. Place roadway material in the bottom of ditches then berm material on top.
 Grade the area to conform to adjacent ground elevations.
 Rip old roadway as described in project specifications.
 Install temporary and permanent seed mixture specified for the area and mulch. Install herbaceous vegetation plugs and bare root seedlings specified for the area.

for the area.

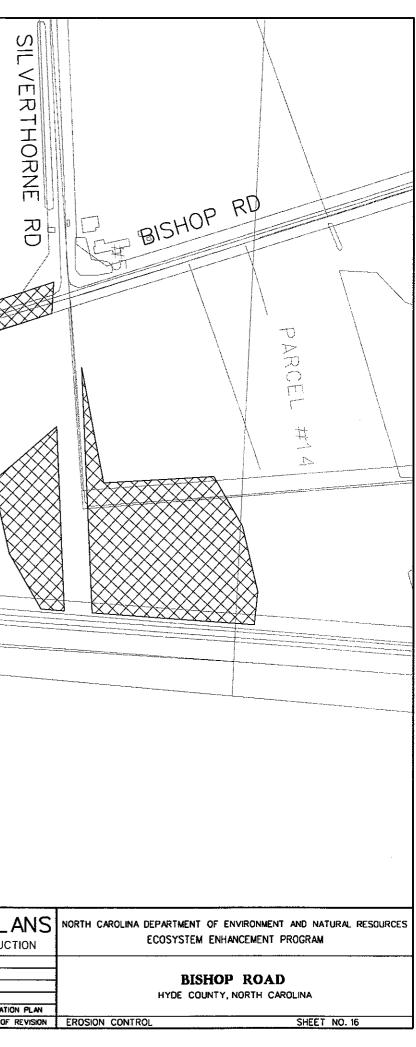
rood\hydro\Bishop Rd_Sheet14.dgn	Development which	vill take place within the limits of the 100 ye above mean see tevel is designed in accord cutive Order No. 123 - Uniform Floodplain N	ear floodplain ance with the Wanagement Policy.					
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Š			G & M of North Carolina, Inc.		5			
휜	30' Ø 60'	· · ·	= = = $WWW.ARCADIS=US.COM$		4			
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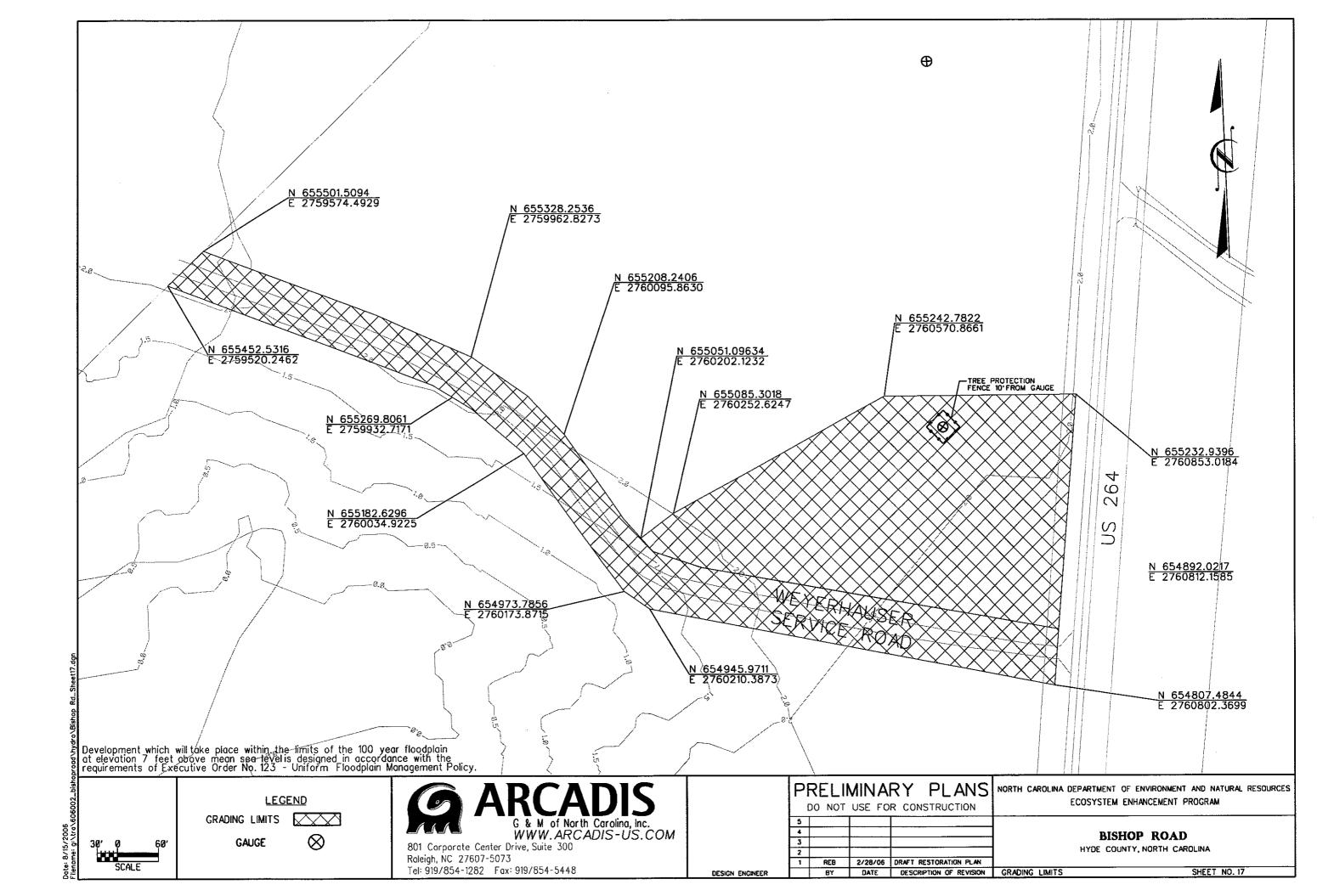


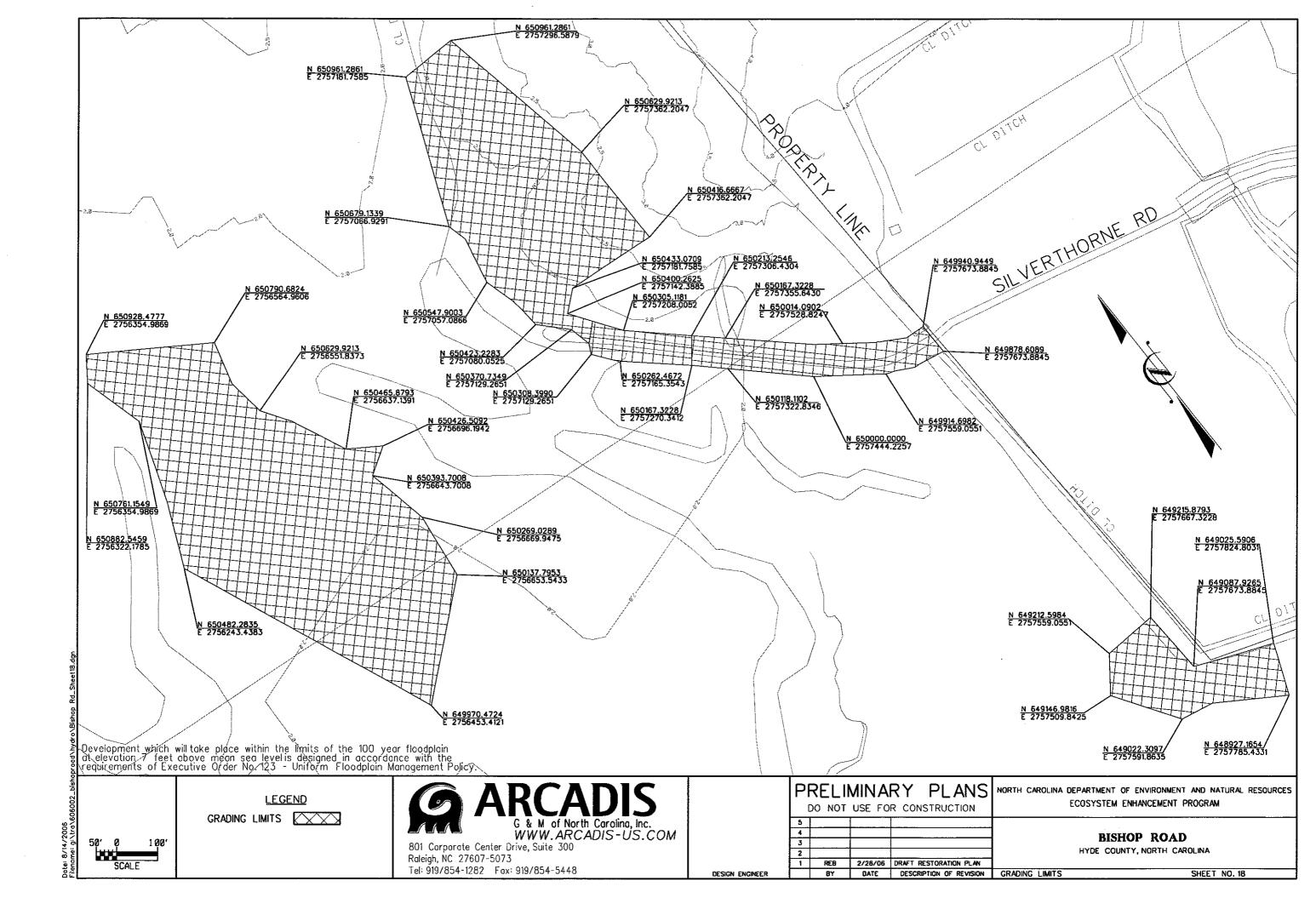
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Dispose o sheets. (paceous v	icur concurrently. egetation plugs of vegetation as Grading and ripping vegetation plugs and vegetation as described Place roadway material
	vegetation plugs and
ANS	NORTH CAROLINA DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES ECOSYSTEM ENHANCEMENT PROGRAM
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TION PLAN	HYDE COUNTY, NORTH CAROLINA
F REVISION	FROSION CONTROL SHEET NO. 15

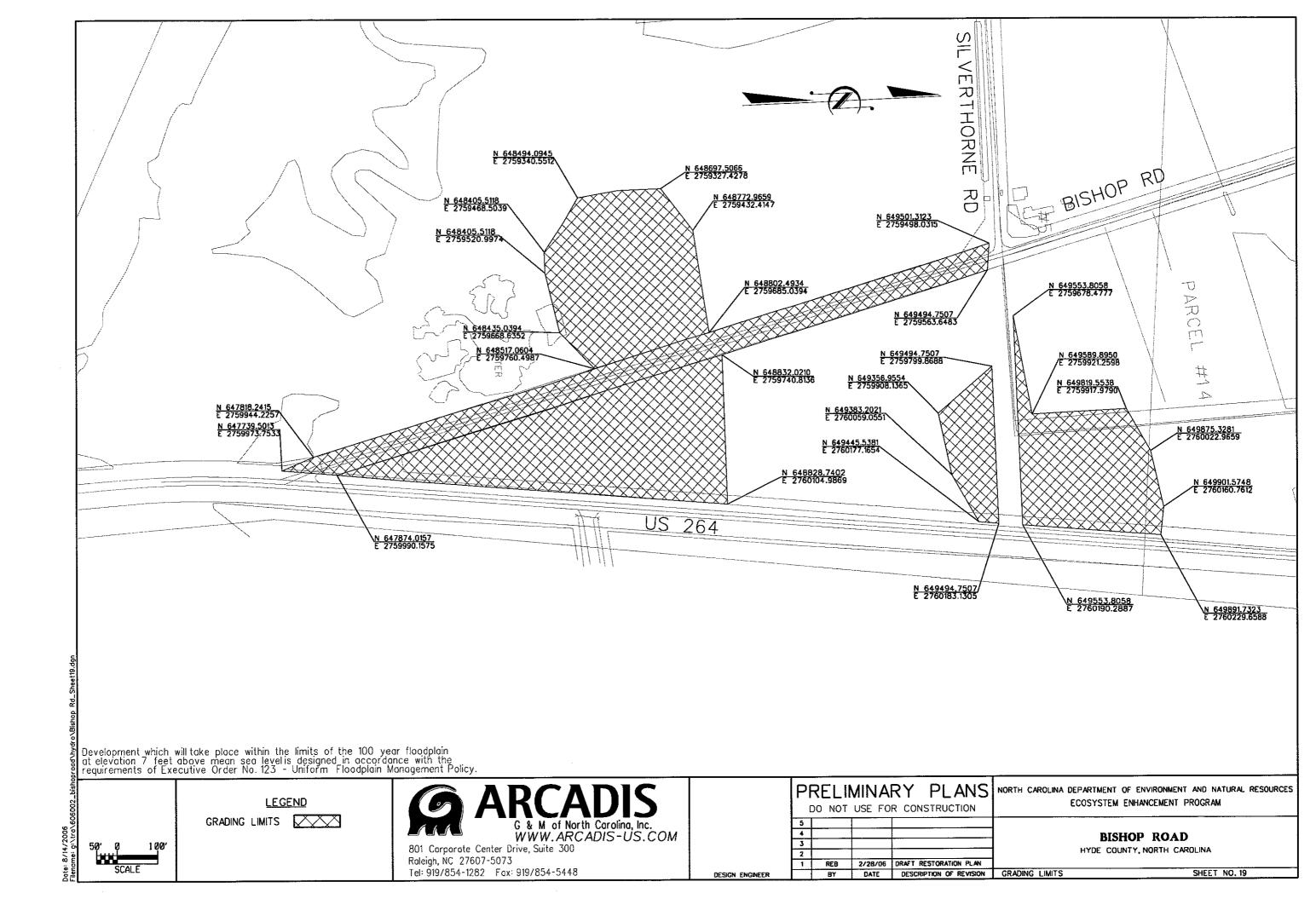
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BISHOP ROAD CONSTRUCT V. Area 4 1. Work to proc	n on sequence eed south to north.				
2. Begin at the 3. Clear and gru Use material 4. Grade the ar	now sequence southern end of Bishop Road at the i ub vegetation from soilberms on the removed from roadway and soilber way as described in project specificati ary and permanent seed mixture spec ub vegetation from areas outside of ary and permanent seed mixture spec areas along Silverthorne Road. ub vegetation from areas. Dispose o ary rows and rip soils as described in ary and permanent seed mixture spec areas along Silverthorne Road.	ntersection with US 264. outside of existing drainages ditc s to filladjacent ditches. Place ro levations	hes. Dispose of vegetatic badway materialin the bol	n as described in project s tom of ditches then berm	specifications. material on top.
5. Rip old roady 6. Install tempore 7. Clear and gru 8. Grade beddin	vay as described in project specificati ary and permanent seed mixture spec up vegetation from areas outside of a rows and rin soils as described in r	ons. ified for the area and mulch. Insi the roadway as they are encount roject specifications and shown o	tallherbaceous vegetation ered. Dispose of vegetat	plugs and bare root seedlin on as described in project	ngs specified for the area. specifications. reatly
9. Install tempor 10. Proceed to 11. Clear and gr	ary and permanent seed mixture spec areas along Silverthorne Road. ub vegetation from areas. Dispose a to row and ris soils as described in	f vegetation as described in project	ital herbaceous vegetation ect specifications.	plugs and bare root seed	ings specified for the area.
13. Install tempor	and permanent seed mixture spec	cified for the area and mulch. Ins	tall herbaceous vegetation	i plugs and bare root seed	ings specified for the area.
Development which at elevation 7 feet requirements of Ex	ea to conform to adjacent ground e vay as described in project specificati ary and permanent seed mixture spec b vegetation from areas outside of a rows and rip soils as described in p ary and permanent seed mixture spec ub vegetation from areas. Dispose a ray and permanent seed mixture spec will take place within the limits of the above mean sea level is designed in ecutive Order No. 123 - Uniform Floo	100 year floodplain accordance with the dplain Management Policy.			
	LEGEND		RCADI	5	PRELIMINARY PL
50' 0 100'	GRADING LIMITS		\$ & M of North Carolina, I NWW.ARCADIS-US	nc.	5 4
50' 0 100' SCALE		801 Corporote Center Dri Roleigh, NC 27607-5073 Tel: 919/854-1282 Fax: 9			3 2 1 REB 2/28/06 DRAFT RESTORAT

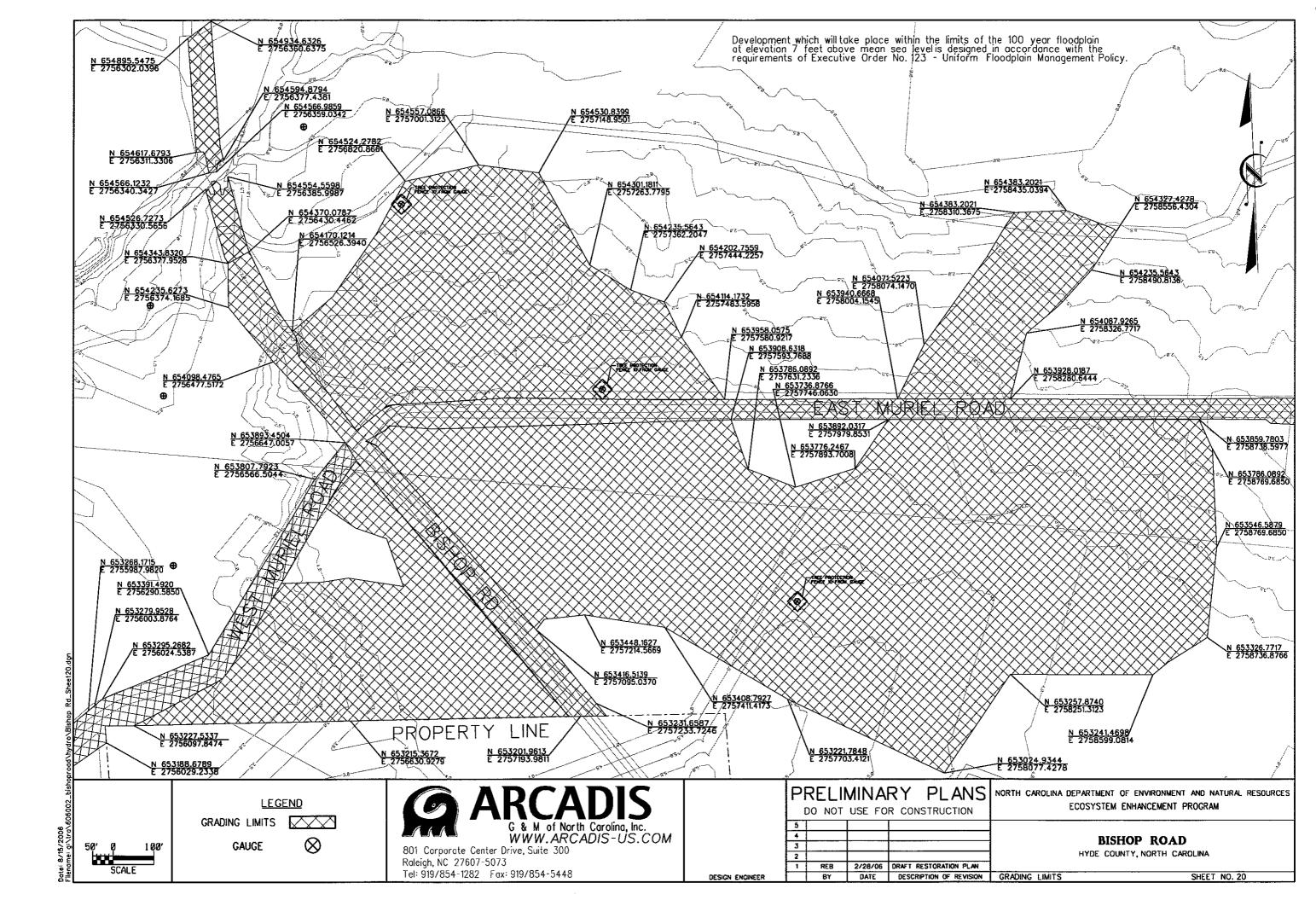


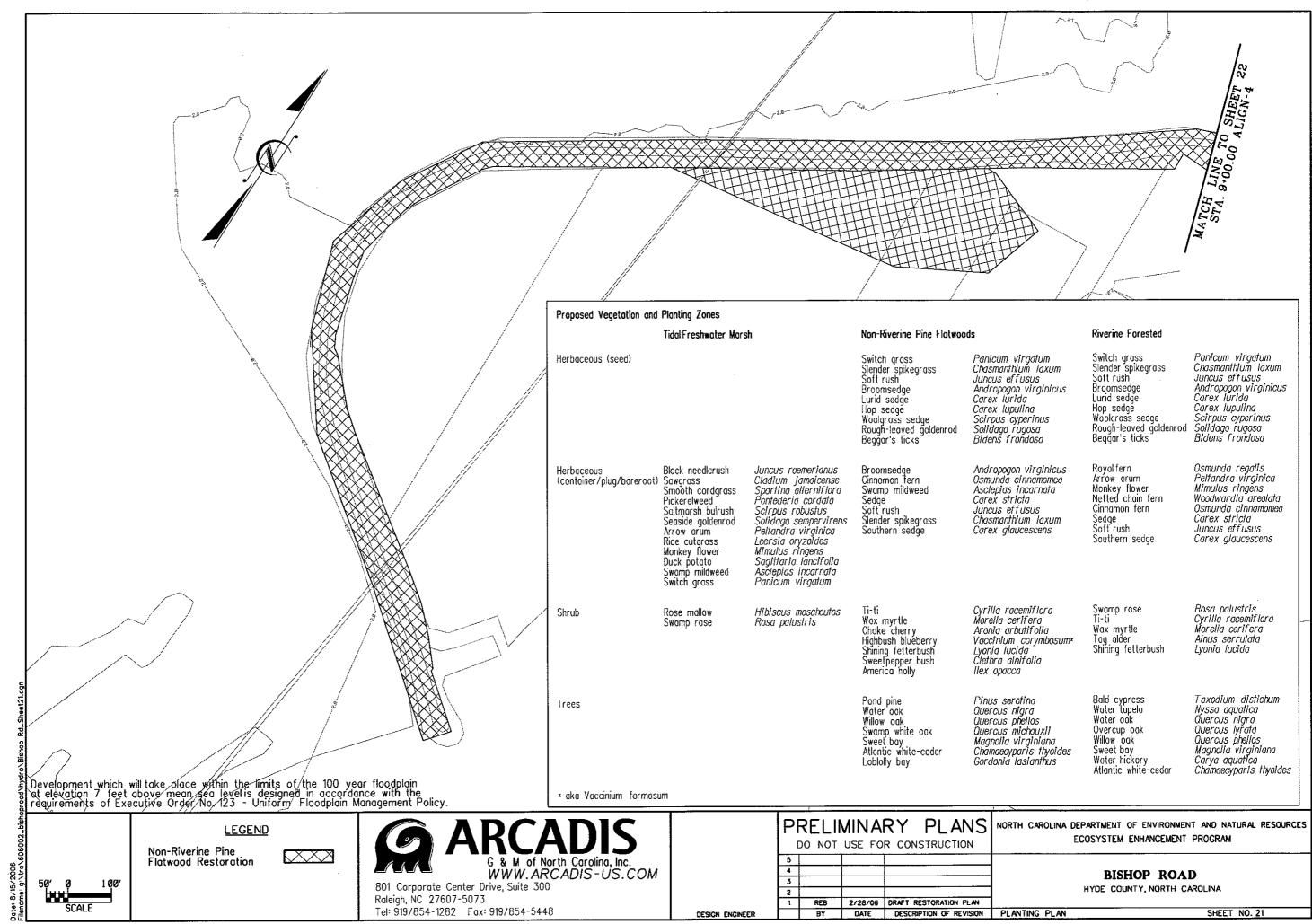
SHEET NO. 16

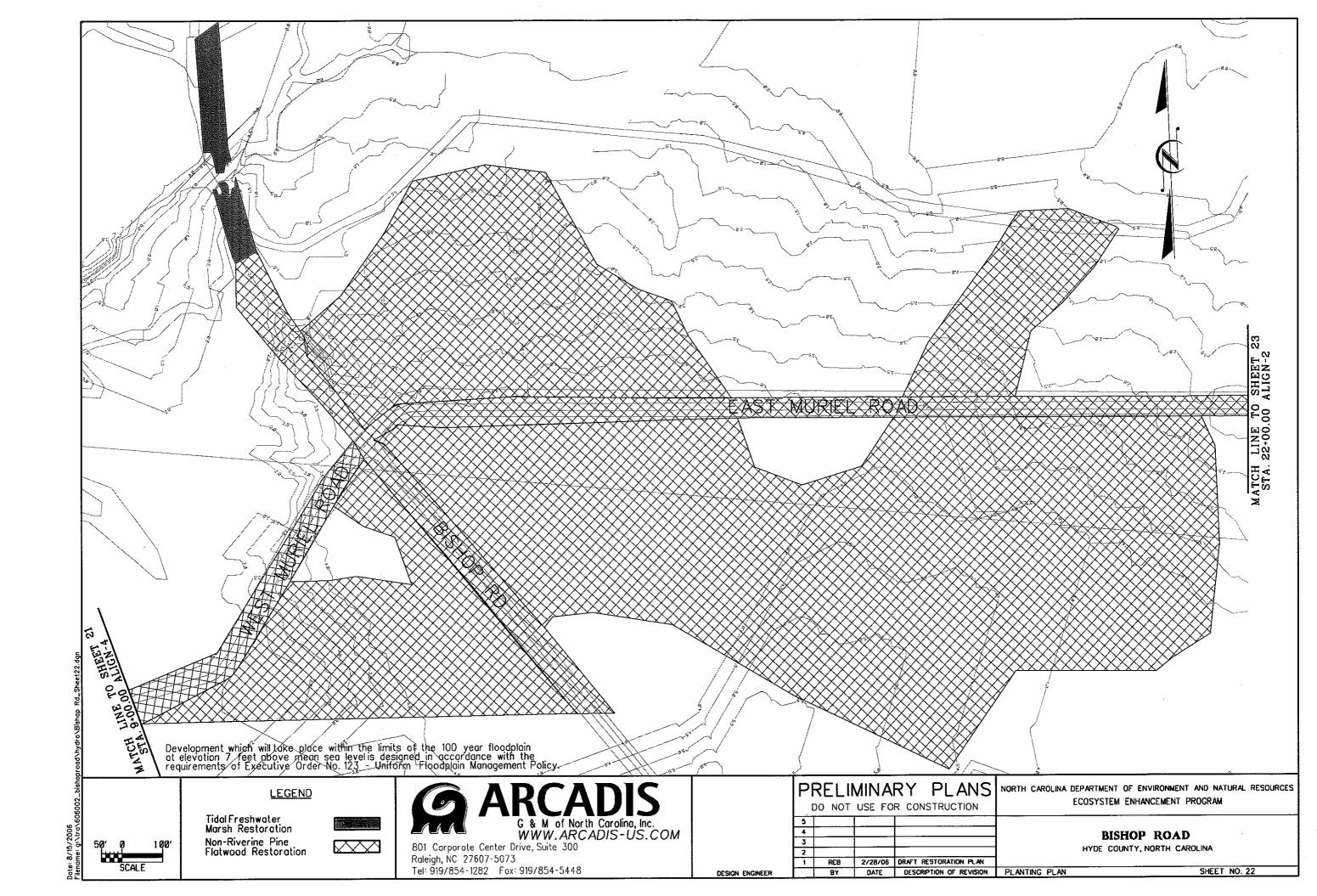


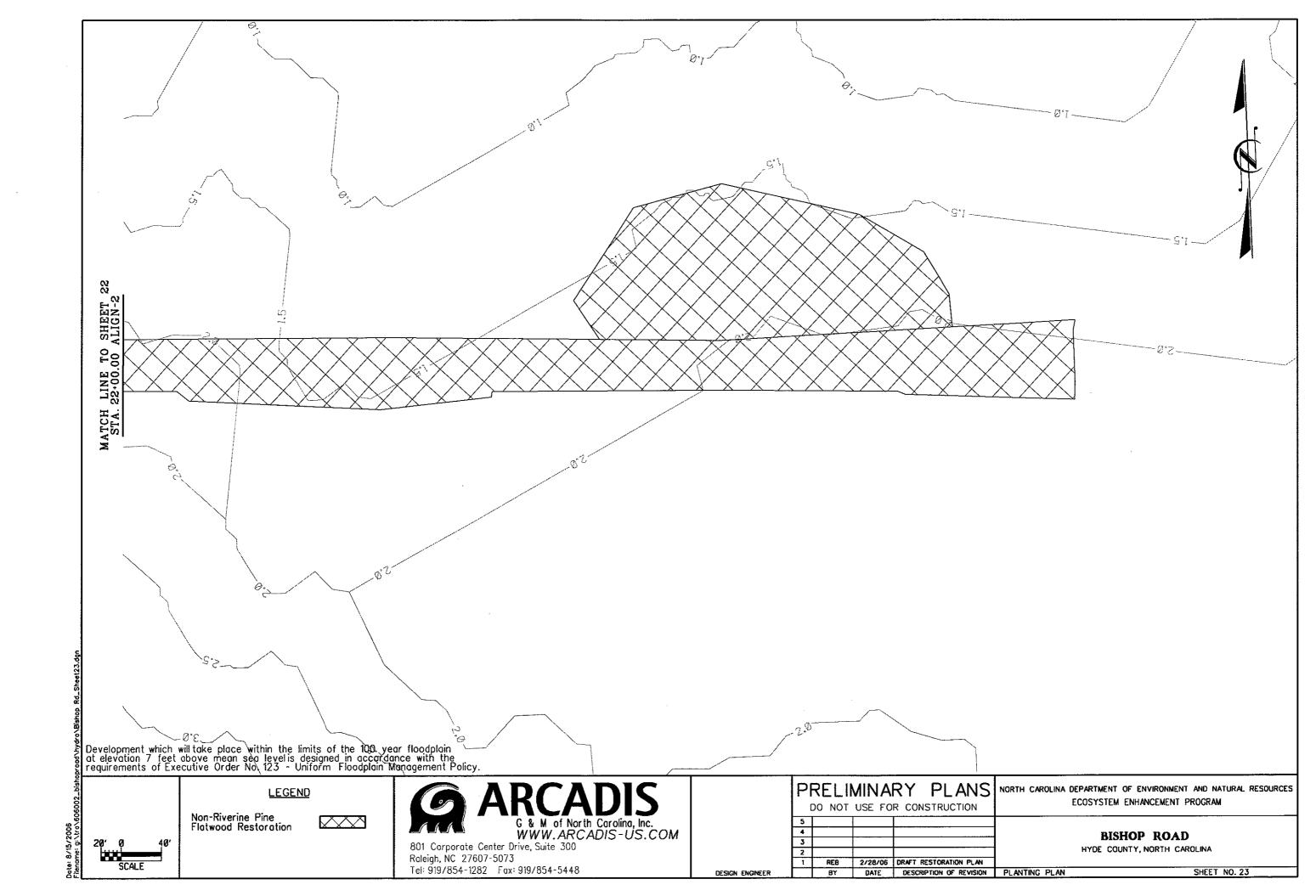




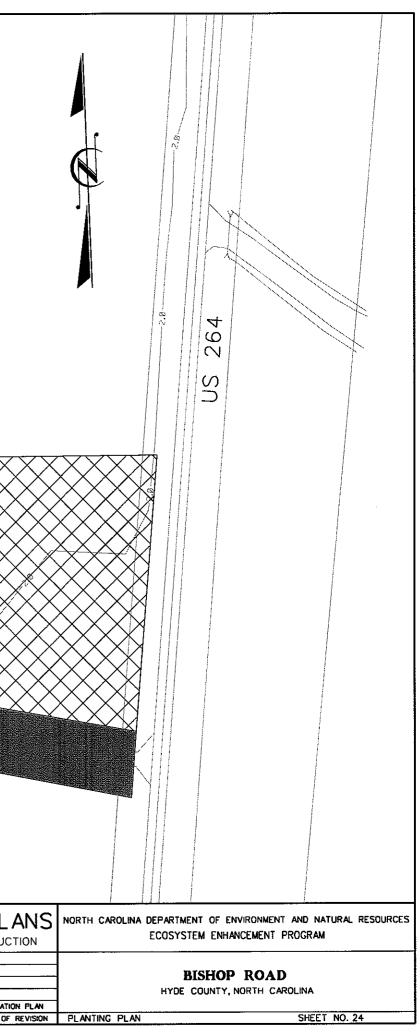


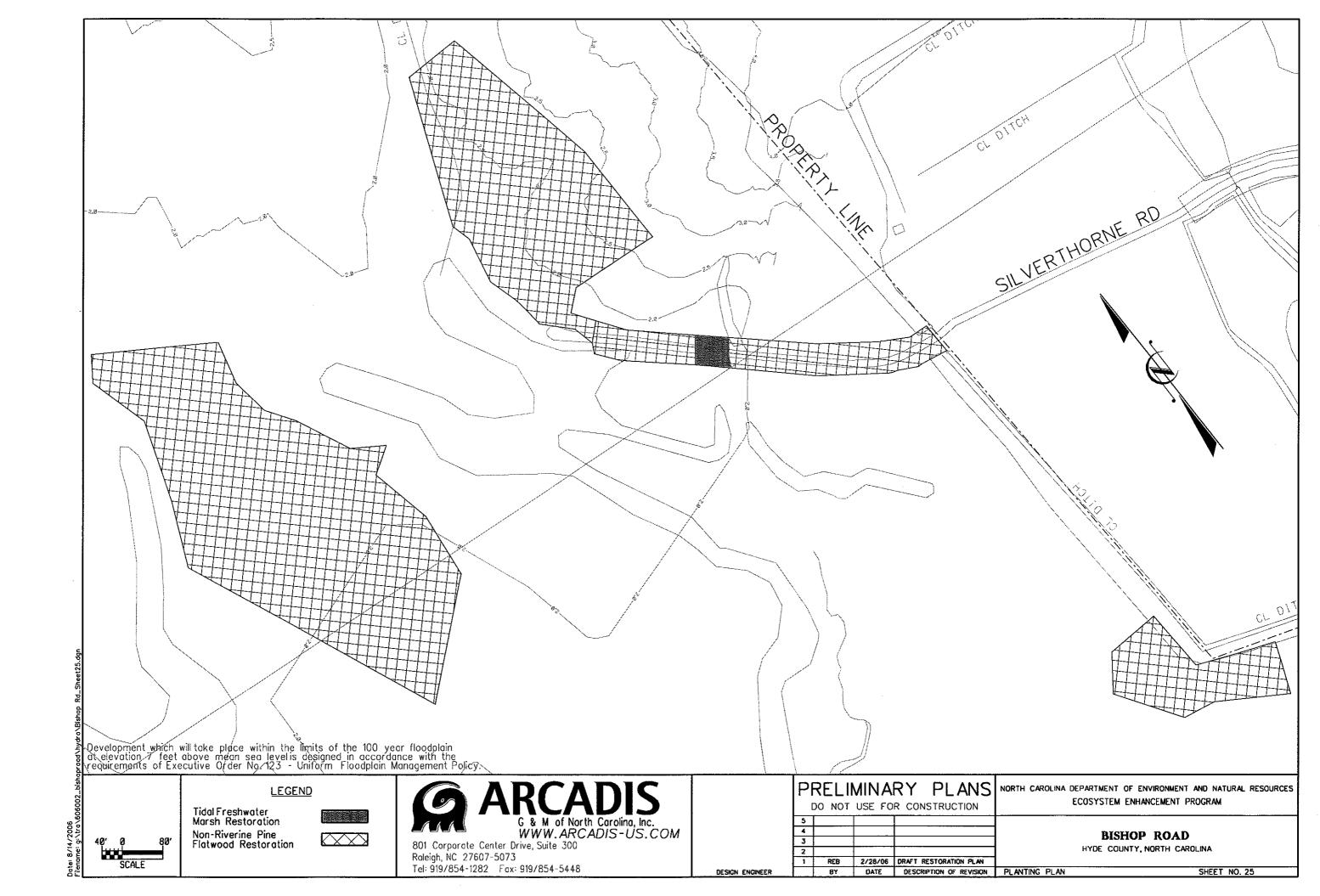


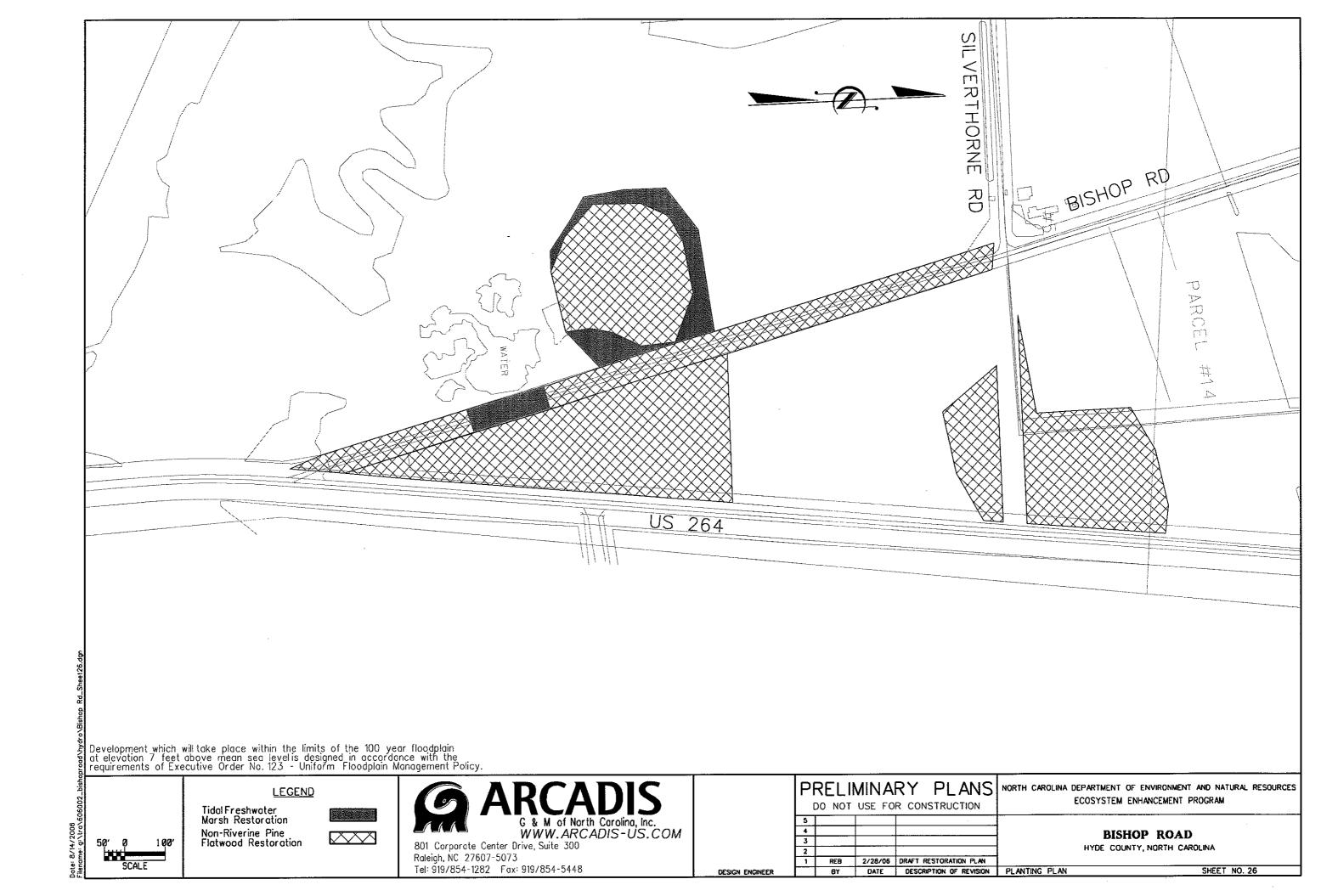


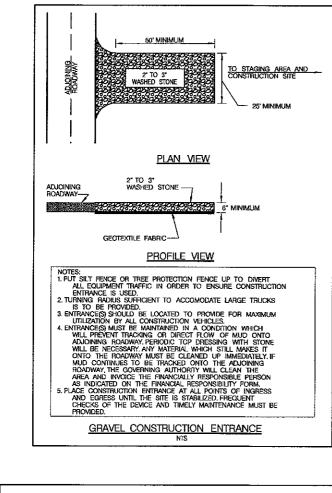


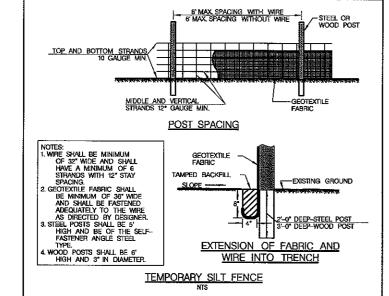
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Bishop Rd_			8. 5. (Si	0.0
Development which at elevation 7 fer requirements of E	n will toke place within the limit et above mean sea tevel is des xécutive Order No. 123 - Unifo	s of the 100 year floodp gned in accordance with rm Floodplain Manageme	lain the in in in		
bisho	LEGEND		ARCAD	IS	PRELIMINARY PL
30' 0 60	Riverine Forested Wetland Restoration Non-Riverine Pine Flatwood Restoration		G & M of North Carolin WWW.ARCADIS-	no, Inc. US.COM	5 4 3
SCALE		Raleigh	orporate Center Drive, Suite 300 1, NC 27607-5073 9/854-1282 Fax: 919/854-5448	DESIGN ENGINEER	2 1 REB 2/28/06 DRAFT RESTORA BY DATE DESCRIPTION (



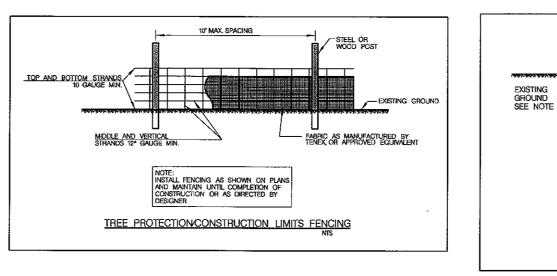


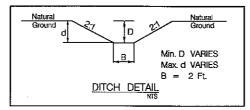






Development which will take place within the limits of the 100 year floodplain at elevation 7 feet above mean sea levelis designed in accordance with the requirements of Executive Order No. 123 - Uniform Floodplain Management Policy.





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G & M of North Carolina, Inc. WWW.ARCADIS-US.COM

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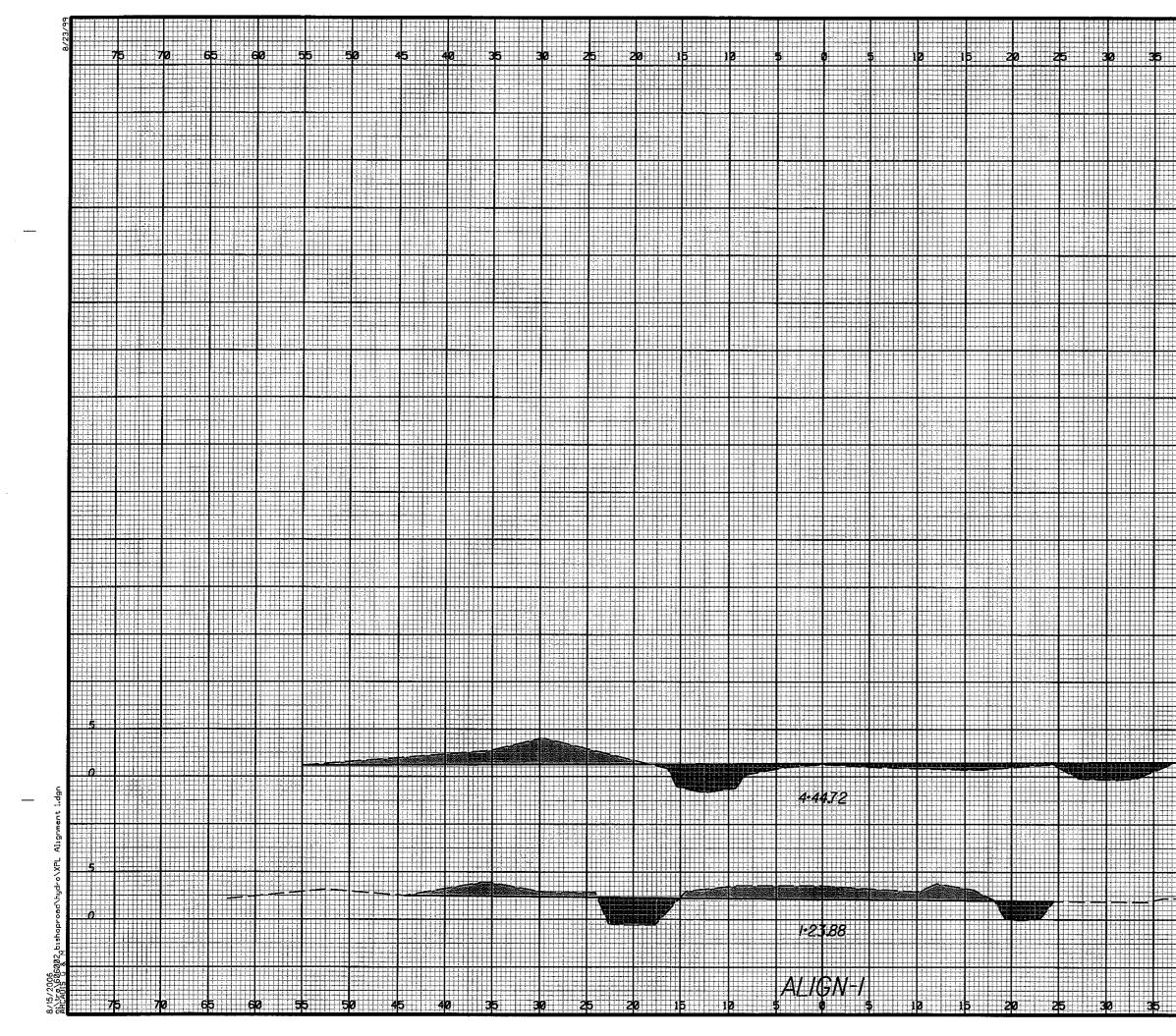
801 Corporate Center Drive, Suite 300

Tel: 919/854-1282 Fax: 919/854-5448

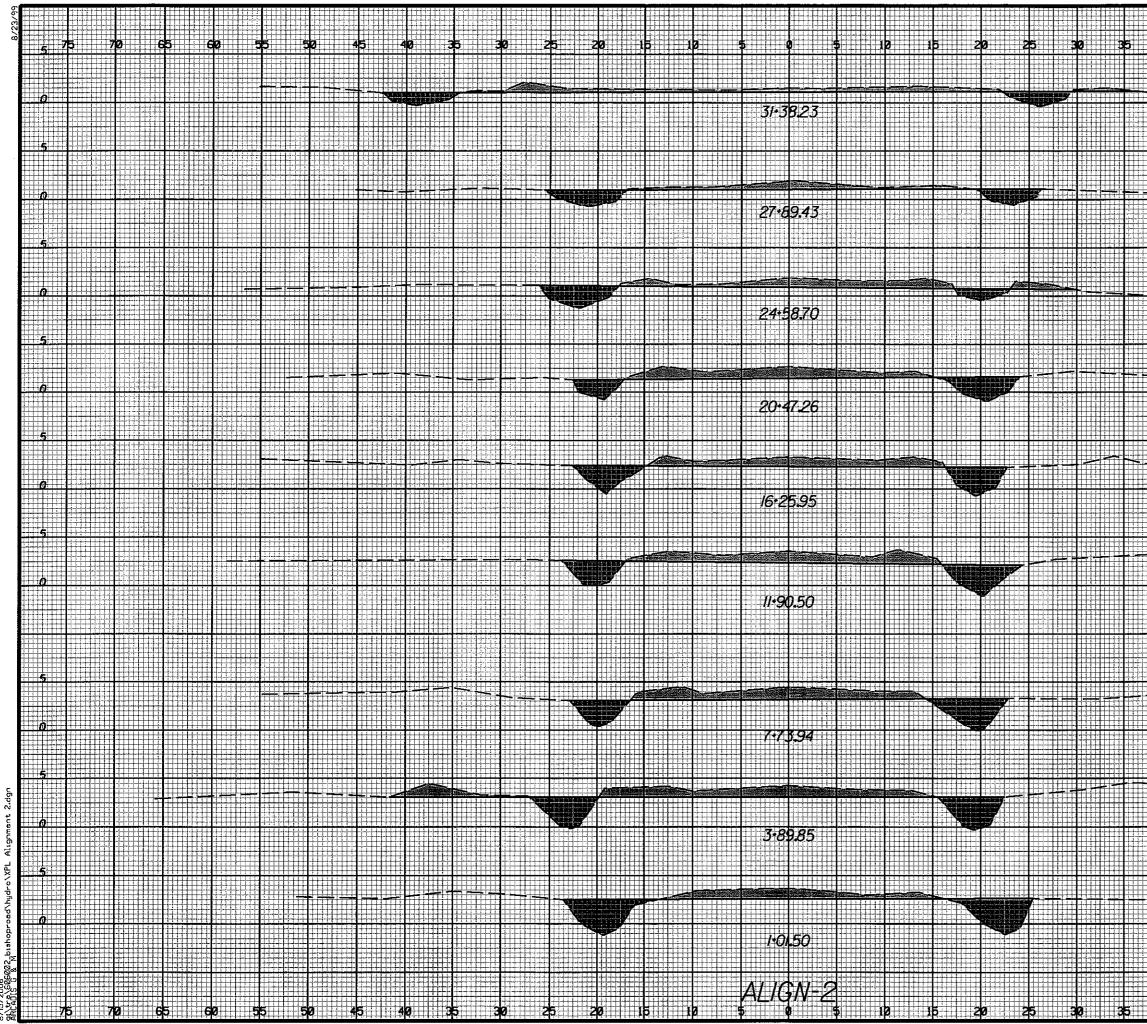
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	3				1	BISHOP ROAD
	2		T		1	HYDE COUNTY, NORTH CAROLINA
	1	REB	2/28/06	DRAFT RESTORATION PLAN	1	
DESIGN ENGINEER		BY	DATE	DESCRIPTION OF REVISION	BEANILS	SHEET NO. 27

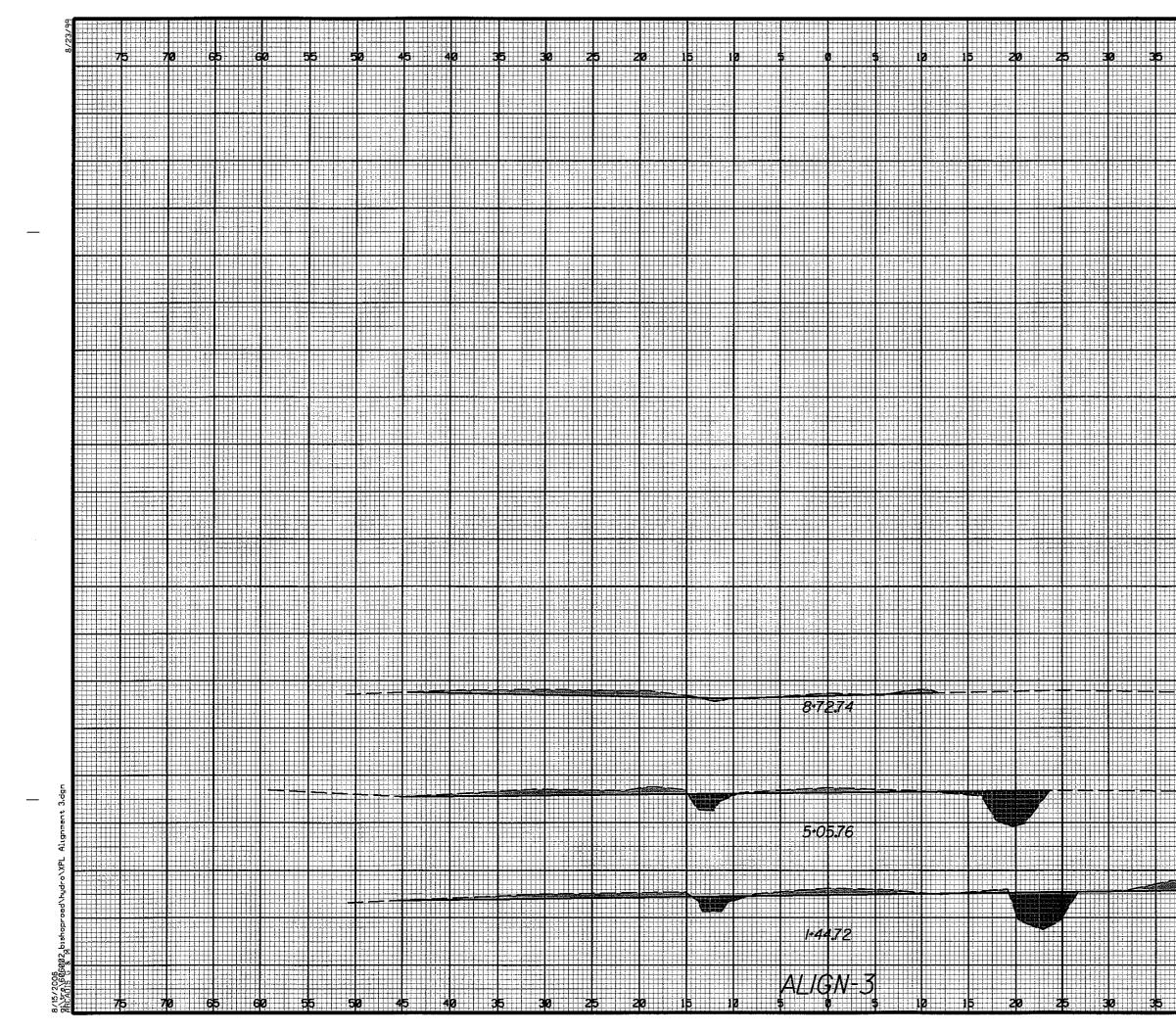
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GEOTEXTILE FABRIC
12' TYPICAL (VARIES), SEE PLAN
CROSS-SECTION VIEW
NOTE: 1. UNDERCUT AND REPAIR/COMPACT ANY AREAS WHERE EXISTING GRADE IS SOFT ENOUGH TO PUMP UNDER EXPECTED DUMP TRUCK LOADING. 2. USE ONLY IN LOCATION AS DIRECTED BY ENGINEER.
CONSTRUCTION ACCESS ROAD
NTS



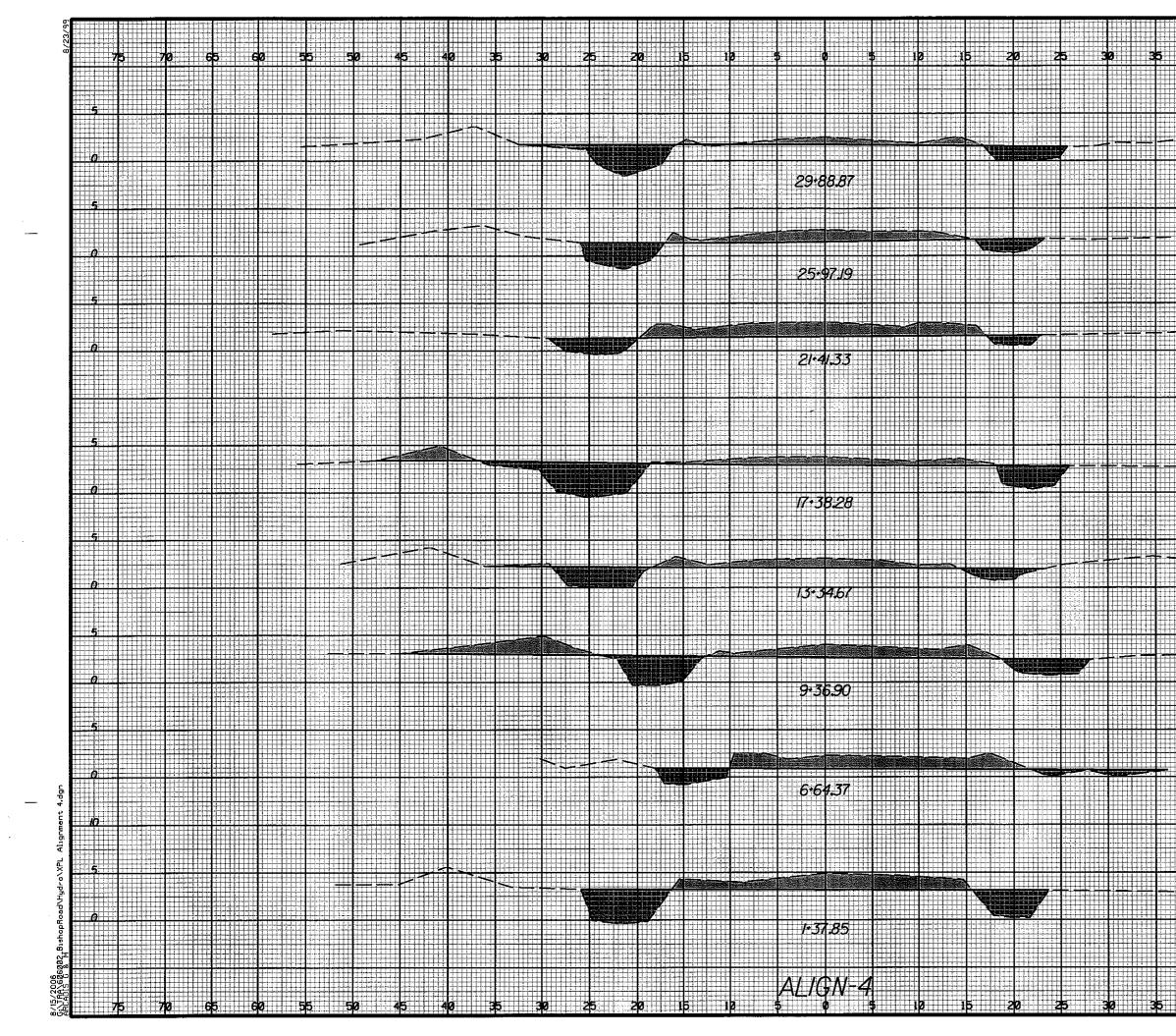
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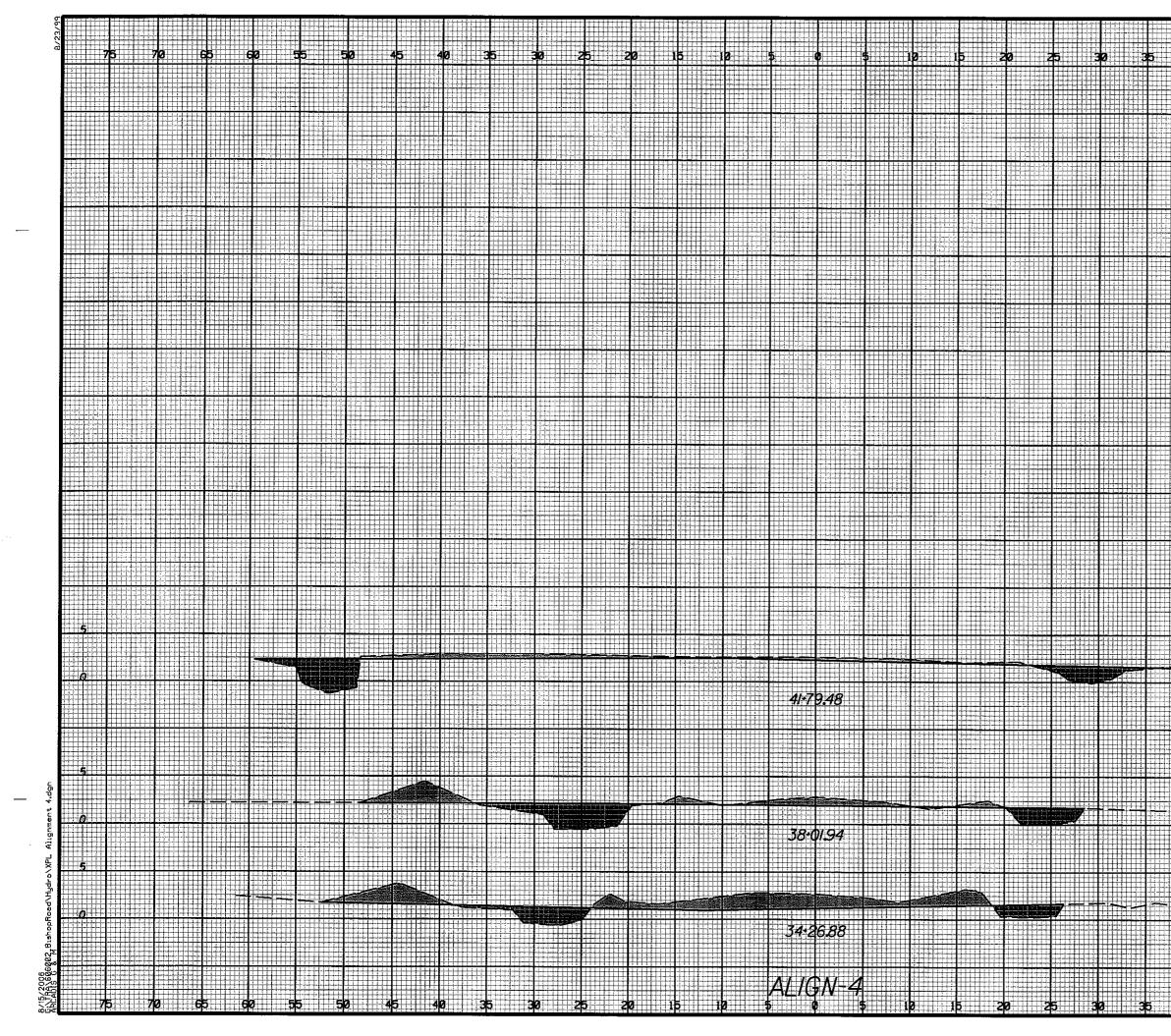
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