



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

BEVERLY EAVES PERDUE
GOVERNOR

EUGENE A. CONTI, JR.
SECRETARY

October 15, 2010

N.C. Division of Coastal Management
1638 Mail Service Center
Raleigh, NC 27699-1638

ATTN: Mr. Steve Sollod
NCDOT Coordinator

Dear Sir:

Subject: **Submittal of DCM Consistency Certification** for the proposed Wilmington Bypass, from US 17 north of the NC 87 intersection in Brunswick County to US 421 in New Hanover County. TIPS R-2633AA&AB and R-2633B. WSB. 34491.1.3.GV2, 34491.3.ST1, and 34491.1.2.

The purpose of this letter and information package is to request concurrence from the Division of Coastal Management (DCM) for the North Carolina Department of Transportation's (NCDOT) consistency certification for the above-mentioned project. This package consists of the supporting information, the Ecosystem Enhancement Program (EEP) confirmation letter, and Merger Concurrence meeting (4B, 4C) minutes for R-2633AA&AB and B and title plan sheets for Sections A and B.

NCDOT, in consultation with the Federal Highway Administration (FHWA), proposes to construct a fully controlled access freeway on new alignment from US 17 north of the NC 87 intersection to just north of US 74/76 in Brunswick County, a distance of 8.0 miles for the R-2633AA/AB project and from just north of US 74/76 in Brunswick County to US 421 in New Hanover County, a distance of 10.3 miles for the R-2633B project. The NCDOT will be submitting an application for a U.S. Army Corps of Engineers (USACE) Section 404 Individual Permit as well as a N.C. Division of Water Quality (DWQ) Individual 401 Water Quality Certification, and an Isolated Wetlands Permit in the near future.

NCDOT has reviewed 15 CFR 930.57-62 as well as relevant portions of the State's coastal program under 15A NCAC 07. Specifically, we have considered the coastal water quality policies, mitigation candidacy, and the Brunswick County CAMA Core Land Use Plan. The NCDOT certifies that the proposed activity complies with the enforceable policies of North Carolina's approved management program and will be conducted in a manner consistent with such program.

If you have any questions or need additional information please contact Rachele Beauregard at (919) 431-6764 or rbeauregard@ncdot.gov.

Sincerely,

for

Gregory J. Thorpe, Ph.D., Manager

Project Development & Environmental Analysis Branch

cc: Stephen Lane, NCDOT

MAILING ADDRESS:
NC DEPARTMENT OF TRANSPORTATION
PROJECT DEVELOPMENT AND ENVIRONMENTAL ANALYSIS
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Coastal Zone Consistency Certification Supporting Information for the NCDOT's Request to Construct a fully controlled access freeway on new alignment from US 17 north of the NC 87 intersection in Brunswick County, to US 421 in New Hanover County (Wilmington Bypass). NCDOT TIPs R-2633AA/AB and R-2633B.

History

In accordance with the National Environmental Policy Act (NEPA) and North Carolina Department of Transportation (NCDOT) policy, a Scoping Letter for the proposed Wilmington Bypass project was sent on February 15, 1991, initiating coordination with agencies and local officials. Details of the proposed study corridors were included as part of the letter.

The 1972 Wilmington Transportation Study was the first study to identify the need for a circumferential route around the City of Wilmington from US 17 in Brunswick County to US 17 in New Hanover County. The 1985 update of the Wilmington Transportation Study recommended the loop be shifted northward to take into account the extension of I-40. Following adoption of the 1985 Wilmington Transportation Study, the route was added to NCDOT's 1990-1996 TIP as a four-lane freeway and renamed the Wilmington Bypass. The project was designated as R-2633 and extended from US 17 in Brunswick County to I-40 in New Hanover County. Planning and environmental studies began in August 1990. The project was split into 3 sections (A, B, and C), with break points just south of the proposed US 74/76 interchange and at the US 421 interchange. In 1994, Governor James Hunt's Transportation 2001 Plan recognized the immediate need to relieve traffic congestion in downtown Wilmington and accelerated the schedule for the improvements to R-2633C. In order to accomplish the accelerated schedule, the NCDOT, in consultation with the Federal Highway Administration (FHWA), determined that two NEPA Environmental Impact Statements (EIS) should be prepared; one for R-2633C and one for R-2633A&B. The Draft EIS (DEIS) for R-2633C was approved on January 31, 1995. The Final EIS (FEIS) for R-2633C was released on November 7, 1997 and the Record of Decision (ROD) was signed on January 29, 1998. Construction of R-2633C was completed in June 2006 and designated as I-140.

The DEIS for R-2633A&B was released on December 24, 1996 and a reevaluation of the DEIS was approved in February 2007. The FEIS for R-2633A&B was circulated in April 2007 and the ROD in October 2007. In the EIS, the No-Build, Transportation System Management (TSM), Multi-Modal (Mass) Transit, and four build alternatives were evaluated.

In 2009, R-2633A was renamed R-2633AA&AB with the inclusion of a portion of Section B to provide a logical terminus to the previous Section A at US 74/76 and was let February 16, 2010 as a Design-Build project.

Project Description

The NCDOT Division of Highways, in consultation with the FHWA, proposes to provide a fully controlled access freeway on new alignment from US 17 just south of NC 87 in Brunswick County to US 421 in New Hanover County. The R-2633AA&AB project is approximately 8.0-miles in length and provides a portion of the urban loop around Wilmington, NC. The R-2633AA&AB project begins at US 17 just south of NC 87 and terminates just north of US 74/76 near Leland. The R-2633B project, approximately 10.3 miles in length, begins to the north of the proposed US 74/76 interchange and terminates at the previously constructed R-2633C near US 421. Right of way

acquisition for R-2633AA&AB is complete and construction is scheduled to begin in January 2011. R-2633B is in preliminary design with a construction let date set for November 12, 2012.

US 17 is the major north-south route for eastern North Carolina east of I-95 and is currently a congested roadway segment. The project will increase traffic capacity and reduce traffic volumes on existing US 17, and complete a critical link in the National Highway System. When completed, the R-2633 project in its entirety (AA, AB, B, and formerly constructed C Sections) will be designated as I-140. R-2633C is currently designated as I-140. The project will increase mobility, support economic growth, improve military transportation routes within the region, and improve the existing regional transportation system by providing a continuous freeway route for through traffic to bypass downtown Wilmington. NCDOT "Strategic Highway Corridors" are a network of the most important roads in the state. These Strategic Highway Corridors require mobility and safety as the primary functions of the facility. The route will also facilitate hurricane evacuation in the growing coastal areas of Brunswick County by providing connectivity with US 17, US 74/76, and eventually to US 421 and I-40 with construction of R-2633B.

Alternatives

Alternatives considered for this project included the No-Build, TSM, Multi-Modal Transit, and four Build Alternatives. As discussed in the FEIS, the No-Build, TSM, and Mass Transit Alternatives did not meet the purpose and need for the project. The four build alternatives studied were all on new location connecting US 17 and US 421 at R-2633C and selected from thirty-six preliminary alternative corridor segments.

Alternative 9 (with the Pink alignment near Spring Hill – see Figure 2-6 of the FEIS on page 2-23) was selected as the Preferred Alternative. The decision was based primarily on an analysis of relevant environmental and social public interest factors, including impacts to wetlands, fish and wildlife habitat, flood hazards and floodplain functions, water quality, protected species, residential and business relocations, cultural and historic resources, indirect and cumulative effects, and other social and economic factors.

The R-2633AA&AB project alignment begins at US 17 just south of NC 87, between Bishop and Spring Hill, and continues north toward the military railroad "turnaround" yard to parallel the western fence line of the yard. The alignment then turns northwest and intersects with US 74/76 at the west end of the Leland Industrial Park. Grade separation is provided at the project's two interchanges (US 17, US 74/76).

The R-2633B project alignment begins just north of the US 74/76 interchange and curves east through the Leland Industrial Park to cross the railroad tracks west of Davis Yard. The alignment parallels the north side of the railroad tracks through Eastbrook, and turns northeast at Davis Yard toward the Cape Fear River. The alignment crosses the Cape Fear River and associated wetlands on a proposed high-level, fixed-span bridge. The project terminus aligns with R-2633C at US 421, south of Lake Sutton and the Progress Energy Plant.

R-2633AA&AB includes two wildlife crossing bridges (with associated 10-foot chain link fence) and three bridges that were lengthened for wildlife. The bridge over Bishop Branch (NC 87) was set at a length to span the riparian wetlands. R-2633B includes a wildlife crossing (culvert), bridges associated with Cartwheel Branch, and a bridge over the Cape Fear River and Toomers Creek.

The NCDOT will apply for a permit modification for R-2633B when final design is complete. Construction will not commence on R-2633B until permit modifications have been received based on final design. The current let date is November 12, 2012, however, the project may advance as funds become available.

Mitigation

The NCDOT has avoided and minimized impacts to jurisdictional resources to the greatest extent possible throughout the planning and design of this project. The unavoidable impacts to jurisdictional wetlands and streams will be offset by on-site restoration and preservation as well as off-site mitigation by the NC Ecosystem Enhancement Program (EEP).

On-site Restoration and Preservation

An on-site mitigation opportunity was recognized on Section AA/AB of the project through the removal of the existing NC 87 (Maco Road) roadway fill and double culvert carrying Bishop Branch. The mitigation site will provide restoration of 66 linear feet of Bishop Branch and 0.63 acre of riparian wetlands as well as preserve an additional 2.97 acres of riparian wetlands and 570 linear feet of Bishop Branch. This site will provide mitigation for impacts to the 1.01 acres of impact to riparian wetlands and 180 linear feet of stream.

Compensation

The NCDOT will utilize the EEP for compensatory mitigation requirements for the remaining impacts to 16.38 acres of non-riparian wetlands, 6.87 acres of riparian and 447 linear feet of jurisdictional stream resulting from the construction of the R-2633AA/AB. There are no CAMA wetlands on Section A.

Section B impacts were obtained from the 4C plans which are currently under revision. The provided numbers are preliminary and will be updated at final design and included with the CAMA Major Development Permit Application for R-2633B. Preliminary impacts for Section B include 64.22 acres of non-riparian wetlands, 0.93 acres riparian wetlands and 276 linear feet of stream that will be mitigated through EEP. NCDOT will coordinate with DCM to determine any CAMA wetlands present during final design.

Threatened and Endangered Species

The United States Fish and Wildlife Service lists 16 federally protected species for Brunswick and New Hanover Counties as of January 31, 2008 (Table 1). Re-surveys were conducted in 2009 for the R-2633AA/AB Section and in 2010 for the R-2633B.

Table 1. Federally Protected Species in Brunswick¹ and New Hanover² Counties.

Scientific Name	Common Name	Federal Status	Habitat Present	Biological Conclusion
<i>Acipenser brevirostrum</i> ^{1,2}	Shortnose sturgeon	E	Yes	MANLTAA*
<i>Alligator mississippiensis</i> ^{1,2}	American alligator	T(S/A)	N/A	N/A
<i>Amaranthus pumilus</i> ^{1,2}	Seabeach amaranth	T	No	No Effect
<i>Caretta caretta</i> ^{1,2}	Loggerhead sea turtle	T	No	No Effect

Scientific Name	Common Name	Federal Status	Habitat Present	Biological Conclusion
<i>Carex lutea</i> ²	Golden sedge	E	Unknown	Unknown
<i>Charadrius melodus</i> ^{1,2}	Piping plover	T	No	No Effect
<i>Chelonia mydas</i> ^{1,2}	Green sea turtle	T	No	No Effect
<i>Dermochelys coriacea</i> ¹	Leatherback sea turtle	E	No	No Effect
<i>Haliaeetus leucocephalus</i> ^{1,2}	Bald eagle	BGPA	Yes	No Effect
<i>Lepidochelys kempii</i> ¹	Atlantic ridley sea turtle	E	No	No Effect
<i>Lysimachia asperulaefolia</i> ^{1,2}	Rough-leaved loosestrife	E	Yes	MANLTAA*
<i>Mycteria americana</i> ¹	Wood stork	E	Yes	MANLTAA*
<i>Picoides borealis</i> ^{1,2}	Red-cockaded woodpecker	E	Yes	No Effect
<i>Puma concolor cougar</i> ^{1,2}	Eastern cougar	E	Yes	No Effect
<i>Thalictrum cooleyi</i> ^{1,2}	Cooley's meadowrue	E	Yes	No Effect
<i>Trichechus manatus</i> ^{1,2}	West Indian Manatee	E	Yes	MANLTAA*

*E-Endangered T-Threatened T(S/A)-Threatened due to Similarity of Appearance BGPA-Bald and Golden Eagle Protection Act

**May Affect, Not Likely To Adversely Affect

A letter from the USFWS dated June, 17 2004 and appended in the FEIS concurred on the Biological Conclusions for these species. Re-surveys were completed in summer of 2009 for Section A and in 2010 for Section B. No individual species were found within the project right of way, except for the red-cockaded woodpecker (RCW). Surveys in spring/summer of 2009 revealed that the RCW cluster identified on Section A was active again. The concurrence letter dated June 17, 2004 was based on the removal of 0.07 acres of foraging habitat. Based on further evaluation, foraging habitat removals will now be 0.21 acres. In an email from USFWS, dated July 13, 2009, they concurred that the 0.21 acres of foraging habitat removals would have “No Effect” on the red-cockaded woodpecker. This is a change from the FEIS in which the Biological Conclusion was “May Affect, Not Likely to Adversely Affect”. All other Biological Conclusions remain valid for the project.

A letter in the FEIS from the National Oceanic and Atmospheric Administration (NOAA), dated August 24, 2006, concurred that this project is not likely to adversely affect the shortnose sturgeon. The NCDOT has committed to no in-water work in the Cape Fear River and Toomers Creek between February 1 and June 15 of any year. For the purposes of this moratorium, in-water is defined as the main channel where the vegetation line meets open water and extends 35 meters (115 feet) into adjacent wetlands on both sides of the channel but does not include uplands. The in-water work moratorium prohibits pile installation (both vibratory and impact) and activities associated with the construction of any temporary work bridge. This moratorium applies to Section B only.

The West Indian manatee may occur in the Cape Fear River on Section B of the project. Due to this potential, a commitment was included in the FEIS and ROD to inform all personnel associated with the project that manatees may be present during the months of June through October. The Project Engineer will ensure that the Contractor has a copy of the US Fish and Wildlife Service Guidelines for Avoiding Impacts to the West Indian Manatee - Precautionary Measures for Construction Activities in North Carolina Waters on-site during construction. A copy of the Guidelines can be found at the following website address (<http://nc-es.fws.gov/es/publications.html>). The contractor

will be responsible for complying with the Guidelines and reviewing them with all personnel associated with the project construction. This requirement applies to Section B only.

The wood stork and rough-leaved loosestrife have “May Affect, Not Likely to Adversely Affect” biological conclusions based on suitable habitat present within the project area. Neither species was found within either the Section A or B right of way during the resurveys of 2009 and 2010.

Golden sedge is a recent addition to the USFWS list for New Hanover County (updated 8/2/2010) and has a record status of “probably/potential” for being in New Hanover County. This species was not included in the FEIS or in the resurveys completed this year. R-2633AA/AB is entirely within Brunswick County and the addition of this species does not affect the AA/AB project. Surveys for this species will be completed prior to the permit modification for Section B.

Cultural Resources

The State Historic Preservation Office (HPO) and NCDOT concurred that the project will have no direct effect on any known historic, architectural, or archaeological site; however, both architectural and archaeological sites fall within close proximity to the project right of way.

Archaeology

Archaeological survey and evaluation were done in compliance with Section 106 of the National Historic Preservation Act (1966, as amended) and the guidelines issued by the Advisory Council on Historic Preservation. The location of one (1) previously recorded archaeological site (31NH39**) was reestablished during the course of this survey. Eight (8) previously unrecorded archaeological sites (31BW602-31BW609) were located within the project Area of Potential Effects. Based on the results, Site 31NH39** has the spatial integrity and ability to yield significant information pertaining to North Carolina history in order to be considered eligible for the National Register of Historic Places (NRHP) per Criterion D. In addition, avoidance has been recommended for Site 31BW604**, a small family cemetery. The seven (7) remaining archaeological sites (31BW602, 31BW603, 31BW605-31BW609) represent low-density scatters of prehistoric artifacts, therefore, lacking the spatial integrity and ability to yield significant information pertaining to prehistory in order to be considered eligible for the NRHP per Criterion D. Based on the current design plans, both archaeological sites (31NH39** and 31BW604**) are either located within or adjacent to the Study Corridor. Even though both archaeological sites will be avoided by the proposed construction, temporary protective fencing will be installed prior to construction to ensure that no inadvertent impacts to Sites 31NH39** and 31BW604** occur. Therefore, no further archaeological work is recommended unless design plans change prior to construction.

Historic Architecture

The Goodman House and Doctor’s Office was determined eligible for listing in the NRHP. The ROD states that the right of way will be approximately 120 feet away from the Goodman House and Doctor’s Office, and will be separated by a forested area between the right of way and the property. The project commitment requires the termination of Goodman Road in a cul-de-sac near the western edge of the NRHP-eligible boundary. The FHWA, NCDOT and HPO determined (per concurrence letter of February 2006, Appendix A in the FEIS) that the Selected Alternative alignment would have no effect upon the Goodman House and the Doctor’s Office

provided that 1) NCDOT shall use best management practices for tree removal to reduce impacts to the woods adjacent to the site, and 2) NCDOT shall plant the edge of the right of way between stations 34+50 and 36+00 (2010 stations 110+00 to 113+75) with native evergreens to further screen the new facility from the site.

Other Permits

In addition to the DCM Consistency Determination for R-2633AA/AB, permits to be obtained include an Individual 404 permit and an Individual 401 Water Quality Certification (applications scheduled to be submitted in October 2010). Other permits required for this project include an Isolated Wetland Permit and State Stormwater permit.

At this time, the design for Section B (US 74/76 to US 421) as described earlier and in the FEIS will impact an AEC with the Cape Fear River crossing. A CAMA Major Development Permit and Coast Guard Permit application will be submitted and issued prior to construction of R-2633B and include final impacts associated with construction of Section B. NCDOT will make all attempts to minimize impacts to this CAMA AEC. No AECs will be impacted by Section AA/AB of this project.

Division of Coastal Management (DCM) General Policy Guidelines for the Coastal Area

The general policy guidelines in 15A NCAC 07 have been reviewed for applicability to this project in its entirety. R-2633AA/AB will not impact any AECs. R-2633B will require a CAMA permit prior to construction due to the proposed Cape Fear River crossing. Specifically, the .0700 rules (mitigation), and the .0800 rules (water quality) were reviewed for compliance for R-2633AA/AB. This project will not affect shoreline erosion or shoreline access. However, this project will require compensatory mitigation and impact water quality. The project has been designed to avoid and minimize jurisdictional areas to the largest extent practical. Best Management Practices will be in place during construction; mitigation will be accomplished through both on-site opportunities (Bishop Branch at existing NC 87) and in-lieu fee compensatory mitigation provided through EEP.

Brunswick County Multi-Jurisdictional CAMA Core Land Use Plan

The *Brunswick County Multi-Jurisdictional CAMA Core Land Use Plan* (adopted in 2007) was reviewed for policies and statements that would pertain to this project. The purpose and need for this project, as identified in the FEIS, is to increase traffic capacity and reduce traffic volumes on congested roadway segments and complete a critical link in the National Highway System and the Intrastate transportation system. The project will increase mobility, support economic growth, improve military transportation routes within the region, and improve the existing regional transportation system by providing a continuous freeway route for through traffic to bypass downtown Wilmington. The route will also facilitate hurricane evacuation in the growing coastal areas of Brunswick County by providing connectivity with US 17 and US 74/76 upon completion, and US 421 and I-40 upon completion of Section B.

The Brunswick County Vision Statement (section 4, page 5) of the *Brunswick County Multi-Jurisdictional CAMA Core Land Use Plan* (2007) states:

“Brunswick County shall seek to preserve and enhance its natural and human resources. The County will plan for and accommodate future growth while

simultaneously maintaining the quality of life for current and future residents. Brunswick County will pursue accomplishment of the following mission statements:

- Set high standards for responsible, well managed growth, and guide development patterns through comprehensive planning and community involvement.
- Develop a high degree of cooperation among County government and municipal governments and citizens.
- Promote quality education and lifelong learning opportunities in Brunswick County.
- Identify goals and propose strategies for the development of new businesses and industries, agribusinesses, seafood products, tourism, and recreational and retirement areas in all parts of the County.
- Provide an infrastructure system that meets the present and future needs of its citizens, supports a vibrant economy, protects the environment, and adds to the overall quality of life.
- Provide county-wide services that enhance the health, safety, and quality of life for Brunswick County citizens.
- Enable Brunswick County residents to meet their needs for food, clean water, clothing, housing, employment, health care, and life enrichment activities.”

The *Brunswick County Multi-Jurisdictional CAMA Core Land Use Plan* also states (Section 5, page 107) Brunswick County was the fourth fastest growing county in North Carolina between 2000 and 2005. “The significant population growth translates into significant land development. The County is concerned about inadequate roads to accommodate this growth. It is critical that the County work with the state to plan for road improvements, the proper size and location of future roads, and funding options.” The plan also states (Section 6, page 45) Brunswick County will undertake actions to support maintenance of safe hurricane evacuation routes.

R-2633AA/AB will help promote economic development in Brunswick County by providing a reduction in congestion on US 17, provide route continuity, improve safety on US 17, and ensure a safe hurricane evacuation route. Benefits to both local and through traffic include reduced travel times and improved level of service. The proposed improvements are expected to provide a continual movement for traffic and eventually, with construction of R-2633B, a bypass around Wilmington.

Based on the information stated above, NCDOT concludes that this project is consistent with the *Brunswick County Multi-Jurisdictional CAMA Core Land Use Plan* (2007).



October 12, 2010

Mr. Gregory J. Thorpe, Ph.D.
Manager, Project Development and Environmental Analysis Branch
North Carolina Department of Transportation
1548 Mail Service Center
Raleigh, North Carolina 27699-1548

Dear Dr. Thorpe:

Subject: EEP Mitigation Acceptance Letter:

R-2633A and B, US 17 (Wilmington Bypass) from NC 87 South of Bishop to West of US 421 North of Wilmington, Brunswick and New Hanover Counties

The purpose of this letter is to notify you that the Ecosystem Enhancement Program (EEP) will provide the compensatory stream, riparian, and non-riparian wetland mitigation for the subject project. Based on the information supplied by you on October 12, 2010, the impacts are located in CU 03030005 of the Cape Fear River Basin in the Southern Outer Coastal Plain (SOCP) Eco-Region, and are as follows:

Cape Fear 03030005 SOCP	Stream			Wetlands			Buffer (Sq. Ft.)	
	Cold	Cool	Warm	Riparian	Non- Riparian	Coastal Marsh	Zone 1	Zone 2
Impacts (feet/acres)	0	0	723	7.80	80.14	0	0	0
Mitigation Units (Credits-up to 2:1)	0	0	1,446	15.60	160.28	0	0	0

This mitigation acceptance letter replaces the mitigation acceptance letters issued on October 20, 2009 for Sections A and B. EEP commits to implementing sufficient compensatory stream, riparian, and non-riparian wetland mitigation credits to offset the impacts associated with this project in accordance with the N.C. Department of Environment and Natural Resources' Ecosystem Enhancement Program In-Lieu Fee Instrument dated July 28, 2010. If the above referenced impact amounts are revised, then this mitigation acceptance letter will no longer be valid and a new mitigation acceptance letter will be required from EEP.

If you have any questions or need additional information, please contact Ms. Beth Harmon at 919-715-1929.

Sincerely,

William D. Gilmore, P.E.
EEP Director

cc: Mr. Brad Shaver, USACE – Wilmington Regulatory Field Office
Mr. Brian Wrenn, Division of Water Quality, Wetlands/401 Unit
Files: R-2633 A and B

Restoring... Enhancing... Protecting Our State



Subject: Minutes from Interagency 4B Hydraulic Design Review Meeting
On August 22, 2007 for R-2633A in Brunswick County

Team Members:

Jennifer Frye-USACOE	(not present)
David Wainwright-NCDWQ	(present)
Steve Sollod- DEM	(present)
Stephen Lane-DEM	(present)
Travis Wilson-NCWRC	(present)
Gary Jordan-USFWS	(present)
Kathy Matthews-EPA	(present)
Vince Rhea-PDEA	(present)

Participants:

Marshall Clawson, NCDOT Hydraulics
Dan Duffield, NCDOT Hydraulics
Dan Robinson, Kimley-Horn and Associates
David Fuh., Ko & Associates
Herbert Turner, Ko & Associates
Joe Blair, NCDOT Div 3 Construction
Mason Herndon, NCDOT Div 3 DEO
David Scheffel, NCDOT Roadway
Pamela Porter, NCDOT Roadway
Mark Staley, NCDOT Roadside Env.
Lonnie I. Brooks, NCDOT Structures
Rachelle Beauregard-NCDOT NEU
Chris Rivenbark-NCDOT NEU
Marissa Rodman-NCDOT NEU
Donnie Brew-FHWA

General Comments:

Marshall Clawson began the meeting with introductions and turned the meeting over the Herb Turner.

All discharges into wetlands will be at a non-erosive velocity. Within wetlands, riprap outlet pads are have specified at culvert to dissipate outlet velocities, as required. For jurisdictional stream crossings, the inverts of all proposed box and pipe culverts are buried one foot below the channel bed.

The Division has requested a copy of the draft culvert survey reports and construction sequences for a constructability review. The culvert construction sequences should be incorporated into the project traffic control phasing plans.

Gary Jordan had a question about the wildlife crossings. He requested that the wildlife crossings and the drainage structures lengthened for to accommodate wildlife passage be identified during the plan sheet review.

There are project commitments on planning document green sheets that would affect hydraulics design:

1. Allowing for animal crossing, these were decided in the field and are shown on the plans
2. Span the wetland on the new alignment of NC87 (Plan Sheet 33)

General note: All culverts and pipes on Jurisdictional Streams will be buried

Plan Sheet Comments:

Plan Sheet 7:

- Existing NC 87 will dead-end prior to US 17. We discussed whether existing NC 87 could be terminated prior to crossing Bishop Branch to allow for removal of existing culvert and possible on-site mitigation. Roadway will determine termination of NC 87 and NEU will coordinate on-site mitigation based where NC87 is terminated.
- The existing culvert under US 17 over Bishop Branch is deficient and is being replaced with a larger culvert, (2) @ 10' X 7' RCBC

Plan Sheets 8:

- A small wetland impact is continued from the previous plan sheet at the match line.

Plan Sheets 9:

- Interchange sheet, some wetland impact, small amount, also there are some wetlands that are outside the construction limits.
- There are two jurisdictional streams in the vicinity of existing US 17. The JD stream begins approximately 430' Lt of -NBL- 28+00. Stream impacts occur upstream of the existing 42" concrete pipe that will be extended. No impacts anticipated to the second JD stream that parallels existing US 17 along the RT side.

Plan Sheet 10:

- Impacts occur at wetlands and the JD stream at the culvert which is Trib to Morgan Creek. The culvert is being replaced with a larger culvert, (2) @ 8' X 7' RCBC

Plan Sheet 11:

- Impacts occur at wetlands and the JD stream at the culvert, which is Morgan Creek. The culvert is being replaced with a larger culvert, (2) @ 10' X 8' RCBC.
- Wetland impacts occur at the crossing for the service road.

Plan Sheet 13:

- Large wetlands - small impacts to these wetlands

Plan Sheet 20:

- Large wetlands - small impacts to these wetlands

Plan Sheet 21:

- Wetlands – 150' bridge crossing – wildlife crossing with approximately 10' clearance.
- Channel close to match line is non JD per NEU

Plan Sheet 24:

- JD stream crossing –culvert, (1) 8' x 7' RCBC
- Per NEU stray lines at the top of the page – non JD

Plan Sheet 25:

- JD stream crossing – 60" pipe buried

Plan Sheet 27:

- 100' bridge crossing –wild life crossing – 8' clearance.
- Large wetland impact – (2) wetland equalizer pipes are provided.
- Again comment from US Fishing and Wildlife about fencing, per Roadway plans are preliminary and fencing will be added through out to match hearing map

Plan Sheet 28:

- JD stream crossing – 54" pipe buried
- Large wetland with (3) wetland equalizer pipes provided

Plan Sheet 29:

- Wetlands impacts at both ends of the plan sheet
- Channel in the middle of the plan sheet is non JD

Plan Sheet 30:

- Large wetland area with (3) wetland equalizer pipes provided

- JD stream and wetland associated with stream, bridging the wetlands. Bridge, 150 ft in length, has been lengthened for wildlife crossing with a clearance of 16 feet.
- Division recommends Shoulder Berm Gutter at all guardrail areas for maintenance reasons and “washes” even need to look at the high side of super. This item will be reviewed and discussed further at the project field inspection.

Plan Sheet 14:

- JD stream and wetland associated with stream, bridging the wetlands. Bridge, 235 ft in length has been lengthened for wildlife crossing with a clearance of approximately 12 feet.

Plan Sheet 15:

- Near -L- 110+00 Lt, total take was discussed for wetland impact at the inlet of the pipe (36” pipe with rock dissipater because of the slope). Hydraulics will provide area of wetland at 4C meeting for total take determination.
- To the bottom of the plan sheet, a very small impact to another wetland.

Plan Sheet 16:

- Two Large Wetland and JD stream with a 72” pipe being buried for the JD stream and a 36” floodplain pipe

Plan Sheet 17:

- Three wetlands sites are impacted. Pipe culverts are proposed at each wetland site:
 1. A 42” with rock dissipater pad
 2. A 48” buried for the JD stream even though the JD stream starts at the outlet of the proposed pipe.
 3. (1) wetland equalizer pipe (Total take was discussed for wetland impact at the inlet of the pipe to the left of -L-. Hydraulics will provide area of wetland at 4C meeting for total take determination.)

Plan Sheet 18:

- JD stream and associated wetlands – bridge crossing. Bridge, 240 ft in length, has been lengthened for wildlife crossing with a clearance of approximately 16 feet.
- Comment from US Fish and Wildlife – 10’ high fence should be added for safety – not asking for it but it should be considered and needs to be shown. Plans are preliminary and fencing will be added through out the project to match hearing map.

Plan Sheet 19:

- The other channel at the end of the sheet is non JD per NEU.

Plan Sheet 33:

- Wetlands and JD stream crossing – Bridge, 450 in length, has been lengthened to span wetlands and not for wildlife crossing.

End of Meeting

Subject: Minutes from the **Interagency 4C Concurrence Meeting** for Hydraulic Design & Permit Drawings Review on August 18, 2010 for **R-2633AA&AB in Brunswick County**

Team Members:

Brad Shaver –USACE
Gary Jordan – USFWS
Travis Wilson – NCWRC
Steve Sollod – NCDWM
David Wainwright - NCDWQ
Chris Militscher – EPA
Nilesh Surti – Roadway
Rachelle Beauregard – NEU
Mason Herndon–NCDWQ (Previous DEO)
Stephen Lane - NCDWM (absent)
Ron Lucas– FHWA (absent)
Tim Mcfadden – Roadway (absent)
Derrick G. Weaver - PDEA (absent)
Jackson Provost– Division 3 (absent)

Other Participants:

Marshall Clawson - Hydraulics
Dan Duffield - Hydraulics
Vince Rhea - PDEA
Nilesh Surti – ADU
Khaled Al-Akhdar – ADU
Mark Staley - REU
Chris Rivenbark – NEU
Pete Allen – NEU
Jason Elliott – NEU
Elizabeth Lusk – NEU
Wayne Currie – NCDOT Construction
Jonathan Henderson, HDR
James Rice, HDR
Vickie Miller, HDR
Paul Meehan, HDR
Wyatt Yelverton, HDR
Josh Massrock, HDR
Phil May, Carolina Ecosystems
Drew Johnson, Barnhill
David Weir, Barnhill
Randall Gattis, Sanford

General introduction of the project was initiated by Marshall Clawson. Introductions were made by all in attendance. Jonathan Henderson, hydraulic design engineer for the Barnhill/HDR Design-Build (DB) Team, initiated the review by describing the overall project and new project limits with the US74/76 Interchange now included in the Section designated as AA & AB. Concurrence Point 4B was held prior to the DB award and the project retains the intent of the 4B hydraulic design with minimal changes. The B Section has already been through 4C and would not be discussed at this time. The B Section will be included in the permit with preliminary drawings only. Jonathan stated the contractors were in the room and available to answer construction questions and discussed several avoidance and minimization efforts that have taken place since 4B including lowering the roadway (fill slopes), providing 5 feet of mechanized clearing rather than 10 feet (Method III) across the project, hand clearing at bridge locations, and top down construction as well as sequencing bridge construction to avoid additional temporary impacts associated with work bridges. Two handouts (Meeting Agenda and Site Photos) were passed out to those in attendance.

Each plan sheet was then reviewed and the mitigation site was discussed.

Sheet 7 (Site 1) Existing US 17 / Mitigation Site on NC 87:

Jonathan discussed the triple 72" pipes vs. previously proposed culverts and the benefits of using pipes during construction and maintaining traffic at Site 1. Benefits include increased traffic safety and shorter construction time.

Noted that onsite mitigation is located on this sheet as well as continuing to Sheets 35 and 36. Directed attendees to the Mitigation overview sheet on the table for discussion.

Brad Shaver asked where the preservation ends and stated that restoration should follow natural flood plain boundary.

Jason Elliott stated that they tied the boundary to the existing wetland boundaries.

Brad Shaver asked why the mitigation didn't take in the area closer to US 17 and the existing 87 tie-in.

Vickie Miller and Jason Elliott both stated utility issues and right-of-way restrictions were noted in this area.

Brad Shaver asked about removal of the old road bed that wasn't included in the mitigation preservation area.

Vickie Miller stated there would be more damage in the area by pulling the fill out due to the large trees and other wetland vegetation in the roadbed

Jason Elliott concurred with this assessment.

Note a match line is needed at the mitigation site on this sheet.

Sheet 9 (Sites 2 and 3) Existing US 17 interchange and Service Road:

Rachelle Beauregard noted that Site 3 needs a label on the blow-up view.

Sheet 10 (Site 4) Existing US 17:

Rachelle Beauregard stated that Sites 1, 3, and 4 currently do not have a JD. Boundaries may change at these areas based on site verification with Brad Shaver on 9/2/2010 (follow up email on 8/20 moves this meeting to 9/7/2010).

Brad Shaver asked if pipes are located in the thalweg of the channel and if it is usually flooded. Jonathan Henderson stated that they are tying into the survey data and will be field adjusted if needed.

Chris Militscher asked if the fill on the inlet side is located in open water or wetland.

Jonathan Henderson and Vickie Miller responded that it is below the beaver dam and referred to the photos provided.

Rachelle Beauregard said the area was called wetland in the JD mapping and therefore is shown as such on the impact sheets.

Brad Shaver said to include a stream channel and assume surface water impacts.

Mason Herndon suggested using aerial photography to determine location of the channel. Rachelle Beauregard stated providing the location of the channel would be the responsibility of Locations & Surveys.

Jonathan Henderson responded that HDR will resolve stream location and include surface water on the final permit impact drawings.

Sheet 11 (Sites 5 and 6) Existing US 17, Service Road, and Waterline:

Brad Shaver requested more legible blow-ups as they are very busy and difficult to differentiate impacts.

Marshall Clawson said to remove the rip rap symbols to clarify.

David Wainwright responded by suggesting that the blowup be on a separate sheet and stated the permit review would possibly stop if the plans were not legible.

Discussion about the total take of Site 6 ensued.

Brad Shaver remarked that the numbers for total take don't look correct.

Chris Rivenbark stated that previous total take decisions were based on acreage and that if impacts to a site were greater than ¼ acre it is not automatically considered a total take.

Brad Shaver responded that the area has temporary impacts from water line it should still be a total take.

Gary Jordan stated that the location of the impacts is also a factor besides acreage and that habitat loss should be considered.

Elizabeth Lusk asked if the temporary impact would be restored and stated that NCDOT should not have to restore an area that is a total take.

Brad Shaver responded that if mitigation is included then no restoration required.

A discussion on how to show the total take areas on the plans began. Everyone agreed to explain with a note rather than showing fill or other hatching and to include with a note the acreage of impact and acreage of total take in the summary impact table.

Brad Shaver noted that the area is probably a mowed shoulder due to the location and plans to check it during JD visit.

Chris Militscher stated that the area is already impacted and a 1:1 mitigation ratio is acceptable. Others concurred.

Sheet 13 (Site 7) NBL – Bridge:

Travis Wilson noted this Bridge was lengthened for wildlife passage.

Vickie Miller started a discussion about the work bridge proposed at this location noting that the site has been logged and referred to the photos of the area on Sheets 13 and 14.

Brad Shaver said that he didn't have an issue with using a temporary pipe if the channel is restored.

David Wainwright stated that the pipe should be hydraulically sized and be a temporary impact only. Pull the pipe out when complete.

Brad Shaver noted that the bank stabilization shown for the stream should not be considered surface water impacts and asked if there is any fill below the ordinary high water mark (OHWM).

Rachelle Beauregard responded that rip-rap will be below OHWM but not in bed of stream. Brad Shaver said he would clarify with Rachelle Beauregard on how the impacts should be calculated.

Sheet 14 (Site 8) L-line – Bridge:

Chris Militscher asked if Site 8 is jurisdictional.

Jonathan Henderson and Vickie Miller agreed that it is jurisdictional.

Vickie Miller asked if a temporary pipe crossing would be acceptable at the location which has been logged.

Drew Johnson stated that a temporary pipe would be helpful in this location to allow hauling of borrow material to other parts of the project.

David Wainwright asked how long the temporary pipes would be in place.

Drew Johnson responded with 5 to 6 months maximum.

All agencies concurred this would be acceptable.

David Wainwright added that the pipe must be placed outside of wetland area and kept to minimum width necessary for hauling traffic (two directions). Approximately 60-foot crossing was mentioned but the exact width will be determined by the distance required to pass two hauling vehicles safely.

Sheet 15 (Sites 9 and 10) L-line:

Rachelle Beauregard asked for the acreage calculation of the total take at Site 9 be verified.

Chris Rivenbark asked if Site 9 should be a total take since the hydrology will be retained.

Chris Militscher responded that if hydrology is maintained, it should not be a total take since the wetland would still function.

All concurred that Site 9 will not be a total take.

Mason Herndon asked if the pipe outlet could be aligned better with the wetland.

David Wainwright suggested adjusting the pipe in the field to match existing conditions.

Chris Militscher asked about the vegetative screening at Site 10 being located in the wetland.

Vickie Miller stated that the vegetative screening was a commitment for historic property.

Paul Meehan noted that this was to be contracted separately by NCDOT and is not part of the DB Project.

Everyone agreed to pull the vegetated screening note outside out of wetland since the alignment has already been logged.

David Wainwright said that the double line in lower right wetland boundary needs to be fixed prior to permit submittal.

Sheet 16 (Sites 11, 12, 13) L-line:

Chris Militscher asked if this area has been logged.
Vickie Miller responded that it has been.

A general discussion of Site 11 being a total take ensued and the calculation of the total takes were questioned.

Chris Militscher, Travis Wilson and Brad Shaver all agreed Site 11 would not be a total take.

Travis Wilson noted that on Sheets 13/14 wildlife fencing was mentioned in discussion but not intended to be placed there. The wildlife fencing (10' chain link) is show in the correct location on the plans. He suggested that the line style be changed to differentiate the C/A fence by placing R/W line style only in the area with 10' wildlife fencing.

Sheet 17 (Sites 13, 14, 15, 16) L-line:

Site 15 was considered a total take due to ditching and draining. The impacts were included in the summary table.

Rachelle Beauregard asked for Site 14 to have bank stabilization as a separate line on the summary impact table to differentiate that area from fill in the surface water and a note that the jurisdictional stream starts at outlet of pipe on the plans.

Chris Militscher commented that rip-rap needed to be included as fill in calculations and show on the plans at Site 13 and 15 and other locations on the plans where this is missing.

Sheet 18 (Site 17) L-line – Bridge:

Travis Wilson stated the wildlife fence needs to connect under the bridge to prevent wildlife from being funneled toward the roadway.

Mason Herndon suggested tying fencing to the bridge structure.

Travis Wilson responded that the fence should be at the base of toe protection.

Everyone agreed.

General discussion was held on the need for gates to be provided at the bridge locations for bridge maintenance access and possible animal removal.

Drew Johnson said that they would work with the Division to determine location of the needed gates.

David Wainwright asked for profiles at the bridge locations to be provided.

Rachelle Beauregard stated hand clearing is shown in a small upland area and should be removed.

Sheet 19 (Site 18) L-line:

No comments.

Sheet 20 (Sites 19, 20, 21) L-line:

No comments.

Sheet 21 (Site 22) L-line – Bridge:

Vickie Miller stated that the team took a conservative approach with the temporary work bridge shown at this location but that the area doesn't have a tributary only wetland and asked if everyone would accept a temporary crossing at this location.

Chris Militscher and Brad Shaver agreed to the temporary crossing in this location.

Note that the wildlife fencing should follow the toe of slope at the bridge.

Sheet 22 / 23 (Site 23) L-line:

Chris Militscher stated that the Q10/V10 at the outlet in the ditch is high and asked if it was a ditch or if there are any jurisdictional areas off the page. Also, asked if a pre-formed scour hole (PSH) would work.

Rachelle Beauregard responded that there aren't any jurisdictional areas to the east of the ditch outlet.

Steve Sollod asked if there was anything in place to attenuate flow.

Jonathan Henderson stated that rip-rap was provided to attenuate flow in ditch. The velocity is too great for a PSH.

Sheet 27 (Site 24) L-line – Bridge:

Wildlife fencing should wrap around the toe of slope at the bridge.

Sheet 28 (Sites 24, 25, 26, 27) L-line:

No comments.

Sheet 29 (Site 27) L-line:

No comments.

Sheet 30 (Site 28) L-line:

Chris Militscher noted that the rip-rap in the wetland should be shown as impact.

Sheet 31 (Site 28) L-line:

No comments.

Sheet 32 (Sites 29, 30, 31, and 32) US 74/76 Interchange – Railroad Bridge:

Rachelle Beauregard stated that the wetland boundaries at Site 30 may be altered as she is dealing with a landowner with an existing JD showing less wetlands at this location. She is currently trying to acquire this information for use in the permit.

Marshall Clawson asked if the impacts will extend to the B Section.

Jonathan Henderson stated that the Team used the line provided in the B-Section drawings to avoid the impacts being taken into account twice.

Elizabeth Lusk stated to move the section break line to include all impacts from this project.

General discussion about the wetlands internal to the loops of the interchange developed. Site 32 internal to the interchange was not considered a total take due to the equalizer pipes and a "Do Not Disturb" note being provided. The total take of the wetland to the east of Ramp D will be coordinated with NEU when the size is determined.

Chris Rivenbark suggested shifting the equalizer pipe to middle of this wetland to retain hydrology. The proposed equalizer pipes line up with an existing low area created by the proposed gore.

Steve Sollod commented that there is fill in wetlands on B section beyond break line. This area will be incorporated into the AA/AB Section with the new Section break line.

Discussion about the permits for AA/AB and B:

Brad Shaver agreed that the permit numbering used in 4C for the B section should remain consistent. Also, the revised wetland boundary from the Trask property should be included in the permit if possible.

Sheet 35 (Site 33 and Mitigation Site Continued) –Y04- NC 87 relocation:

Marshall Clawson stated to add a match line at the mitigation site to show the tie to Sheet 7. Steve Sollod requested that a profile be provided for the bridge.

Brad Shaver asked about credit for preservation under the bridge and stated that the hatch lines were confusing.

Rachelle Beauregard stated that the overlap in hatching makes the distinction of preservation from hand clearing difficult.

Jonathan Henderson responded that this will be clarified in the final impact drawings.

Sheet 36 (Mitigation Site Continued)

No comments.

Sheet 37 (Site 34) –Y5-

No comments

Borrow Pits & Haul Roads:

Vickie Miller discussed the four proposed borrow sites. Two are located adjacent to the alignment and two are off the alignment (near Malmo Loop Road and off of Old Town Creek). There will be no impacts to any jurisdictional areas due to borrow activities and buffers have been set based on the Skaggs method. This information will be submitted through the standard reclamation plan approval process. There could be one haul road impact on a recently reviewed property which has an existing 30' road with ditches on either side. The road needs to be at least 40 feet wide to safely pass two hauling trucks. There would be a temporary wetland impact associated with the road widening and ditch relocation.

Chris Militscher asked how much of an impact would occur.

Vickie Miller stated that was not determined at this time due to just learning of these sites earlier in the week and deferred to David Weir for an estimate.

David Weir stated there are probably two areas approximately 300 feet each and 10 feet wide. Concern was raised over the impacts and who would be responsible for mitigation would occur.

Vickie Miller stated that the impacts would be temporary and after hauling was completed that the fill could be removed and the ditch moved back to its original location and restored.

Rachelle Beauregard said to include these areas at the end of the impact summary table.

Gary Jordan asked if T&E reviews were completed for the borrow areas.

Vickie Miller responded that they have been completed for the two adjacent to the alignment and no RCW habitat or cavity trees exist. The site off the alignment to the north doesn't have suitable habitat for RCWs. The site to the south may have suitable habitat and will be reviewed.

Gary Jordan stated that RCW surveys should extend to ½ mile from borrow areas.

Steve Sollod stated to include borrow review information in application.

General Discussions:

Brad Shaver asked if there will be any waste from undercutting expected and if so where it would be placed.

Drew Johnson responded that they will use that material to stabilize slopes and grow vegetation on the slopes. No waste areas are proposed.

Meeting Adjourned

Subject: Meeting Minutes from Interagency Hydraulic Design Review Meeting on August 22, 2007 for R-2633B in Brunswick and New Hanover Counties

Team Members:

Jennifer Frye-USACE	(absent)
Gary Jordan-USFWS	(present)
Travis Wilson-NCWRC	(present)
Cathy Brittingham-NCDCM	(absent)
Steve Sollod-NCDCM	(present)
David Wainwright-NCDWQ	(present)
Chris Militcher-USEPA	(absent)
Kathy Matthews-USEPA	(present)
Donnie Brew-FHWA	(present)
Derrick G. Weaver-NCDOT-PDEA	(absent)

Participants:

Marshall Clawson, NCDOT Hydraulics
Dan Duffield, NCDOT Hydraulics
Stephen Lane, NCDCM
Marissa Rodman, NCDOT-NEU
Vince Rhea, NCDOT-PDEA
Mark Staley, NCDOT-REU
Chris Riverbark, NCDOT-NEU
Rachelle L. Beauregard-NCDOT-NEU
Joe Blair-NCDOT Division 3
Mason Herndon, NCDOT Division 3
Doug Taylor, NCDOT Roadway
Chris Smitherman, NCDOT Roadway
Lonnie I. Brooks-NCDOT Structures
Kevin Alford, Mulkey E & C
Matthew Harvey, Mulkey E & C
Dennis Hoyle, URS
Kristy Pace, URS

Introductions were skipped due to this project being a continuation of the previously held Interagency Hydraulic Design Review on R-2633A. Kevin Alford proceeded with the review.

General

- 3:1 fill slopes will be used in wetland areas in lieu of 4:1 slopes in order to minimize impacts to the wetlands.
- Rip rap pads will be used throughout the project to outlet systems from the -L- line into the wetlands. In all cases we made an effort to outlet outside the wetlands. Rip rap pads were used in lieu of preformed scour holes, since preformed scour holes would require excavation in the wetlands. Also, the rip rap is needed in order to acquire non-erosive velocities in the wetlands.
- Rip rap pads will also be used prior to outleting ditches into wetlands in order to obtain a non-erosive velocity.
- Equalizer pipes have been placed through the wetlands. 48" concrete equalizer pipes were used and the inverts were not buried. A note will be placed on the plan sheets that states the inverts will not be buried for equalizer pipes. The equalizer pipes were

spaced approximately 500 to 600 feet apart. The 48" pipe size is due to the fact that it can be used as a wildlife crossing.

- Grass swale treatment will occur throughout the project in the median.
- Kathy Matthews asked about looking into onsite mitigation. Marissa Rodman stated that no sites were found except for a historic property, but since it would only be preservation it would not be looked at any further.

Sheet 6

- Loop D will be a total take, but the entire loop will not be filled in. Equalizer pipes will be used to connect the wetlands throughout the interchange.
- Rachelle Beauregard will check to see if the channel east of -RP D1- is a jurisdictional stream.

Sheet 8

- The decision was made that all equalizer pipes will be laid on natural ground, unless NCWRC requests a site specific burial.
- Equalizer pipe connecting wetlands at Sta. 82+68+/-.
- No ditching will occur in the wetland that is located near Sta. 82+40+/- Lt.

Sheet 10

- Proposed wildlife crossing at Sta. 105+80+/- will also function as an equalizer pipe.

Sheet 12

- Per Rachelle Beauregard, the stream crossing at Sta. 137+00+/- is non-jurisdictional.

Sheet 14

- A cross pipe will not be placed at Sta. 153+40+/- . Based on field observation, the ditch heads up at the railroad and flows away from the railroad.

Sheet 15

- There will be no impacts from the pavement removal or the addition of the cul-de-sac on -SV RD7-. Existing fill slopes will be utilized at the wetland.

Sheet 17

- Proposed cross pipe at Sta. 220+00+/- . Mill Branch is a Jurisdictional Stream.

Sheet 18

- Per Rachelle Beauregard, the stream crossing at Sta. 231+50+/- is non-jurisdictional.

Sheet 21

- Bridge Crossing was set with a 30' horizontal offset from the wetland. The proposed bridge has a minimum 8.0' vertical clearance under it, in order to also serve as a wildlife crossing. There is no defined channel under the bridge. The proposed

crossing is skewed to the floodplain. As stated in the project commitments this bridge will be built with a work bridge. The bents from the bridge will be permanent fill in wetland impacts.

Sheet 24

- Beginning of Bridge over the Cape Fear River that spans from wetland to wetland.
 - Temporary Work Bridges will be needed up to river on both sides of bridge.
 - Closed deck drain system over the Cape Fear River.
 - For deck drainage not over the Cape Fear River, deck drains will be used. The deck drains will be spaced out every 12 feet. The deck drain spacing will be reduced to one every 6 feet when the vertical clearance under the bridge deck is 15 feet or less. There will be one row placed in the median and one row on the low side of the super.

Sheet 25

- There will be permanent surface water impacts in the Cape Fear River from the proposed bridge bents, and temporary surface water impacts from the proposed temporary work bridge bents.
 - Cape Fear River is a Jurisdictional crossing.
- There will be permanent fill in wetland impacts from the proposed bridge bents and temporary fill in wetland impacts from the temporary work bridge bents.

Sheet 26

- Both streams are Jurisdictional.
- There will be permanent fill in wetland impacts from the proposed bridge bents and temporary fill in wetland impacts from the temporary work bridge bents.

Sheet 27

- All streams are Jurisdictional.
- There will be permanent fill in wetland impacts from the proposed bridge bents and temporary fill in wetland impacts from the temporary work bridge bents.

Sheet 28

- All streams are Jurisdictional.
- There will be permanent fill in wetland impacts from the proposed bridge bents and temporary fill in wetland impacts from the temporary work bridge bents.
- City of Wilmington has an abandoned water intake pump on Toomers Creek. This site is only half a mile from the critical area, but since the pump has been abandoned no hazardous spill basin will be required.
 - *Per written comments from David Wainwright: As long as NCDOT can get a letter from the City of Wilmington stating that they have no intention of ever using the stream as a water supply again, then hazardous spill basins will not be needed. If NCDOT plans to pursue this, a copy of the letter will need to be included with the 401 application.*

Sheet 29

- There will be permanent fill in wetland impacts from the proposed bridge bents and temporary fill in wetland impacts from the temporary work bridge bents.

Sheet 30

- Wetland located at Sta. 400+00 will be a total take.

Sheet 31

- Rachelle Beauregard is checking on the wetlands right of Sta. 408+50+/- . These wetlands were shown in the wetland file, but they were not identified as wetlands on the plans from to Mulkey showing the jurisdictional streams and wetlands.

Sheet 34

- Retain and extend existing 42" RCP at -Y5- Sta. 16+27+/- Rt. & Lt.
 - There will be stream impacts at the inlet and outlet.
 - There will be wetland impacts at the outlet of the pipe.
 - Alligator Branch Tributary is a jurisdictional stream.
- Retain and extend 24" RCP at -Y5- Sta. 20+40+/- Lt.
 - Alligator Branch is a jurisdictional stream.

Sheet 37

- Existing 2 @ 84" CMP at Sta. 52+05+/-
 - Pipes to be replaced with culvert due to hydraulic design controls.
 - Roswell Branch is a jurisdictional Stream.

Sheet 38A

- H.W. Lochner, Roadway Design Engineers for this project, is waiting on updated surveys in order to complete design. Per Rachelle Beauregard, no jurisdictional streams were located on this sheet.

Sheet 40

- Bridge Crossing was set with a 10' horizontal offset from the wetland. The proposed bridge has a minimum 4.0' vertical clearance under it, in order to also serve as a small wildlife crossing.
 - Good site for wetland mitigation due to the removal of the existing roadway.
 - A grade change made at the intersection is going to cause this bridge to lengthen, but will have no effect on the wetland offset nor the wildlife crossing clearance.

Meeting Adjourned.

Subject: Meeting Minutes from 4C Permit Drawings Review
February 24, 2010 for R-2633B in Brunswick and New Hanover
Counties

Team Members:

Brad Shaver-USACE	(present)
Gary Jordan-USFWS	(present)
Travis Wilson-NCWRC	(absent)
Steve Sollod-NCDCM	(present)
Stephen Lane-NCDCM	(absent)
David Wainwright-NCDWQ	(present)
Chris Militcher-USEPA	(present)
Ron Lucas-FHWA	(absent)
David Harris-REU	(absent)
Bryan D. Taylor-Roadway	(absent)
Lonnie I. Brooks-Structure	(absent)
Derrick G. Weaver-PDEA	(absent)
Rachelle Beauregard-NEU	(present)
Jackson Provost-Division 3	(absent)

Participants:

Marshall Clawson, NCDOT Hydraulics
Dan Duffield, NCDOT Hydraulics
Mason Herndon, NCDOT Division 3
Chris Riverbark, NCDOT-NEU
Clayton Walston, NCDOT Roadway
Alan Ray, NCDOT Roadway
Marissa Rodman, NCDOT-PDEA-NEU
Mark Staley, NCDOT-REU
Jeff Garland, NCDOT-Design Build
Jonathan Scarce, Mulkey E & C
Matthew Harvey, Mulkey E & C

Introductions were initiated by Marshall Clawson. Introductions were made by all in attendance. Jonathan Scarce proceeded with the review.

General

- All waters within the project are either SC; Sw or C; Sw.
- Project falls within the Cape Fear River Basin in which riparian buffer rules are not applicable.
- The Design Build Project R-2633AA/AB that is tying into R-2633B at plan sheet 5 will now be tying in at plan sheet 6 just past the proposed US 74 Interchange. The tie in will occur line ahead of loops A1 and D1 around Station 48+00 –L-. This change will transfer permit site 1 and 2 and a large portion of site 3 to the design build project.
- There were concerns about wetland fill entering into the Hand Clearing and not being accounted for. All fill in wetlands will end at the slope stake.
- The Jurisdictional status of all streams and wetlands will be reevaluated by NEU, due to the lapse of time since original calls.

Sheet 5

- Sheet was removed from project. All impacts will be added to the Design Build Project R-2633AA/AB.

Sheet 6A

- Permanent fill in wetlands from roadway fill at -RP_D1- 22+50. (Permit Site 4)
- A majority of the site 3 impacts on this sheet will be eliminated due to the Design Build Project.

Sheet 6B

- The Design Build Project tie in will follow the -LP_A1- fill slope and cross over RP_A1- around station 23+75 thus eliminating a majority of the impacts on this sheet.
- Fill in wetlands from roadway fill along -RP_A1- will be a total take. (Site 3)

Sheet 6C

- Permanent fill in wetlands from roadway fill with equalizer pipes connecting the wetlands. (Site 3 Cont.)

Sheet 7

- Permanent fill in wetlands from roadway fill with equalizer pipes connecting the wetlands. (Site 3 Cont.)

Sheet 8

- Permanent fill in wetlands from roadway fill with an equalizer pipe connecting the wetlands. Site 5 will be a total take.
- There were concerns about the drainage design at this location. The roadway drainage is outletting to the west side in order to prevent a direct discharge into the wetland. The equalizer pipe is being placed in order to keep the existing drainage pattern.

Sheet 9

- Permanent fill in wetlands from roadway fill. (Site 6)

Sheet 10

- Permanent fill in wetlands from roadway fill with equalizer pipes connecting the wetlands. (Site 6 Cont.)
- There is a proposed 12' x 6' RCBC Wildlife Crossing at -L- 105+80 – The culvert was missing a size label in the plan view.
- There were concerns with the 12' x 6' RCBC not being buried. It was stated that the culvert will be buried 1 foot and that a 1 foot sill will be added to the structure. This culvert will be backfilled to the top of sill, and now become a 12' x 7'.
- There is currently a cover issue at the median ditch and RCBC. The ditches will need to be flattened out in order to obtain adequate cover. This change will result in the median outlet pipe being shifted back to -L- 105+00.

Sheet 11

- Permanent fill in wetlands from roadway fill with equalizer pipes connecting the wetlands. (Site 6 Cont.)

Sheet 12

- Permanent fill in wetlands from roadway fill with equalizer pipes connecting the wetlands. (Site 6 Cont.)

Sheet 13

- Permanent fill in wetlands from roadway fill with equalizer pipes connecting the wetlands. (Site 6 Cont.)
- Permanent fill in wetlands from roadway fill. (Site 7)

Sheet 14

- Permanent fill in wetlands from roadway fill with equalizer pipes connecting the wetlands. (Site 7 Cont.)

Sheet 15A

- Permanent fill in wetlands from roadway fill. (Site 8)

Sheet 15B

- Permanent fill in wetlands from roadway fill at –SVRD7- from the cul-de-sac and the proposed 30” RCP. (Site 9)
- Permanent fill in wetlands from roadway fill at –L- 189+90. (Site 9)
- Permanent fill in wetlands from roadway fill at –RP_D2- 19+20. (Site 10)
- Turn off the PSRM hatching 190+00 RT so as not to be confused with impact hatching.

Sheet 16

- Permanent fill in wetlands from roadway fill with equalizer pipes connecting the wetlands. (Site 11)

Sheet 17

- Permanent fill in wetlands from roadway fill with equalizer pipes connecting the wetlands. (Site 11 Cont.)
- Mill Branch is a Jurisdictional Stream. The proposed cross pipe will be 3 @ 42” RCP. The inlets will be buried 20% and the outlets will be buried 1.5 feet for positive slope on pipes.

Sheet 18

- Permanent fill in wetlands from roadway fill with an equalizer pipe connecting the wetlands. (Site 11 Cont.)
- Permanent fill in wetlands from roadway fill. (Site 12)
- Wetland lines separating Site 11 and Site 12 will be verified by NEU.

Sheet 19

- Permanent fill in wetlands from roadway fill with an equalizer pipe connecting the wetlands. (Site 12 Cont.)

- Permanent fill in wetlands from roadway fill. (Site 13)

Sheet 20

- Permanent fill in wetlands from roadway fill with an equalizer pipe connecting the wetlands. (Site 13 Cont.)

Sheet 21

- Bridge over Cartwheel Branch will serve as a wildlife crossing and to span wetlands. The bridge has a 30' offset to the wetland with an 8 foot minimum vertical clearance.
- There will permanent fill in wetlands from the proposed bridge bents, and temporary fill in wetlands from the temporary work bridge bents.
- There will be two work bridges; one placed on the outside of each of the dual bridge, along with a finger at each bent location.

Sheet 24

- Beginning of Bridge over Cape Fear River. There will be permanent fill in wetlands from the 15' x 25' bridge footings, and temporary fill in wetlands from the temporary work bridge bents. The closed deck drainage system begins at bent 5.
- The work bridges will need to extend into the Cape Fear to serve as landing platform for the barges. This will need to be done for each work bridge on both the south and north side of the river. The platform will be "L" shaped and needs to terminate in a minimum water depth of 6 feet.
- There were concerns with the bridge caps not having a minimum clearance of 4 foot above the wetlands. It was stated that URS will either have to raise the caps or mechanized clearing in wetlands impacts will need to be offset 3 feet around the bridge footing impacts.
- Parcel 59 is currently being developed by TDM Partners. They are currently planning a mitigation site with wetland preservation. The project footprint will not be included in the mitigation site.
- The hand clearing needs revised on the south side of the bridge so that it does not include the dirt access road.

Sheet 25

- Cape Fear River is a Jurisdictional crossing.
- There will be permanent surface water impacts in the Cape Fear River from the proposed bridge bents, and temporary surface water impacts from the proposed work bridge extensions, serving as landing platforms for the barges.
- There will be permanent fill in wetlands from the proposed bridge bents and temporary fill in wetlands from the temporary work bridge bents.
- The deck drainage system will end at bent 9. Rip rap pads will need to be added to dissipate the flow of the deck drainage system into the wetlands. Permanent fill in wetlands will need to be added around each of the bridge footings to account for the rip rap pads.

Sheet 26

- Both streams are Jurisdictional.
- There will be permanent fill in wetlands from the proposed bridge bents and temporary fill in wetlands from the temporary work bridge bents.

Sheet 27

- All streams are Jurisdictional.
- There will be permanent fill in wetlands from the proposed bridge bents and temporary fill in wetlands from the temporary work bridge bents.

Sheet 28

- All streams are Jurisdictional except for the one that runs from -L- 373+88 to 376+08. This should be shown as permanent fill in wetlands and the relocation will be excavation in wetlands.
- The closed deck drainage systems will end at the bent near station 332+00. Rip Rap pads will be added to dissipate the discharge at the pipe outlets. There will be fill in wetlands associated with these pads.
- A note should be added to the plans to keep temporary work bridge bents out of Toomers Creek.
- There were concerns of the height of the temporary work bridges over Toomers Creek due to the possibility of it having a Public Trust Waters designation. It was stated that if the height of the work bridges was increased they would not be able to construct the bridge caps.
- There will be permanent fill in wetlands from the proposed bridge bents and temporary fill in wetlands from the temporary work bridge bents.
- City of Wilmington has an abandoned water intake pump on Toomers Creek. This site is only half a mile from the critical area, but since the pump has been abandoned no hazardous spill basin will be required.
 - A letter from the City of Wilmington stating that they have no intention of ever using the pump station will be included in the permit.

Sheet 29

- There will be permanent fill in wetlands from the proposed bridge bents and temporary fill in wetlands from the temporary work bridge bents.

Sheet 30

- Permanent fill in wetlands from roadway fill. Site 16 will be a total take.
- The easement on the North side of the sheet is for the proposed haul roads. The haul roads are needed to construct the bridge bents without crossing the railroad tracks. CP&L were planning to expand to a total of 4 tracks in this area, but due to their conversion from coal to natural gas in 2012 it is unlikely the tracks will be added.

Sheet 34

- Removed from project. All impacts will be added to Design Build Project R-2633AA/AB.

Sheet 37

- Existing 2 @ 84" CMP at Sta. 52+05+/-
 - Pipes to be replaced with culvert due to hydraulic design controls. Culvert will be buried 1 foot.
 - Rowel Branch is a jurisdictional stream.
- There will be temporary surface water impacts at the inlet of the proposed culvert
- There will be permanent surface water impacts at the inlet of the proposed culvert. The outlet will not have permanent impacts due to the proposed structure being shorter in length than the existing.
- The southeast quadrant has new wetlands due to a wetland delineation on R-4063 which is an adjacent project.
- Detour impacts are shown on sheet 2-K.

Sheet 2-K

- Temporary surface water impacts at 2 @ 84" CMP detour pipes.
- There was concern about the impact that the temporary detour pipes would have on the existing channel. It was stated that a temporary bridge would be looked at for the detour, along with filling the entire channel with temporary pipes that would be laid on filter fabric and back filled with rip rap. Due to the significant cost difference between the temporary pipes versus the temporary bridge DOT is proceeding forward with the pipes.

Sheet 40

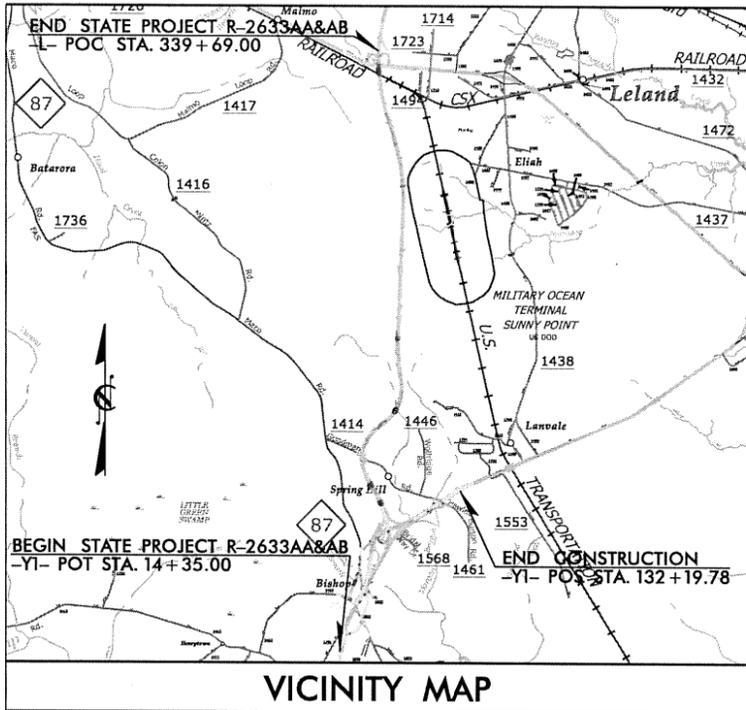
- The bridge over Cartwheel Branch will serve as a small wildlife crossing, as well as to span wetlands. The crossing was set with a 10' horizontal offsets from the wetlands, and has a minimum 4.0' vertical clearance.
- The wetland mitigation site under the bridge will be removed from the project due to the cost of relocating the waterline.
- Hand Clearing needs to be added to the PDE at the ditch entering the wetlands
- The hand clearing needs to be removed from inside the stream boundary.
- The Location Survey stream flow arrow needs to be adjusted and NEU plans to verify the wetland boundaries.

Meeting Adjourned.

CONTRACT: C 202384 TIP PROJECT: R-2633AA&AB

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See Sheet 1-A For Index of Sheets



VICINITY MAP

STATE OF NORTH CAROLINA
 DIVISION OF HIGHWAYS

BRUNSWICK COUNTY

LOCATION: WILMINGTON BYPASS (FUTURE I-140) FROM NC 87 TO US 74/76

TYPE OF WORK: DESIGN-BUILD AS SPECIFIED IN THE SCOPE OF WORK CONTAINED IN THE REQUEST FOR PROPOSALS

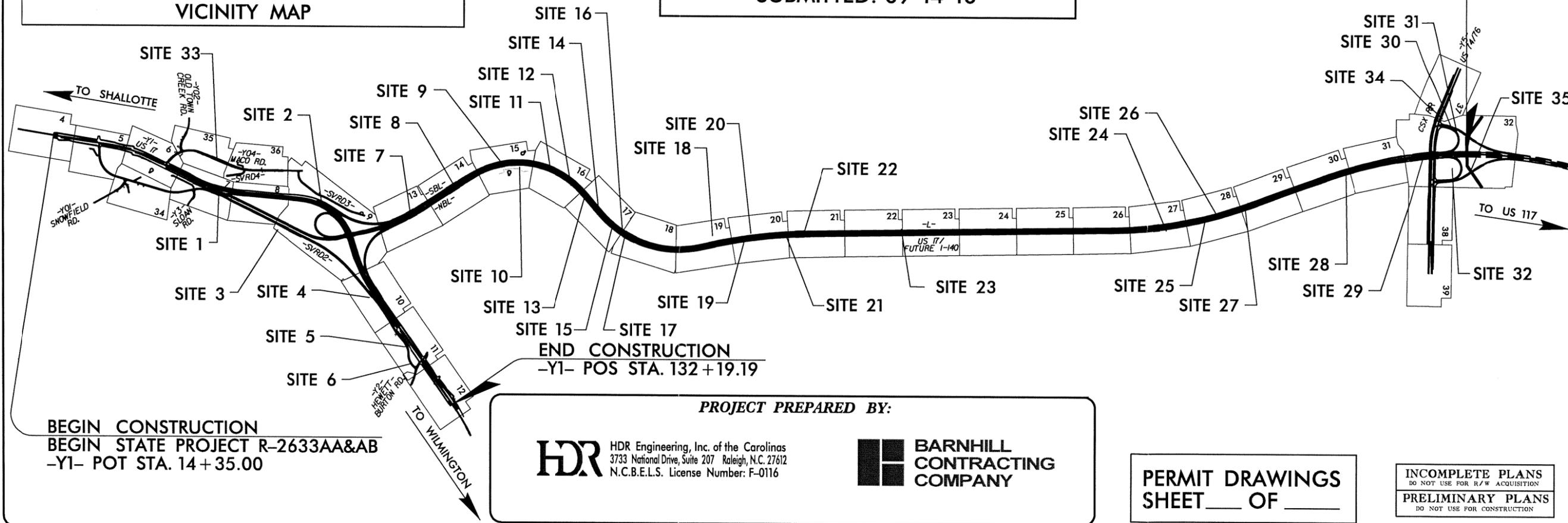
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-2633AA&AB	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
34491.3.GV2	NHF-0017 (96)	CONSTRUCTION	
34491.3.STI	STM-0017 (97)	CONSTRUCTION	



**R-2633AA&AB
 WETLAND SITE MAP**
 SUBMITTED: 09-14-10

END CONSTRUCTION
 END STATE PROJECT R-2633AA&AB
 -L- POC STA. 339+69.00

BEGIN CONST.
 R-2633B



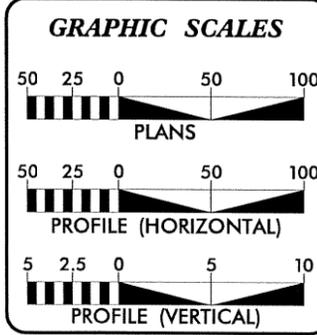
PROJECT PREPARED BY:

HDR Engineering, Inc. of the Carolinas
 3733 National Drive, Suite 207 Raleigh, N.C. 27612
 N.C.B.E.L.S. License Number: F-0116

**BARNHILL
 CONTRACTING
 COMPANY**

PERMIT DRAWINGS
 SHEET ___ OF ___

INCOMPLETE PLANS
 DO NOT USE FOR R/W ACQUISITION
 PRELIMINARY PLANS
 DO NOT USE FOR CONSTRUCTION



DESIGN DATA
 -L-

ADT 2010 = 21,615	DHV = 12 %	D = 60 %	T = 15 % *	V = 70 MPH
ADT 2035 = 46,800				
* TTST 10 % DUAL 5 %				

DESIGN DATA
 -YI-

ADT 2010 = 34,081	DHV = 9 %	D = 55 %	T = 15 % *	V = 60 MPH
ADT 2035 = 80,100				
* TTST 10 % DUAL 5 %				

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT R-2633AA&BB (-YI-, -NBL-, -L-)	= 7.657 MILES
LENGTH STRUCTURE TIP PROJECT R-2633AA&BB (-YI-, -NBL-, -L-)	= 0.320 MILES
TOTAL LENGTH STATE PROJECT R-2633AA&BB (-YI-, -NBL-, -L-)	= 7.977 MILES

DIVISION OF HIGHWAYS
 1000 Birch Ridge Dr., Raleigh NC, 27610

2006 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
 JUNE 20, 2008

LETTING DATE:
 FEBRUARY 16, 2010

GREGORY KEMPFF, P.E.
 PROJECT ENGINEER

PAUL A. MEEHAN, P.E.
 PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

SIGNATURE: _____ P.E.

ROADWAY DESIGN ENGINEER

SIGNATURE: _____ P.E.

DIVISION OF HIGHWAYS
 STATE OF NORTH CAROLINA

STATE HIGHWAY DESIGN ENGINEER

P.E.

See Sheet 1-A For Index of Sheets
See Sheet 1-B For Conventional Symbols

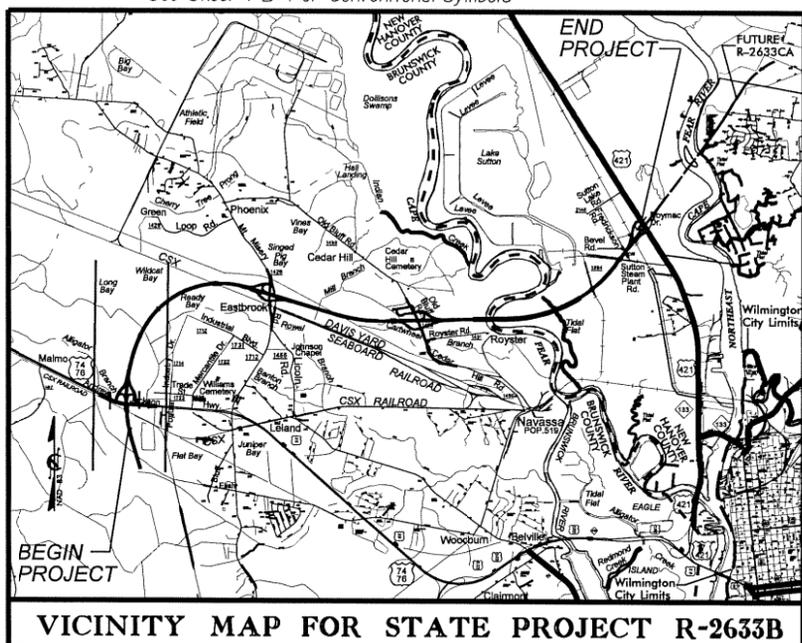
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-2633B	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
34491.1.2	STPNHF-17(1)	P.E.	
34491.2.3		R / W	

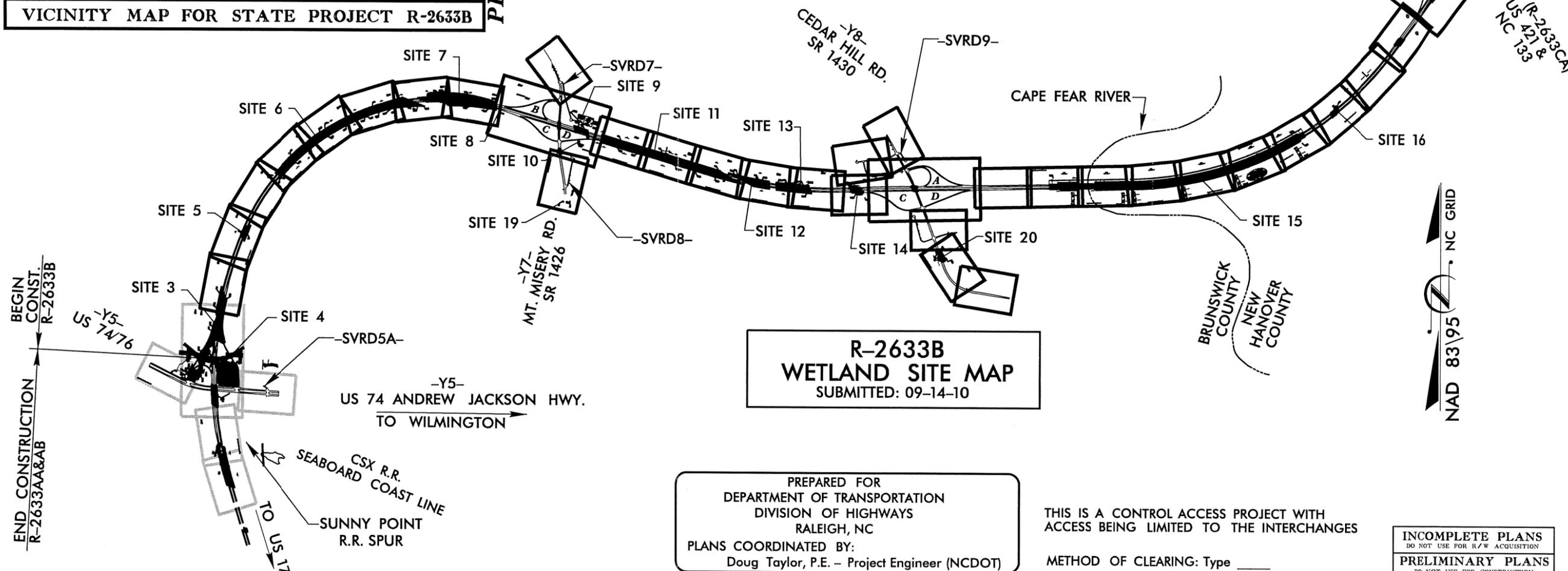
BRUNSWICK & NEW HANOVER COUNTIES

LOCATION: US 17 (WILMINGTON BYPASS) FROM US 74/6 EAST OF MALMO IN BRUNSWICK COUNTY TO US 421 NORTH OF WILMINGTON IN NEW HANOVER COUNTY
TYPE OF WORK: GRADING, DRAINAGE, PAVING, CULVERTS SIGNALS, SIGNING, AND STRUCTURES

-L- STA. 447+24.07
END STATE PROJECT (R-2633B)



VICINITY MAP FOR STATE PROJECT R-2633B



**R-2633B
WETLAND SITE MAP**
SUBMITTED: 09-14-10

PREPARED FOR
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, NC
PLANS COORDINATED BY:
Doug Taylor, P.E. - Project Engineer (NCDOT)

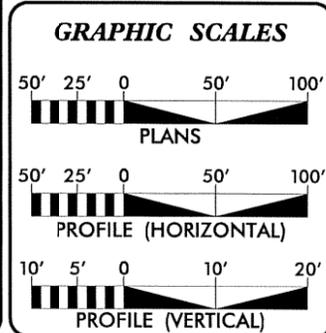
THIS IS A CONTROL ACCESS PROJECT WITH ACCESS BEING LIMITED TO THE INTERCHANGES

METHOD OF CLEARING: Type _____

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

CONTRACT: TIP PROJECT: R-2633B

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USER: jmassroc DATE: 9/13/2010
PENTABLE: NCDOT_permits_NOCON.tbl
TIME: 9:32:33 PM SCALE: 1:3000
FILE: Mktg_Charlotte\Charlotte_Trans_Design_Build\Barnhill_Wilmington_Bypass\R-2633AA & AB\Hydraulics\PERMITS_Environmental\Drawings\2633B_PERMITS\VR2633B_HVD_PRM_Tsh.dgn



DESIGN DATA

ADT 2009 =	16,400
ADT 2025 =	24,900
DHV =	12 %
D =	60 %
T =	15 % *
V =	70 MPH
* TTST 10%	DUAL 5%
FUNC. CLASS. =	INTERSTATE

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT R-2633B =	6.26 Miles
LENGTH STRUCTURES TIP PROJECT R-2633B =	1.76 Miles
TOTAL LENGTH STATE TIP PROJECT R-2633B =	8.02 Miles

THIS IS A FULL CONTROLLED-ACCESS PROJECT WITH ACCESS BEING LIMITED TO POINTS SHOWN ON THE PLANS.

Prepared In the Office of:

2006 STANDARD SPECIFICATIONS	
RIGHT OF WAY DATE:	PROJECT ENGINEER
June 20, 2008	
LETTING DATE:	PROJECT DESIGN ENGINEER
July 19, 2011	

HYDRAULICS ENGINEER

SIGNATURE: _____ P.E.

ROADWAY DESIGN ENGINEER

SIGNATURE: _____ P.E.

**DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA**

STATE HIGHWAY DESIGN ENGINEER P.E.