STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

MICHAEL F. EASLEY
GOVERNOR

LYNDO TIPPETT
SECRETARY

March 15, 2007

N. C. Dept. of Environment and Natural Resources
Division of Coastal Management
1367 U. S. Highway 17
Elizabeth City, NC 27909

Attention: Ms. Lynn Mathis
Field Officer

Dear Madam:

Subject: **CAMA Major Development Permit Application** for the proposed replacement of Bridge No. 4 over Tulls Creek on SR 1222 (Tulls Creek Rd.), in Currituck County. Federal Aid Project No. BRZ-1222(2), State Project No. 8.2040301, TIP No. B-2950. Debit $475.00 from WBS Element 32773.1.1

Please find enclosed the CAMA Major Development Permit application, land owner return receipts, MP forms, permit drawings, Categorical Exclusion (CE) and Addendum, and half-size plan sheets for the above referenced project. The North Carolina Department of Transportation (NCDOT) proposes to replace existing Bridge No. 4 on SR 1222 over Tulls Creek in Currituck County. The project involves replacement of the existing bridge structure with a 300-foot concrete box beam bridge at approximately the same location using top-down construction. Bridge substructure will consist of steel or concrete piles, which will be driven into position. The roadway elevation will be increased 0.5 ft above the existing structure. The approach roadway will consist of two travel lanes at least 11-feet wide with shoulder widths from 4.5-8 feet. There will be 0.02-acre of permanent impacts to Tulls Creek and adjacent surface water and 0.24-acre of permanent impacts to adjacent wetlands. Traffic will be detoured off-site, on surrounding roads, during construction. The review date for this project is May 1, 2007 and the Let Date is June 19, 2007.

Impacts to Waters of the United States

General Description: The project is located in the Pasquotank River Basin (Hydrologic Unit 03010205). A best usage classification of "B Sw" has been assigned to Tulls Creek

MAILING ADDRESS:
NC DEPARTMENT OF TRANSPORTATION
PROJECT DEVELOPMENT AND ENVIRONMENTAL ANALYSIS
1548 MAIL SERVICE CENTER
RALEIGH NC 27699-1548

TELEPHONE: 919-733-3141
FAX: 919-733-9794

WEBSITE: WWW.NCDOT.ORG

LOCATION:
TRANSPORTATION BUILDING
1 SOUTH WILMINGTON STREET
RALEIGH NC

[DWQ Index #30-1-2-2-5-1]. Neither Water Supplies (WS-I: undeveloped watersheds or WS-II: predominately undeveloped watersheds) nor Outstanding Resource Waters (ORW) occur within 1.0 mile (1.6 km) of project study area. Tulls Creek is not designated as a North Carolina Natural or Scenic River, or as a National Wild and Scenic River. Tulls Creek is not classified as a 303d stream.

Permanent Impacts: Tulls Creek and adjacent wetlands will be impacted by the proposed project. Construction of the proposed project will result in permanent impacts to wetlands, including 0.18-acre of fill in DCM wetlands and 0.04-acre of fill in 404 wetlands due to roadway fill, 0.01-acre excavation in 404 wetlands due to roadway fill activities, and 0.01-acre mechanized clearing in 404 wetlands due to roadway fill activities. In addition, 0.02- acre of fill in surface water will result from roadway fill and the placement of a 36-inch Reinforced Concrete Pipe, and <0.01-acre of fill in surface water will result from bridge bent placement (see permit drawings).

Temporary Impacts: No temporary impacts to jurisdictional resources will be necessary for the construction of this project.

Utility Impacts: Less than 0.01-acre of fill in Waters of the U.S. will occur due to relocation of two power poles and one down guy-line within coastal marsh in the north west quadrant of project area. These poles will be relocated north of their existing locations to provide construction access for bridge approach work. NCDOT will also install a 12-inch PVC and 16-inch HDPE water pipe via directional bore to avoid impacts to Tulls Creek or surrounding wetlands.

Bridge Demolition

The existing bridge consists of a steel plank deck and timber and steel abutments and interior bent caps. The bridge will be removed and piles will be pulled piece-by-piece utilizing a small barge without dropping components into Waters of the United States during construction. Best Management Practices for Bridge Demolition and Removal will be followed to avoid any temporary fill from entering Waters of the United States.

Federally Protected Species

As of January 29, 2007 the US Fish and Wildlife Service (USFWS) lists eight federally protected species for Currituck County (Table 1). A Biological Conclusion is not required for the American alligator due to its designation of Threatened (due to similarity of appearance). The shortnose sturgeon was added to the list since the completion of the NRTR (March 24, 1999). North Carolina Division of Marine Fisheries scientist Fritz Rohde was contacted on February 23, 2007 concerning the suitability of habitat for shortnose sturgeon within the project vicinity. Mr. Rohde responded that "It is highly doubtful that a sturgeon would ever be found there, thus no impact from this project." As such, the Biological Conclusion is "No Effect" for this species. The Biological Conclusion for West Indian manatee has been changed from "No Effect" in the NRTR to "May Affect, Not Likely to Adversely Affect" due to the >5-foot channel depth of Tulls Creek. A Concurrence Request for the manatee has been sent under separate cover to USFWS. Biological Conclusions for the other species remain valid. A Biological

Conclusion of "May Affect, Not Likely to Adversely Affect" was reached for the bald eagle (*Haliaeetus leucocephalus).* A copy of the USFWS concurrence letter is attached.

Table 1. Federally protected species of Currituck County.

Scientific Name	Common Name	Federal Status	Biological Conclusion
Haliaeetus leucocephalus	Bald eagle	T(PFD)	May Affect, Not Likely to Adversely Affect
Dermochelys coriacea	Leatherback sea turtle	E	No Effect
Caretta caretta	Loggerhead sea turtle	T	No Effect
Charadrius melodus	Piping plover	T	No Effect
Picoides borealis	Red-cockaded woodpecker	E	No Effect
Acipenser brevirostrum	Shortnose sturgeon	E	No Effect
Trichechus manatus	West Indian manatee	E	May Affect, Not Likely to Adversely Affect
Amaranthus pumilus	Seabeach amaranth	T	No Effect

Avoidance and Minimization

Avoidance examines all appropriate and practicable possibilities of averting impacts to "Waters of the United States". Due to the presence of surface waters and wetlands within the project study area, avoidance of all impacts is not possible. The NCDOT is committed to incorporating all reasonable and practicable design features to avoid and minimize jurisdictional impacts. Minimization measures incorporated as part of the project design included:

- Use of an off-site detour during construction
- Construction of a 64-foot longer bridge
- Stream Crossing Guidelines for Anadromous Fish Passage will be implemented
- No in-water work will occur from February 15 to September 30, as requested by the North Carolina Department of Environment and Natural Resources Division of Marine Fisheries, as Tulls Creek is designated as a Primary Nursery Area
- Design Standards in Sensitive Watersheds will be utilized during demolition of the existing bridge and construction of the new bridge due to the designation of Tulls Creek as a Primary Nursery Area
- The bridge will be built using top-down construction and can therefore be built without the need of a causeway or work pad
- The number of interior bents in the water is being reduced from eight for the existing bridge to four for the new bridge
- There will be no deck drains on the proposed bridge
- Fill slopes in wetlands will be at a 3:1 ratio

Mitigation

The North Carolina Department of Environment and Natural Resources Ecosystem Enhancement Program (EEP) has assumed responsibility for satisfying the federal Clean Water Act compensatory mitigation requirements for the unavoidable impacts to 0.24 acre of wetlands. See attached EEP Acceptance Letter dated March 14, 2007.

Regulatory Approvals

CAMA: NCDOT requests that the proposed work be authorized under a Coastal Area Management Act Major Development Permit. The landowner receipts are provided with this permit application.

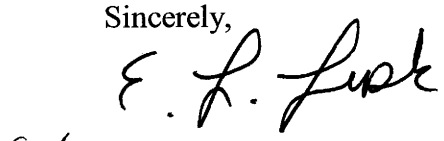
Section 404 Permit: In a separate application, NCDOT has applied for a Clean Water Act Section 404 General Permit. All aspects of this project are being processed by the Federal Highway Administration as a "Categorical Exclusion". The NCDOT has requested that these activities be authorized by a General Permit No. 198200031.

Section 401 Permit: In a separate application, NCDOT has applied for a 401 Water Quality Certification from DWQ. We anticipate 401 General Certification number 3404 will apply to this project. All general conditions of the Water Quality Certifications will be met. Therefore, in accordance with 15A NCAC 2H, Section .0500(a), we have provided five copies of this application to the NCDWQ for their review and written concurrence. NCDOT received a stormwater permit (SW7060902), dated November 22, 2006, from NCDWQ (attached).

A copy of this application will be posted on the NCDOT website at:
http://www.doh.dot.state.nc.us/preconstruct/pe/neu/permit.html

Thank you for your time and assistance with this project. Please contact Mr. David E. Bailey at debailey@dot.state.nc.us or (919) 715-7257 if you have any questions or need additional information.

Sincerely,



for Gregory J. Thorpe, Ph.D.
Environmental Management Director, PDEA

W/attachments
Ms. Cathy Brittingham, NCDCM

W/o attachments
Mr. John Hennessy, NCDWQ
Mr. Travis Wilson, NCWRC
Mr. Gary Jordan, USFWS
Mr. Ron Sechler, NMFS
Mr. Michael Street, NCDMF
Dr. David Chang, P.E., Hydraulics
Mr. Greg Perfetti, P.E., Structure Design
Mr. Mark Staley, Roadside Environmental
Mr. Victor Barbour, P.E., Project Services Unit
Mr. Anthony Roper, P.E., Div. 1, Division Engineer
Mr. Clay Willis, Div. 1, Division Environmental Officer
Mr. Scott McLendon, USACE, Wilmington
Mr. Jay Bennett, P.E., Roadway Design
Mr. Majed Alghandour, P. E., Programming and TIP
Mr. Art McMillan, P.E., Highway Design
Ms. Beth Harmon, EEP
Mr. Todd Jones, NCDOT External Audit Branch
Mr. Stacy Oberhausen, P.E., PDEA Project Planning Engineer

DCM MP-1

APPLICATION for Major Development Permit

(last revised 12/27/06)

North Carolina DIVISION OF COASTAL MANAGEMENT

1. Primary Applicant/ Landowner Information

Business Name N. C. Department Of Transportation		Project Name (if applicable) B-2950 (32773.1.1) Replace Bridge No. 4 over Tulls Creek on SR 1222		
Applicant 1: First Name	MI	Last Name		
Applicant 2: First Name	MI	Last Name		
If additional applicants, please attach an additional page(s) with names listed.				
Mailing Address 1548 Mail Service Center		PO Box	City Raleigh	State NC
ZIP 27699 1548	Country USA	Phone No. 919 - 733 - 3141 ext.		FAX No. 919 - 733 - 9794
Street Address *(if different from above)*		City	State	ZIP -
Email				

2. Agent/Contractor Information

Business Name				
Agent/ Contractor 1: First Name	MI	Last Name		
Agent/ Contractor 2: First Name	MI	Last Name		
Mailing Address		PO Box	City	State
ZIP		Phone No. 1 - - ext.		Phone No. 2 - - ext.
FAX No.		Contractor #		
Street Address *(if different from above)*		City	State	ZIP -
Email				

<Form continues on back>

3. Project Location

County (can be multiple)	Street Address		State Rd. #
Currituck	SR 1222 Tulls Creek Rd. (Bridge No. 4)		1222
Subdivision Name	**City**	**State**	**Zip**
	Sligo/Moyock	NC	27958 -

Phone No.	Lot No.(s) *(if many, attach additional page with list)*
- - ext.	N/A, , , ,
a. In which NC river basin is the project located? Pasquotank	b. Name of body of water nearest to proposed project Tulls Creek, Tull Bay
c. Is the water body identified in (b) above, natural or manmade? ☒Natural ☐Manmade ☐Unknown	d. Name the closest major water body to the proposed project site. Currituck Sound
e. Is proposed work within city limits or planning jurisdiction? ☐Yes ☒No	f. If applicable, list the planning jurisdiction or city limit the proposed work falls within.

4. Site Description

a. Total length of shoreline on the tract (ft.)	b. Size of entire tract (sq.ft.)
2012	244300
c. Size of individual lot(s) N/A, , , *(If many lot sizes, please attach additional page with a list)*	d. Approximate elevation of tract above NHW *(normal high water)* or NWL *(normal water level)* 3' NGVD ☐NHW or ☐NWL

e. Vegetation on tract
Spartina cynosuroides, Juncus roemerianus, Typha angustifolia, roadside grasses and forbs

f. Man-made features and uses now on tract
roadway fill, roadway, bridge, bulkhead, fishing, hunting cabins, water line, power line, underground telephone line

g. Identify and describe the existing land uses adjacent to the proposed project site.
Undeveloped coastal marsh on both sides of approaching roadway on NW side of bridge, private residences and an agricultural field on both sides of SE approach

h. How does local government zone the tract?	i. Is the proposed project consistent with the applicable zoning? (Attach zoning compliance certificate, if applicable)
Existing R/W for transportation	☒Yes ☐No ☐NA

j. Is the proposed activity part of an urban waterfront redevelopment proposal?	☐Yes ☒No
k. Has a professional archaeological assessment been done for the tract? If yes, attach a copy.	☒Yes ☐No ☐NA
If yes, by whom?	Historic Preservation Office
l. Is the proposed project located in a National Registered Historic District or does it involve a National Register listed or eligible property?	☐Yes ☒No ☐NA

<Form continues on next page>

m. (i) Are there wetlands on the site?	☒Yes ☐No
(ii) Are there coastal wetlands on the site?	☒Yes ☐No
(iii) If yes to either (i) or (ii) above, has a delineation been conducted? *(Attach documentation, if available)*	☒Yes ☐No

n. Describe existing wastewater treatment facilities.
N/A

o. Describe existing drinking water supply source.
N/A

p. Describe existing storm water management or treatment systems.
N/A

5. Activities and Impacts

a. Will the project be for commercial, public, or private use? ☐Commercial ☒Public/Government ☐Private/Community

b. Give a brief description of purpose, use, and daily operations of the project when complete.
The project is needed to replace an aging bridge. The vertical profile will be adjusted to improve safety.

c. Describe the proposed construction methodology, types of construction equipment to be used during construction, the number of each type of equipment and where it is to be stored.
Heavy equipment will be used to remove the existing bridge and construct the new bridge and roadway fill.

d. List all development activities you propose.
Removal of existing bridge. Construction of proposed replacement bridge. Retaining wall required around NW approach fill. Roadway approach fill.

e. Are the proposed activities maintenance of an existing project, new work, or both? Both

f. What is the approximate total disturbed land area resulting from the proposed project? 4.0 ☐Sq.Ft or ☒Acres

g. Will the proposed project encroach on any public easement, public accessway or other area that the public has established use of? ☐Yes ☒No ☐NA

h. Describe location and type of existing and proposed discharges to waters of the state.
Surface runoff from roadway approaches, deck drains on existing bridge.

i. Will wastewater or stormwater be discharged into a wetland? ☒Yes ☐No ☐NA

If yes, will this discharged water be of the same salinity as the receiving water? ☒Yes ☐No ☐NA

j. Is there any mitigation proposed? ☒Yes ☐No ☐NA
If yes, attach a mitigation proposal.

<Form continues on back>

6. Additional Information

In addition to this completed application form, (MP-1) the following items below, if applicable, must be submitted in order for the application package to be complete. Items (a) – (f) are always applicable to any major development application. Please consult the application instruction booklet on how to properly prepare the required items below.

a. A project narrative.

b. An accurate, dated work plat (including plan view and cross-sectional drawings) drawn to scale. Please give the present status of the proposed project. Is any portion already complete? If previously authorized work, clearly indicate on maps, plats, drawings to distinguish between work completed and proposed.

c. A site or location map that is sufficiently detailed to guide agency personnel unfamiliar with the area to the site.

d. A copy of the deed (with state application only) or other instrument under which the applicant claims title to the affected properties.

e. The appropriate application fee. Check or money order made payable to DENR.

f. A list of the names and complete addresses of the adjacent waterfront (riparian) landowners and signed return receipts as proof that such owners have received a copy of the application and plats by certified mail. Such landowners must be advised that they have 30 days in which to submit comments on the proposed project to the Division of Coastal Management.

Name
Phone No. see attached sheet . . .

Address

Name
Phone No.

Address

Name
Phone No.

Address

g. A list of previous state or federal permits issued for work on the project tract. Include permit numbers, permittee, and issuing dates.
State Stormwater Permit No. SW7060902, NCDENR-DWQ, November 22, 2006 until rescinded

h. Signed consultant or agent authorization form, if applicable.

i. Wetland delineation, if necessary.

j. A signed AEC hazard notice for projects in oceanfront and inlet areas. *(Must be signed by property owner)*

k. A statement of compliance with the N.C. Environmental Policy Act (N.C.G.S. 113A 1-10), if necessary. If the project involves expenditure of public funds or use of public lands, attach a statement documenting compliance with the North Carolina Environmental Policy Act.

7. Certification and Permission to Enter on Land

I understand that any permit issued in response to this application will allow only the development described in the application. The project will be subject to the conditions and restrictions contained in the permit.

I certify that I am authorized to grant, and do in fact grant permission to representatives of state and federal review agencies to enter on the aforementioned lands in connection with evaluating information related to this permit application and follow-up monitoring of the project.

I further certify that the information provided in this application is truthful to the best of my knowledge.

Date 3.15.07 Print Name Elizabeth L. Lusk

Signature E. L. Lusk

Please indicate application attachments pertaining to your proposed project.

☐DCM MP-2 Excavation and Fill Information
☐DCM MP-3 Upland Development
☐DCM MP-4 Structures Information
☒DCM MP-5 Bridges and Culverts

Form DCM MP-5

BRIDGES and CULVERTS

Attach this form to Joint Application for CAMA Major Permit, Form DCM MP-1. Be sure to complete all other sections of the Joint Application that relate to this proposed project. Please include all supplemental information.

1. BRIDGES

☐ *This section not applicable*

a. Is the proposed bridge:
☐Commercial ☒Public/Government ☐Private/Community

b. Water body to be crossed by bridge:
Tull creek

c. Type of bridge (construction material):
Concrete box beams

d. Water depth at the proposed crossing at NLW or NWL:
15.5 ft.

e. (i) Will proposed bridge replace an existing bridge? ☒Yes ☐No
If yes,
(ii) Length of existing bridge: 236 ft.
(iii) Width of existing bridge: 28 ft.
(iv) Navigation clearance underneath existing bridge: 9.5 ft.
(v) Will all, or a part of, the existing bridge be removed?
(Explain) All of the existing bridge will be removed. The existing bulkheads will be retained

f. (i) Will proposed bridge replace an existing culvert? ☐Yes ☒No
If yes,
(ii) Length of existing culvert:
(iii) Width of existing culvert:
(iv) Height of the top of the existing culvert above the NHW or NWL:
(v) Will all, or a part of, the existing culvert be removed?
(Explain)

g. Length of proposed bridge: 300 ft.

h. Width of proposed bridge: 33 ft.

i. Will the proposed bridge affect existing water flow? ☐Yes ☒No
If yes, explain:

j. Will the proposed bridge affect navigation by reducing or increasing the existing navigable opening? ☒Yes ☐No
If yes, explain: height will be increased by 0.5 ft., the width between piers will be increased from 35 to 60 ft.

k. Navigation clearance underneath proposed bridge: 10 ft.

l. Have you contacted the U.S. Coast Guard concerning their approval? ☒Yes ☐No
If yes, explain: July 7, 1998 letter states no permit required for this project

m. Will the proposed bridge cross wetlands containing no navigable waters? ☐Yes ☒No
If yes, explain:

n. Height of proposed bridge above wetlands:

2. CULVERTS

☒ *This section not applicable*

a. Number of culverts proposed:

b. Water body in which the culvert is to be placed:

< Form continues on back>

c. Type of culvert (construction material):

d. (i) Will proposed culvert replace an existing bridge? ☐Yes ☐No

If yes,

(ii) Length of existing bridge:

(iii) Width of existing bridge:

(iv) Navigation clearance underneath existing bridge:

(v) Will all, or a part of, the existing bridge be removed? (Explain)

e. (i) Will proposed culvert replace an existing culvert? ☐Yes ☐No

If yes,

(ii) Length of existing culvert(s):

(iii) Width of existing culvert(s):

(iv) Height of the top of the existing culvert above the NHW or NWL:

(v) Will all, or a part of, the existing culvert be removed? (Explain)

f. Length of proposed culvert:

g. Width of proposed culvert:

h. Height of the top of the proposed culvert above the NHW or NWL.

i. Depth of culvert to be buried below existing bottom contour.

j. Will the proposed culvert affect navigation by reducing or increasing the existing navigable opening? ☐Yes ☐No

If yes, explain:

k. Will the proposed culvert affect existing water flow? ☐Yes ☐No

If yes, explain:

3. EXCAVATION and FILL

☐ *This section not applicable*

a. (i) Will the placement of the proposed bridge or culvert require any excavation below the NHW or NWL? ☐Yes ☒No

If yes,

(ii) Avg. length of area to be excavated:

(iii) Avg. width of area to be excavated:

(iv) Avg. depth of area to be excavated:

(v) Amount of material to be excavated in cubic yards:

b. (i) Will the placement of the proposed bridge or culvert require any excavation within coastal wetlands/marsh (CW), submerged aquatic vegetation (SAV), shell bottom (SB), or other wetlands (WL)? If any boxes are checked, provide the number of square feet affected.

☐CW ____ ☐SAV ____ ☐SB

☒WL 530 ☐None

(ii) Describe the purpose of the excavation in these areas:

A small isolated wetland in the southwest quadrant will have a grass swale traversing it to collect and treat stormwater runoff.

c. (i) Will the placement of the proposed bridge or culvert require any high-ground excavation? ☒Yes ☐No

If yes,

(ii) Avg. length of area to be excavated: 60 ft.

(iii) Avg. width of area to be excavated: 45 ft.

(iv) Avg. depth of area to be excavated: 5. 0 ft.

(v) Amount of material to be excavated in cubic yards: 490

d. If the placement of the bridge or culvert involves any excavation, please complete the following:

(i) Location of the spoil disposal area: to be determined by the contractor

(ii) Dimensions of the spoil disposal area: to be determined by the contractor

(iii) Do you claim title to the disposal area? ☐Yes ☒No (*If no, attach a letter granting permission from the owner.)*

(iv) Will the disposal area be available for future maintenance? ☐Yes ☒No

(v) Does the disposal area include any coastal wetlands/marsh (CW), submerged aquatic vegetation (SAVs), other wetlands (WL), or shell bottom (SB)?

☐CW ☐SAV ☐WL ☐SB ☒None

If any boxes are checked, give dimensions if different from (ii) above.

(vi) Does the disposal area include any area below the NHW or NWL? ? ☐Yes ☒No

If yes, give dimensions if different from (ii) above.

e. (i) Will the placement of the proposed bridge or culvert result in any fill (other than excavated material described in Item **d** above) to be placed below NHW or NWL? ☒Yes ☐No

If yes,

(ii) Avg. length of area to be filled: 400 ft.

(iii) Avg. width of area to be filled: 2.5 ft.

(iv) Purpose of fill: Roadway embankment

f. (i) Will the placement of the proposed bridge or culvert result in any fill (other than excavated material described in Item **d** above) to be placed within coastal wetlands/marsh (CW), submerged aquatic vegetation (SAV), shell bottom (SB), or other wetlands (WL)? If any boxes are checked, provide the number of square feet affected.

☒CW 7840 ☐SAV ____ ☐SB

☒WL 1740 ☐None

(ii) Describe the purpose of the excavation in these areas:

Roadway embankment and new relocated driveway.

g. (i) Will the placement of the proposed bridge or culvert result in any fill (other than excavated material described in Item **d** above) to be placed on high-ground? ☒Yes ☐No

If yes,

(ii) Avg. length of area to be filled: 900 ft.

(iii) Avg. width of area to be filled: 50 ft.

(iv) Purpose of fill: roadway embankment to improve vertical profile

4. GENERAL

a. Will the proposed project require the relocation of any existing utility lines? ☒Yes ☐No

If yes, explain: Dominion Power and NCDOT will relocate two existing power poles and one down guy-line (2 sq. ft. fill in wetlands); Currituck Co. Water Department will install 12" water line along proposed road via directional bore

If this portion of the proposed project has already received approval from local authorities, please attach a copy of the approval or certification.

b. Will the proposed project require the construction of any temporary detour structures? ☐Yes ☒No

If yes, explain:

< Form continues on back>

c. Will the proposed project require any work channels? ☐Yes ☒No

d. How will excavated or fill material be kept on site and erosion controlled?

If yes, complete Form DCM-MP-2.

Fill will be placed and compacted as part of the roadway fill. Erosion will be controlled through NCDOT's BMP's for sediment and erosion control

e. What type of construction equipment will be used (for example, dragline, backhoe, or hydraulic dredge)?

crane(s), grading and paving equipment

f. Will wetlands be crossed in transporting equipment to project site? ☐Yes ☒No

If yes, explain steps that will be taken to avoid or minimize environmental impacts.

g. Will the placement of the proposed bridge or culvert require any shoreline stabilization? ☐Yes ☒No

If yes, complete form MP-2, Section 3 for Shoreline Stabilization only.

3-15-07

Date

B-2950

Project Name

Elizabeth L. Lusk

Applicant Name

E. L. Lusk

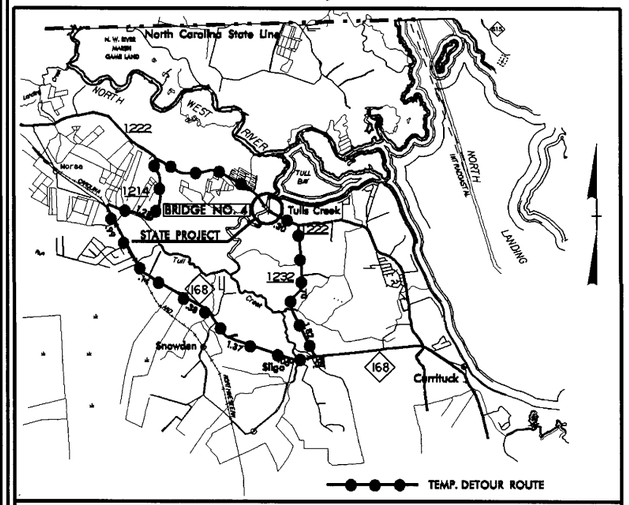
Applicant Signature

09/08/99

TIP PROJECT: B-2950

CONTRACT: C201641

See Sheet 1-A For Index of Sheets
See Sheet 1-B For Conventional Plan Sheet Symbols
See Sheet 1-C For Survey Control Sheet



VICINITY MAP

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CURRITUCK COUNTY

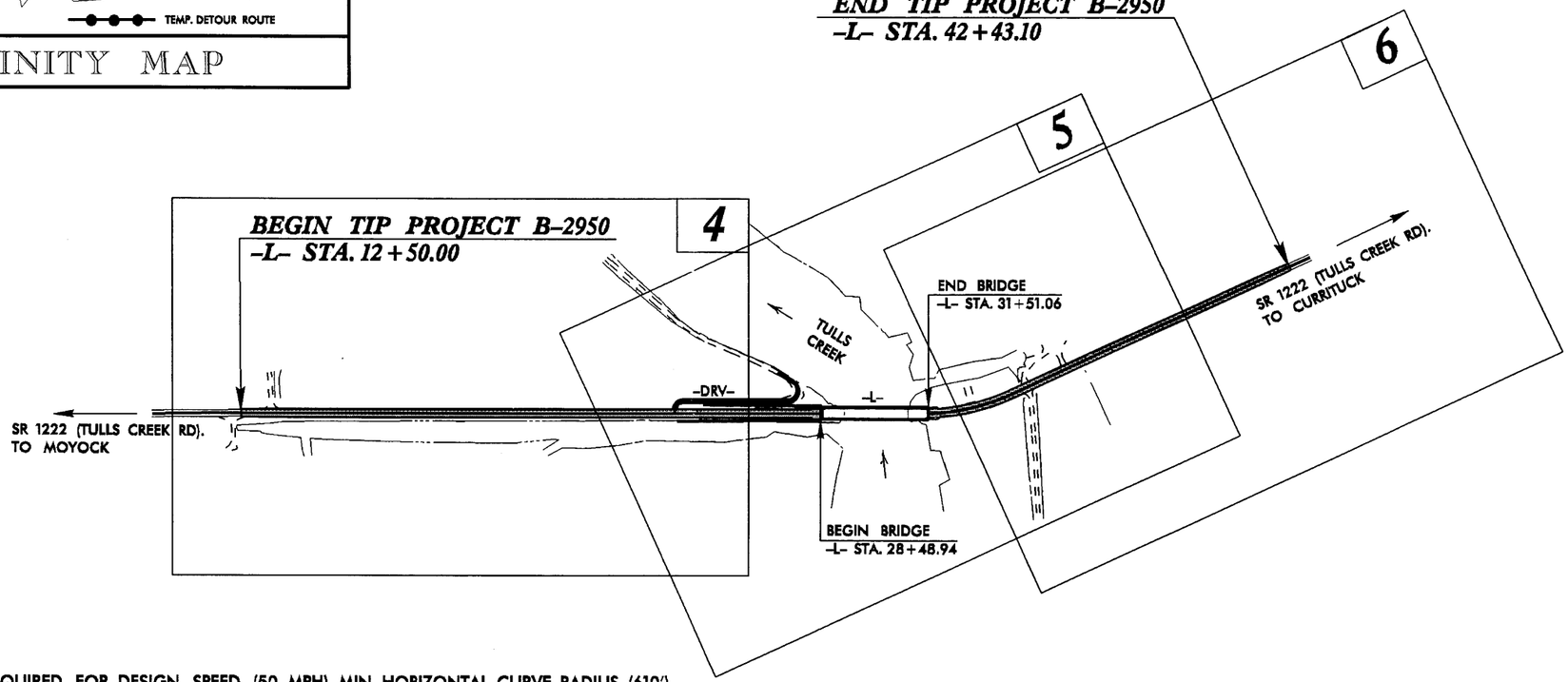
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-2950	1	

STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION
32773.1.1	BRZ-1222(2)	P.E.
32773.2.1	BRZ-1222(2)	ROW & UTIL
32773.3.2	BRZ-1222(2)	CONST

LOCATION: BRIDGE NO. 4 OVER TULLS CREEK ON SR 1222

TYPE OF WORK: GRADING, DRAINAGE, PAVING AND STRUCTURE

NAD 83



★ DESIGN EXCEPTIONS REQUIRED FOR DESIGN SPEED (50 MPH), MIN. HORIZONTAL CURVE RADIUS (610') AND HORIZONTAL STOPPING SIGHT DISTANCE (308').

GRAPHIC SCALES

50 25 0 50 100
PLANS

50 25 0 50 100
PROFILE (HORIZONTAL)

10 5 0 10 20
PROFILE (VERTICAL)

DESIGN DATA

ADT 2007 = 4428
ADT 2027 = 8508
DHV = 14%
D = 60%
T = 5% *
V = 50 MPH ★
RURAL COLLECTOR
* TTST 2% + DUAL 3%

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT B-2950 = 0.510 MI
LENGTH STRUCTURE TIP PROJECT B-2950 = 0.057 MI
TOTAL LENGTH TIP PROJECT B-2950 = 0.567 MI

Prepared In the Office of:
DIVISION OF HIGHWAYS
1000 Birch Ridge Dr., Raleigh NC, 27610

2006 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: JUNE 16, 2006

LETTING DATE: JUNE 19, 2007

GARY LOVERING, PE
PROJECT ENGINEER

ANTHONY C. WEST
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

P.E.
SIGNATURE:

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 25873 ENGINEER GARY A. LOVERING

SIGNATURE:

DIVISION OF HIGHWAYS STATE OF NORTH CAROLINA

STATE OF NORTH CAROLINA · DEPARTMENT OF TRANSPORTATION

P.E.
STATE HIGHWAY DESIGN ENGINEER

14-MAR-2007 10:32
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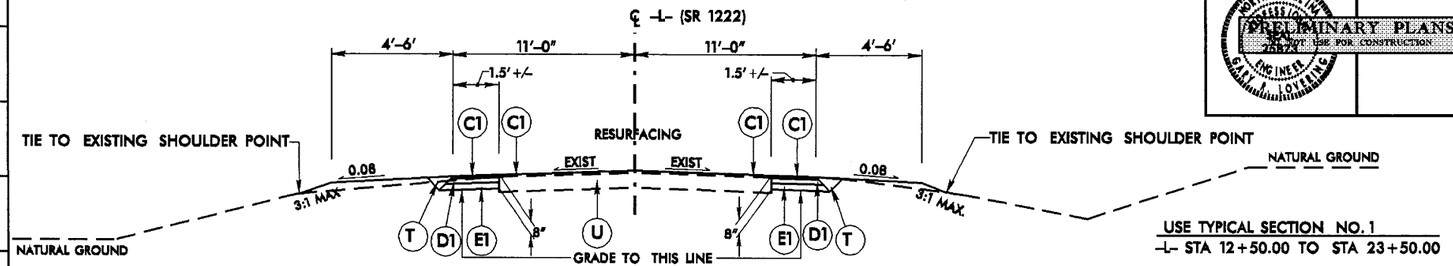
PROJECT REFERENCE NO.	SHEET NO.
B-2950	2
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

NORTH CAROLINA — PRELIMINARY PLANS — NOT TO BE USE FOR CONSTRUCTION — ENGINEER — GARY L. LOVETTE

FINAL PAVEMENT SCHEDULE

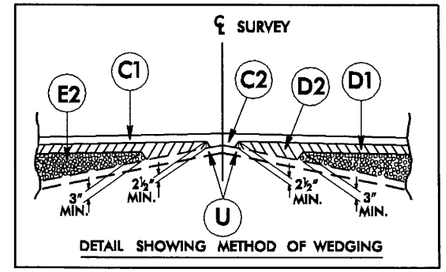
C1	PROP. APPROX. 1½" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
C2	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 112 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 1½" IN DEPTH OR GREATER THAN 2" IN DEPTH.
D1	PROP. APPROX. 2½" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 285 LBS. PER SQ. YD.
D2	PROP. VAR. DEPTH ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH, TO BE PLACED IN LAYERS NOT LESS THAN 2½" IN DEPTH OR GREATER THAN 4" IN DEPTH.
E1	PROP. APPROX. 4" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
E2	PROP. VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 3" IN DEPTH OR GREATER THAN 5½" IN DEPTH.
J	PROP. 6" AGGREGATE BASE COURSE
T	EARTH MATERIAL.
U	EXISTING PAVEMENT
W	VARIABLE DEPTH ASPHALT PAVEMENT. SEE STANDARD WEDGING DETAIL

NOTE: PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.

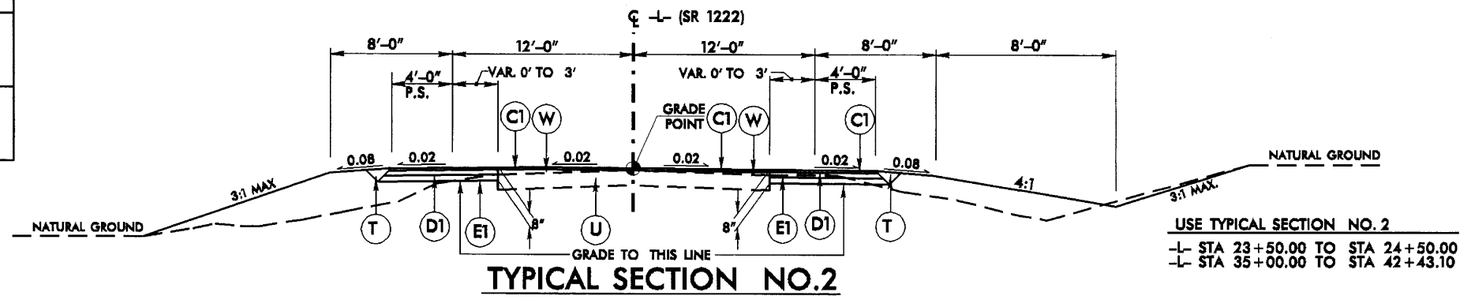


TYPICAL SECTION NO.1

USE TYPICAL SECTION NO. 1
–L– STA 12+50.00 TO STA 23+50.00



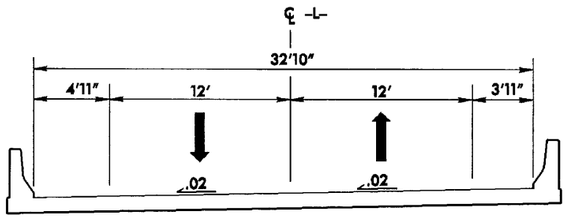
DETAIL SHOWING METHOD OF WEDGING



TYPICAL SECTION NO.2

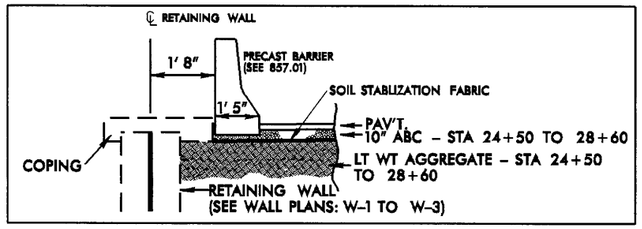
USE TYPICAL SECTION NO. 2
–L– STA 23+50.00 TO STA 24+50.00
–L– STA 35+00.00 TO STA 42+43.10

NOTE: SEE TYPICAL SECTION NO. 3 FOR RETAINING WALL LOCATION



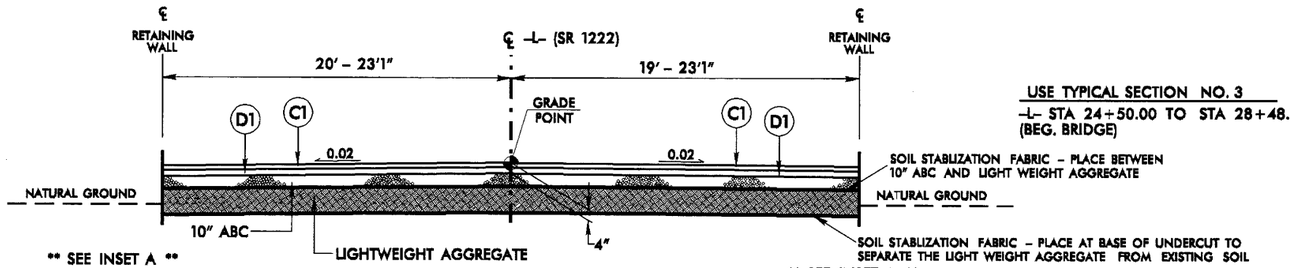
BRIDGE TYPICAL

–L– STA. STA 28+48.94
TO –L– STA 31+51.06



** INSET A **

USE INSET A WITH TYPICAL SECTION NO. 3
LIGHTWEIGHT AGGREGATE AND 10" ABC LIMITS
–L– STA 24+50 TO 28+60



** SEE INSET A **

PROPOSED RETAINING WALL
–L– STA 25+25 TO STA 28+60 LT

TYPICAL SECTION NO.3

** SEE INSET A **

PROPOSED RETAINING WALL
–L– STA 24+50 TO 28+60 RT

USE TYPICAL SECTION NO. 3
–L– STA 24+50.00 TO STA 28+48.94
(BEG. BRIDGE)

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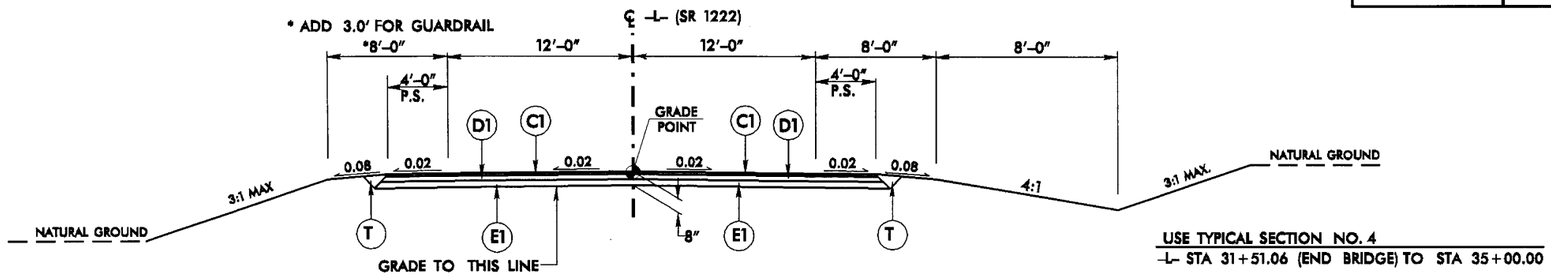
6/2/99

C1	1½" S9.5B
C2	VAR S9.5B
D1	2½" I19.0B
D2	VAR I19.0B
E1	4" B25.0B
E2	VAR B25.0B
J	6" ABC
T	EARTH
U	EXIST
W	WEDGE

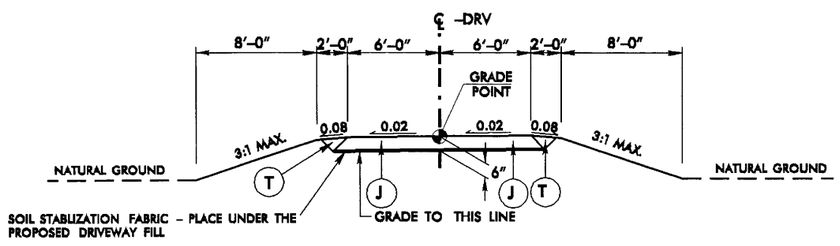
PROJECT REFERENCE NO.	SHEET NO.
B-2950	2-A
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

NORTH CAROLINA PRELIMINARY PLANS NOT FOR CONSTRUCTION 25670 ENGINEER GARY L. LOVETTE



TYPICAL SECTION NO.4

USE TYPICAL SECTION NO. 4
-L- STA 31+51.06 (END BRIDGE) TO STA 35+00.00



TYPICAL SECTION NO.5

USE TYPICAL SECTION NO. 5
-DRV- STA 10+16.20 TO STA 13+75.00

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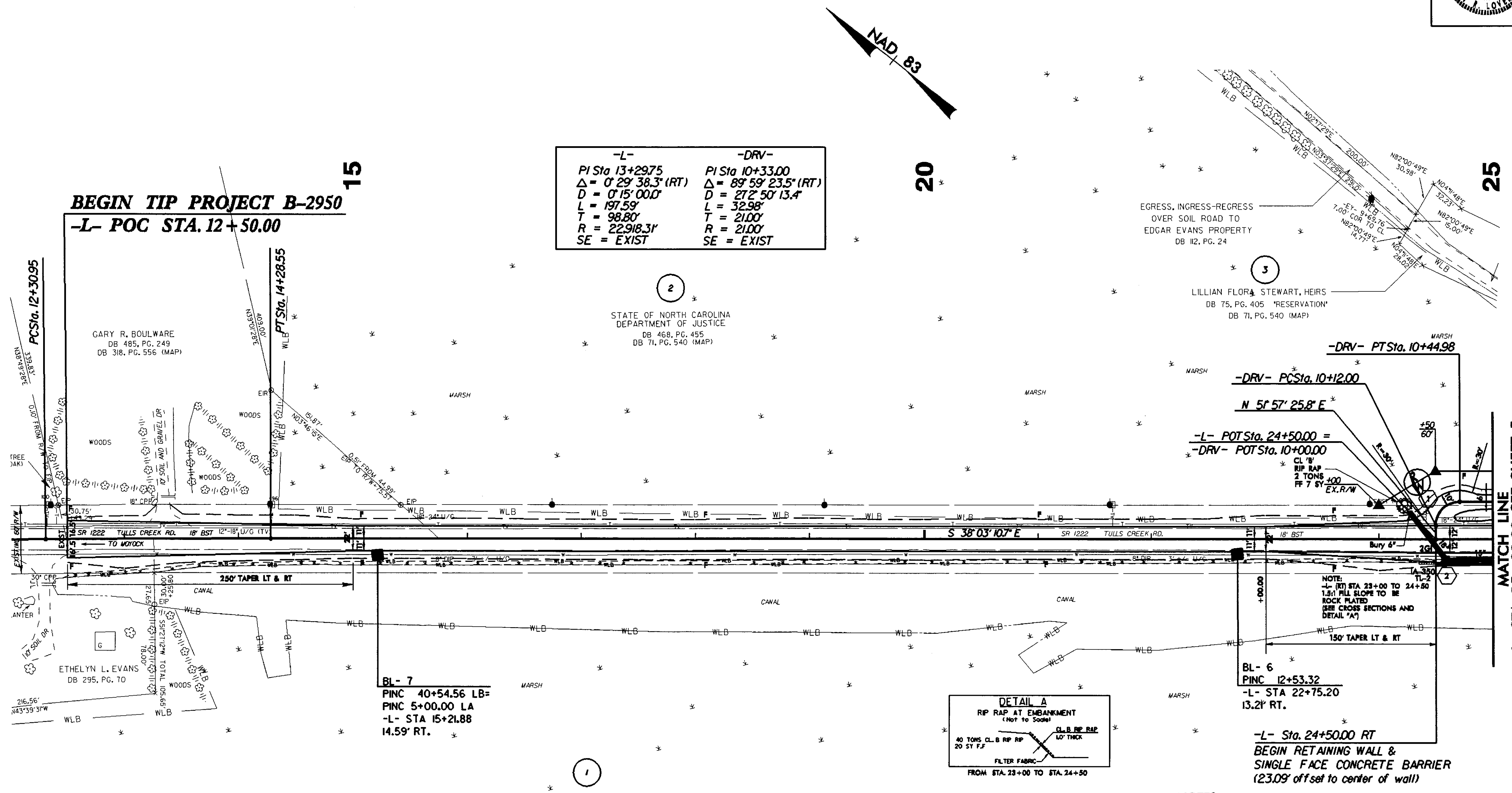
PROJECT REFERENCE NO.	SHEET NO.
B-2950	4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



NAD 83
BEGIN TIP PROJECT B-2950
-L- POC STA. 12+50.00
15
20
25
-L-
PI Sta 13+29.75
Δ = 0° 29' 38.3" (RT)
D = 0° 15' 00.0"
L = 197.59'
T = 98.80'
R = 22,918.31'
SE = EXIST
-DRV-
PI Sta 10+33.00
Δ = 89° 59' 23.5" (RT)
D = 272° 50' 13.4"
L = 32.98'
T = 21.00'
R = 21.00'
SE = EXIST
PCSta. 12+30.95
PTSta. 14+28.55
GARY R. BOULWARE
DB 485, PG. 249
DB 318, PG. 556 (MAP)
STATE OF NORTH CAROLINA
DEPARTMENT OF JUSTICE
DB 468, PG. 455
DB 71, PG. 540 (MAP)
EGRESS, INGRESS-REGRESS
OVER SOIL ROAD TO
EDGAR EVANS PROPERTY
DB 112, PG. 24
LILLIAN FLORA STEWART, HEIRS
DB 75, PG. 405 "RESERVATION"
DB 71, PG. 540 (MAP)
-DRV- PT Sta. 10+44.98
-DRV- PC Sta. 10+12.00
N 5° 57' 25.8" E
-L- POT Sta. 24+50.00 =
-DRV- POT Sta. 10+00.00
SR 1222 TULLS CREEK RD. 18' BST
TO MOYOCK
S 38° 03' 10.7" E
250' TAPER LT & RT
150' TAPER LT & RT
WOODS
MARSH
CANAL
ETHELYN L. EVANS
DB 295, PG. 70
BL- 7
PINC 40+54.56 LB=
PINC 5+00.00 LA
-L- STA 15+21.88
14.59' RT.
BL- 6
PINC 12+53.32
-L- STA 22+75.20
13.21' RT.
ROGERS L. TICE, ESTATE
DB 75, PG. 402
DB 71, PG. 540 (MAP)
DETAIL A
RIP RAP AT EMBANKMENT
(Not to Scale)
40 TONS CL. B RIP RIP
20 SY F.F.
FILTER FABRIC
FROM STA. 23+00 TO STA. 24+50
NOTE:
-L- (RT) STA 23+00 TO 24+50
1.5:1 FILL SLOPE TO BE
ROCK PLATED
(SEE CROSS SECTIONS AND
DETAIL "A")
-L- Sta. 24+50.00 RT
BEGIN RETAINING WALL &
SINGLE FACE CONCRETE BARRIER
(23.09' offset to center of wall)
MATCH LINE
-L- STA. 25+00.00 SEE SHEET 5

NOTES:

1. RETAINING WALL AND SINGLE FACE CONCRETE BARRIER TO FOLLOW A STRAIGHT LINE TAPER FROM FULL SHOULDER WIDTH (8') TO BRIDGE RAIL ON APPROACH SLAB.
2. SEE STRUCTURE PLANS FOR RETAINING WALL AND BRIDGE DESIGN FOR -L- & -DRV- PROFILES SEE SHEET 7 & 8 FOR WALL DESIGN SEE SHEETS W-1 TO W-3

P.S. = PAVED SHOULDER

*DESIGN EXCEPTION REQUIRED FOR DESIGN SPEED (50 MPH), MIN. HORIZONTAL CURVE RADIUS (610') AND HORIZONTAL STOPPING SIGHT DISTANCE (308').

7/2/99

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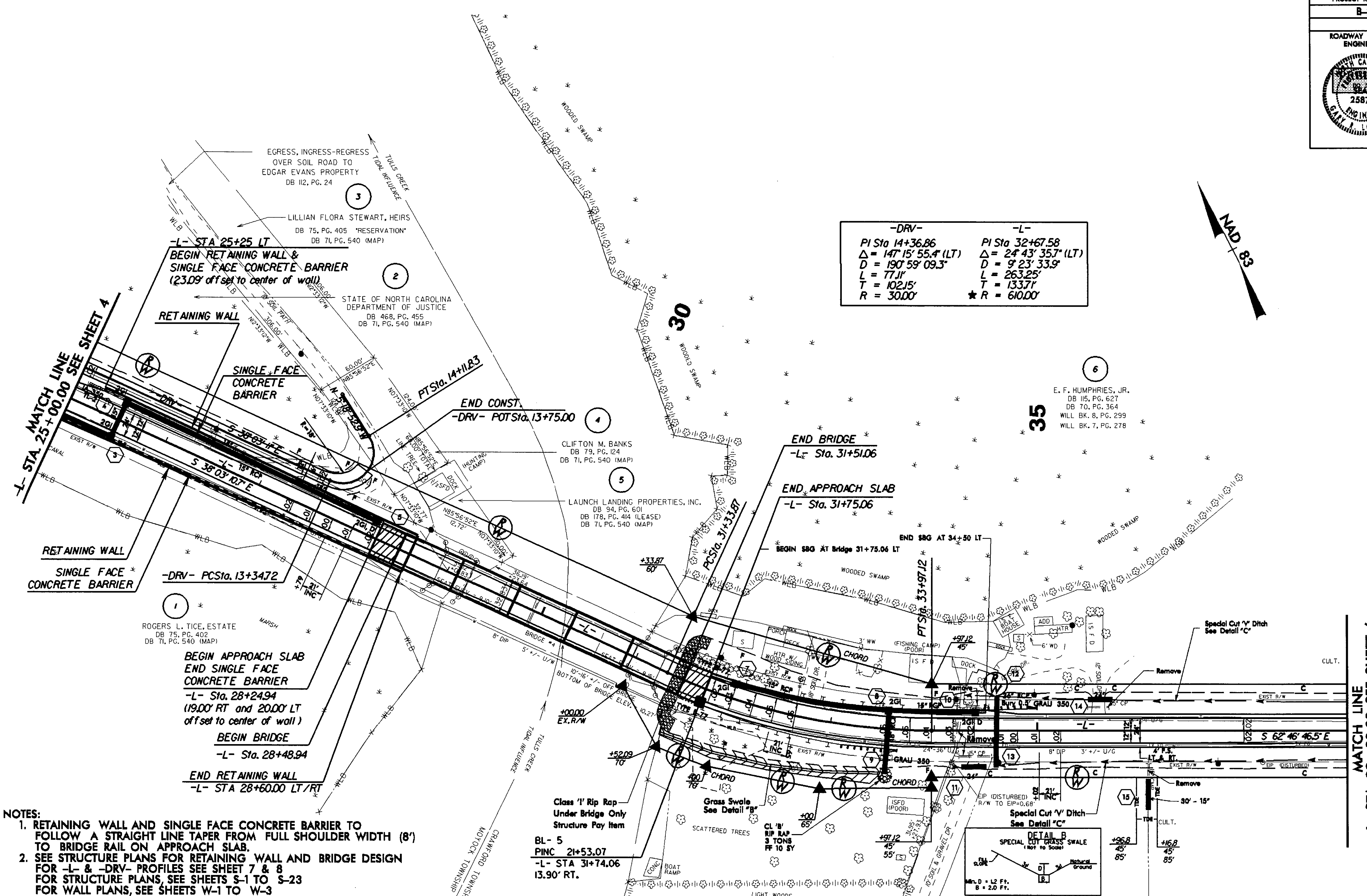
PROJECT REFERENCE NO.	SHEET NO.
B-2950	5
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

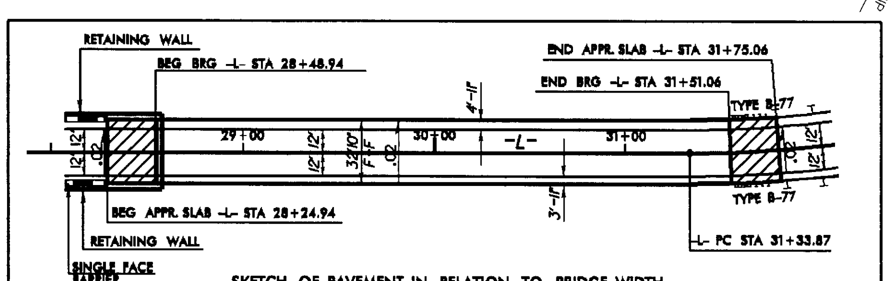
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



MATCH LINE -L- STA. 25+00.00 SEE SHEET 4
MATCH LINE -L- STA. 38+00.00 SEE SHEET 6
NAD 83
EGRESS, INGRESS-REGRESS OVER SOIL ROAD TO EDGAR EVANS PROPERTY DB 112, PG. 24
LILLIAN FLORA STEWART, HEIRS DB 75, PG. 405 "RESERVATION" DB 71, PG. 540 (MAP)
STATE OF NORTH CAROLINA DEPARTMENT OF JUSTICE DB 468, PG. 455 DB 71, PG. 540 (MAP)
CLIFTON M. BANKS DB 79, PG. 124 DB 71, PG. 540 (MAP)
LAUNCH LANDING PROPERTIES, INC. DB 94, PG. 601 DB 178, PG. 414 (LEASE) DB 71, PG. 540 (MAP)
ROGERS L. TICE, ESTATE DB 75, PG. 402 DB 71, PG. 540 (MAP)
E. F. HUMPHRIES, JR. DB 115, PG. 627 DB 70, PG. 364 WILL BK. 8, PG. 299 WILL BK. 7, PG. 278
LESTER INTERPRISES, INC DB 170, PG. 765 DB 118, PG. 350 (MAP) DB 142, PG. 56 (MAP)
-L- STA 25+25 LT BEGIN RETAINING WALL & SINGLE FACE CONCRETE BARRIER (23.09' offset to center of wall)
RETAINING WALL
SINGLE FACE CONCRETE BARRIER
END CONST. -DRV- POT Sta. 13+75.00
PT Sta. 14+11.83
-DRV- PC Sta. 13+34.72
BEGIN APPROACH SLAB END SINGLE FACE CONCRETE BARRIER -L- Sta. 28+24.94 (19.00' RT and 20.00' LT offset to center of wall)
BEGIN BRIDGE -L- Sta. 28+48.94
END RETAINING WALL -L- STA 28+60.00 LT/RT
END BRIDGE -L- Sta. 31+51.06
END APPROACH SLAB -L- Sta. 31+75.06
PC Sta. 31+33.87
PT Sta. 33+97.12
BEGIN SBG AT Bridge 31+75.06 LT
END SBG AT 34+50 LT
Class 'I' Rip Rap Under Bridge Only Structure Pay Item
Grass Swale See Detail "B"
CL 'B' RIP RAP 3 TONS FF 10 SY
BL-5 PINC 21+53.07 -L- STA 31+74.06 13.90' RT.
Special Cut 'V' Ditch See Detail "C"
S 38°03'10.7" E
S 62°46'46.5" E
WOODED SWAMP
TULLS CREEK TIDAL INFLUENCE
CRAWFORD TOWNSHIP
MOYOCK TOWNSHIP
SCATTERED TREES
LIGHT WOODS
DETAIL B SPECIAL CUT GRASS SWALE (Not to Scale)
FROM 31+50 TO 33+50 RT.
DETAIL C SPECIAL DITCH (Not to Scale)
FROM 34+28 TO 42+43.10 LT. FROM 34+15 TO 42+43.10 RT.

-DRV-	-L-
PI Sta 14+36.86	PI Sta 32+67.58
Δ = 147°15' 55.4" (LT)	Δ = 24° 43' 35.7" (LT)
D = 190°59' 09.3"	D = 9° 23' 33.9"
L = 77.11'	L = 263.25'
T = 102.15'	T = 133.71'
R = 30.00'	★ R = 610.00'

NOTES:
1. RETAINING WALL AND SINGLE FACE CONCRETE BARRIER TO FOLLOW A STRAIGHT LINE TAPER FROM FULL SHOULDER WIDTH (8') TO BRIDGE RAIL ON APPROACH SLAB.
2. SEE STRUCTURE PLANS FOR RETAINING WALL AND BRIDGE DESIGN FOR -L- & -DRV- PROFILES SEE SHEET 7 & 8
FOR STRUCTURE PLANS, SEE SHEETS S-1 TO S-23
FOR WALL PLANS, SEE SHEETS W-1 TO W-3



SKETCH OF PAVEMENT IN RELATION TO BRIDGE WIDTH

P.S. = PAVED SHOULDER

★DESIGN EXCEPTION REQUIRED FOR DESIGN SPEED (50 MPH), MIN. HORIZONTAL CURVE RADIUS (610') AND HORIZONTAL STOPPING SIGHT DISTANCE (308').

7/2/99

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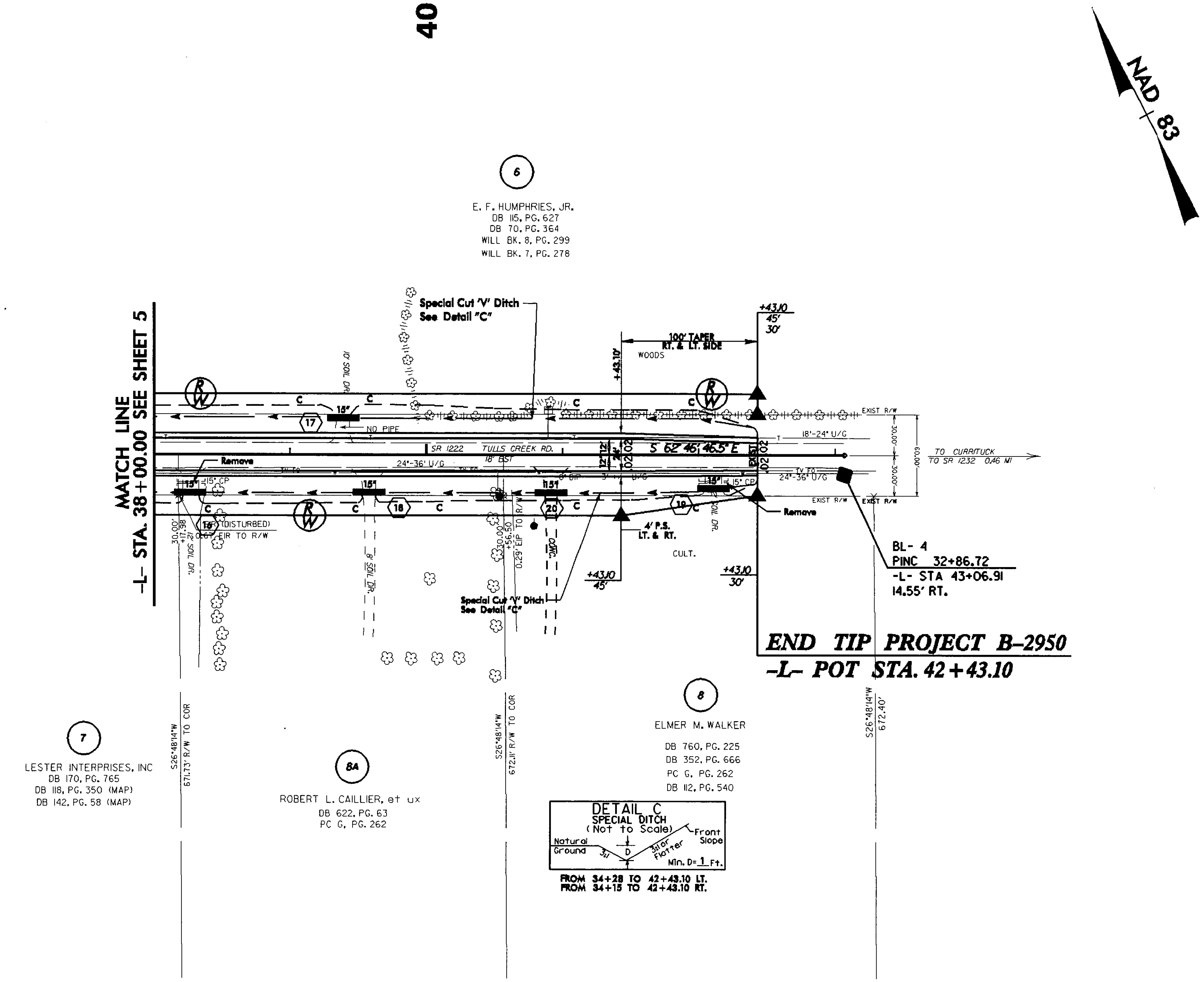
PROJECT REFERENCE NO.	SHEET NO.
B-2950	6
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



NOTES:

P.S. = PAVED SHOULDER

FOR -L- PROFILE SEE SHEET 8

★DESIGN EXCEPTION REQUIRED FOR DESIGN SPEED (50 MPH), MIN. HORIZONTAL CURVE RADIUS (610') AND HORIZONTAL STOPPING SIGHT DISTANCE (308').

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PROJECT REFERENCE NO.	SHEET NO.
B-2950	7

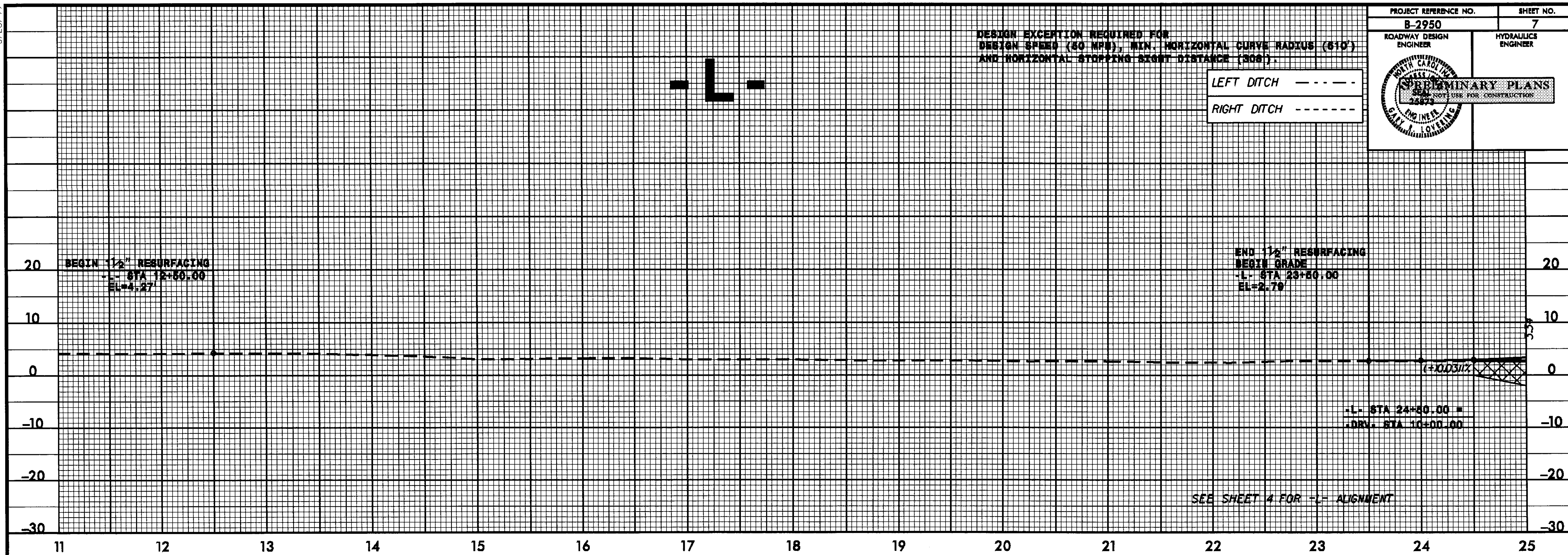
ROADWAY DESIGN ENGINEER

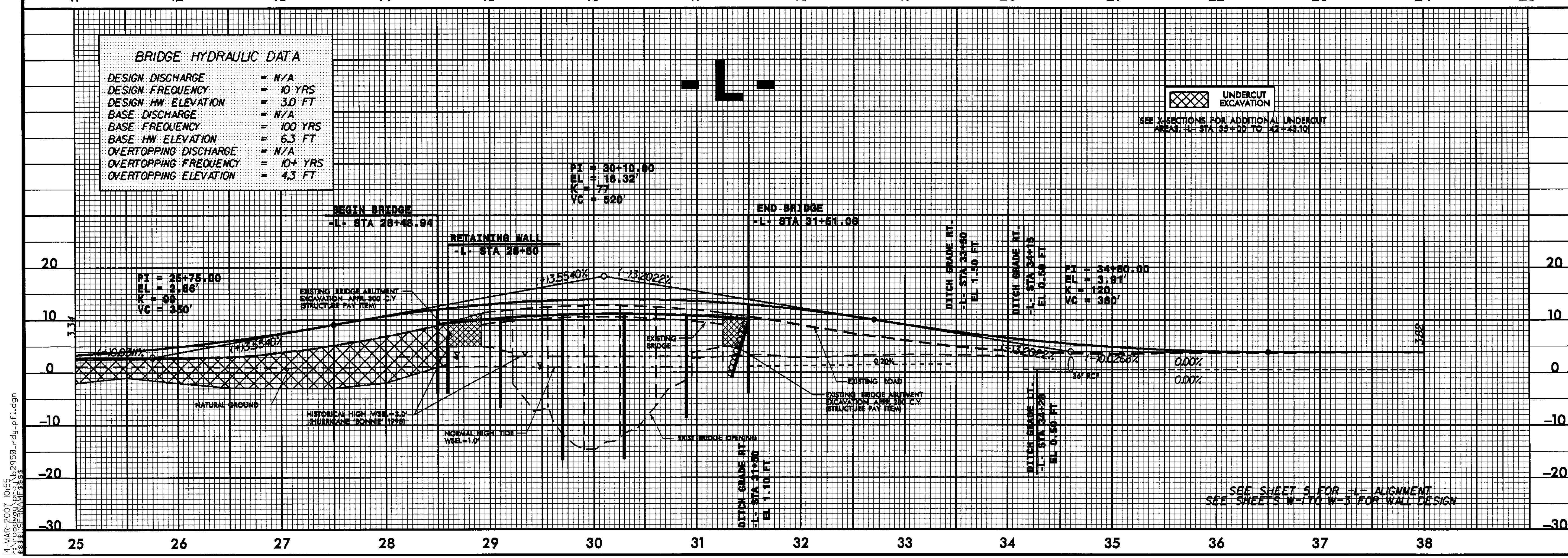
HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

DESIGN EXCEPTION REQUIRED FOR DESIGN SPEED (50 MPH), MIN. HORIZONTAL CURVE RADIUS (610') AND HORIZONTAL STOPPING SIGHT DISTANCE (306').

LEFT DITCH — · · —
RIGHT DITCH - - - - - -





-L-
UNDERCUT EXCAVATION
(SEE X-SECTIONS FOR ADDITIONAL UNDERCUT AREAS, -L- STA 35+00 TO 42+43.10)
PI = 30+10.00
EL = 18.32'
K = 77
VC = 520'
BEGIN BRIDGE
-L- STA 28+46.94
RETAINING WALL
-L- STA 28+50
END BRIDGE
-L- STA 31+51.06
PI = 25+75.00
EL = 2.86'
K = 90
VC = 350'
(+)3.5540%
(-)3.2022%
EXISTING BRIDGE ABUTMENT EXCAVATION APPR. 300 CY (STRUCTURE PAY ITEM)
EXISTING BRIDGE
NATURAL GROUND
HISTORICAL HIGH WSEL=3.0' (HURRICANE BONNIE 1998)
NORMAL HIGH TIDE WSEL=1.0'
EXIST BRIDGE OPENING
EXISTING ROAD
DITCH GRADE RT. -L- STA 31+50 EL 1.10 FT
DITCH GRADE RT. -L- STA 33+50 EL 1.50 FT
DITCH GRADE RT. -L- STA 34+15 EL 0.50 FT
DITCH GRADE LT. -L- STA 34+28 EL 0.50 FT
PI = 34+60.00
EL = 3.91'
K = 120
VC = 380'
(-)0.0266%
0.00%
36" RCP
SEE SHEET 5 FOR -L- ALIGNMENT
SEE SHEETS W-1 TO W-3 FOR WALL DESIGN

BRIDGE HYDRAULIC DATA

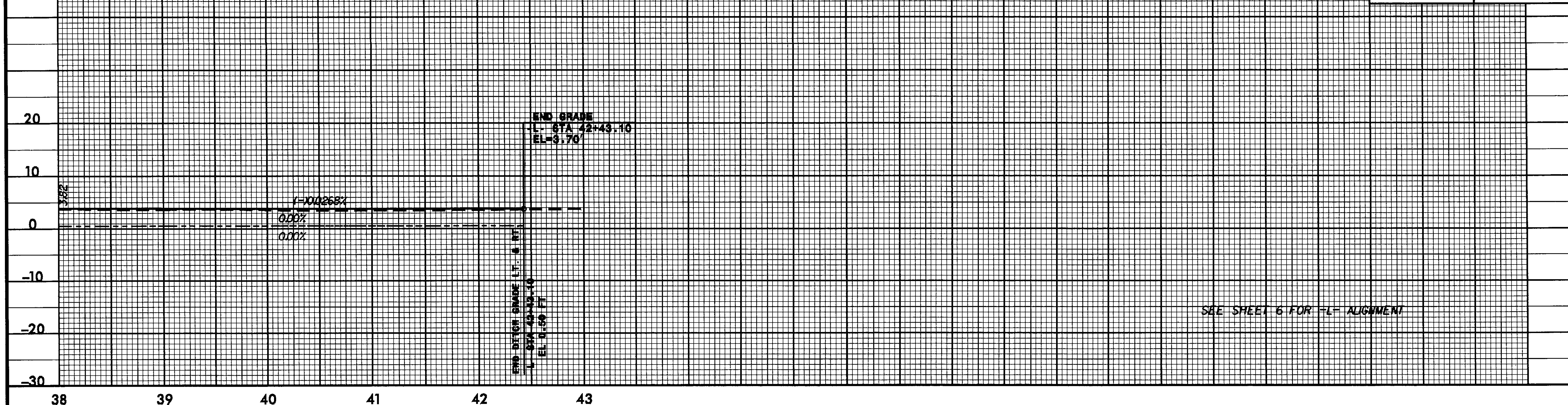
DESIGN DISCHARGE	= N/A
DESIGN FREQUENCY	= 10 YRS
DESIGN HW ELEVATION	= 3.0 FT
BASE DISCHARGE	= N/A
BASE FREQUENCY	= 100 YRS
BASE HW ELEVATION	= 6.3 FT
OVERTOPPING DISCHARGE	= N/A
OVERTOPPING FREQUENCY	= 10+ YRS
OVERTOPPING ELEVATION	= 4.3 FT

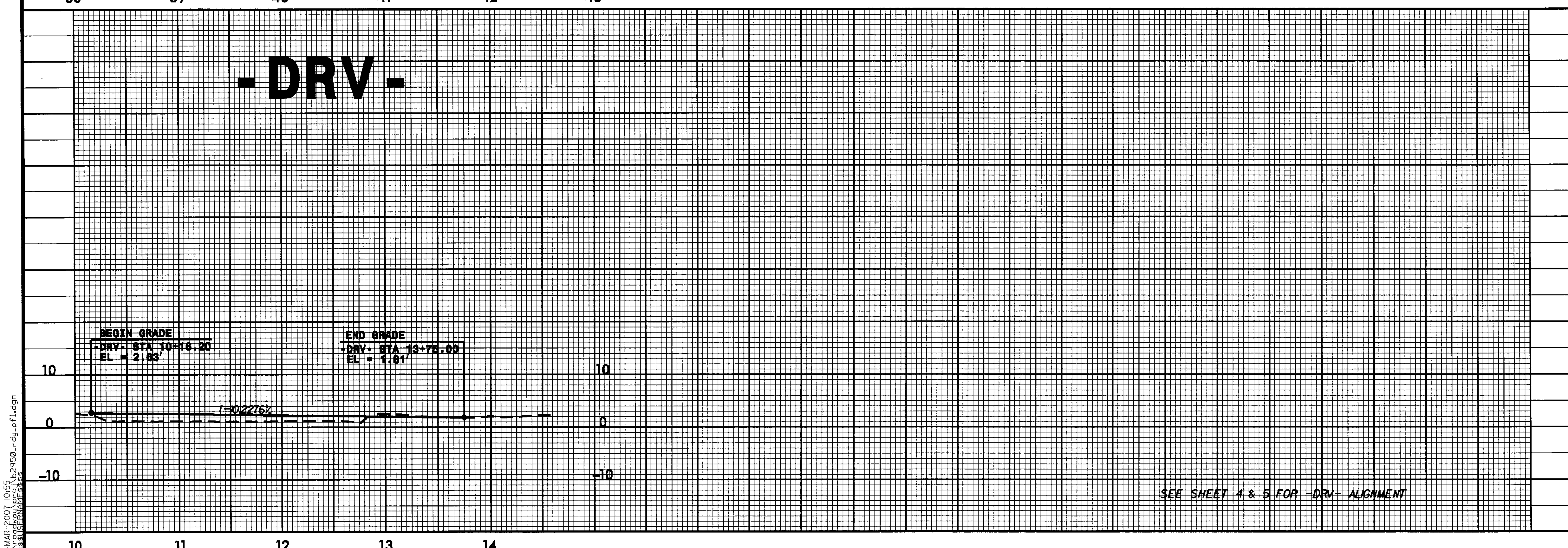
PROJECT REFERENCE NO.	SHEET NO.
B-2950	8

ROADWAY DESIGN ENGINEER — SEAL: NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 25873 GARY R. LOVERING

HYDRAULICS ENGINEER

DESIGN EXCEPTION REQUIRED FOR
DESIGN SPEED (50 MPH), MIN. HORIZONTAL CURVE RADIUS (610')
AND HORIZONTAL STOPPING SIGHT DISTANCE (308').





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0 10 20	PROJ. REFERENCE NO.	SHEET NO.
	B-2950	X-1

13+50.00

13+00.00

BEGIN 1 1/2" RESURFACING

BEGIN TIP PROJECT B-2950 -L- STA 12+50.00

12+50.00

12+00.00

11+50.00

11+00.00

10+50.00

10+00.00

-L-

Note: "Quantities are approximate only. The Resident Engineer will re-cross-section the work accurately when the project is staked out. These cross-section notes will be used in computing the final quantities for which the contractor will be paid."

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

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0 10 20	PROJ. REFERENCE NO.	SHEET NO.
	B-2950	X-2

16 + 50.00

16 + 00.00

15 + 50.00

15 + 00.00

14 + 50.00

14 + 00.00

- L -

14-MAR-2007 11:00
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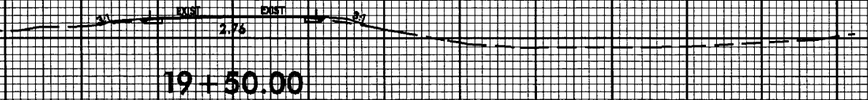
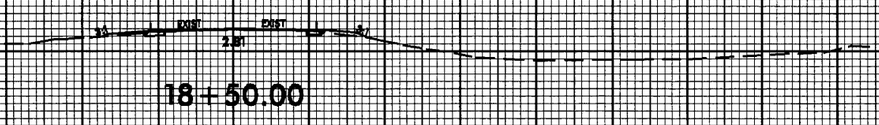
0 10 20	PROJ. REFERENCE NO.	SHEET NO.
	B-2950	X-3

19+50.00



19+00.00

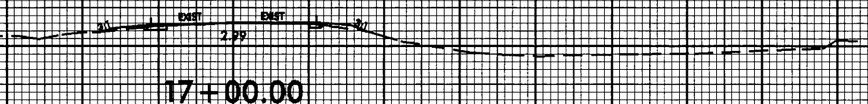
18+50.00



18+00.00

17+50.00

17+00.00



-L-

14-MAR-2007 11:01
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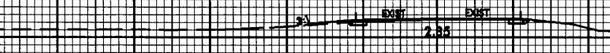
8/23/99

0 10 20	PROJ. REFERENCE NO.	SHEET NO.
	B-2950	X-4

22+50.00

22+00.00



21+50.00

21+00.00

20+50.00

20+00.00

-L-

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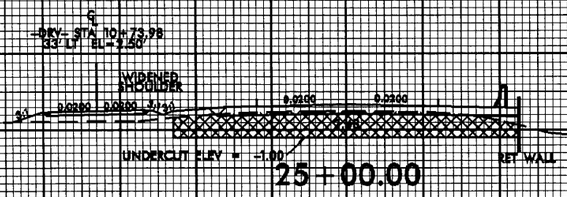
8/23/99

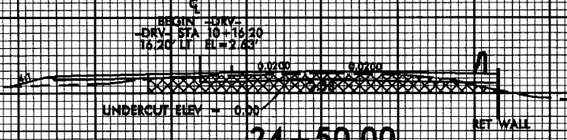
0 10 20	PROJ. REFERENCE NO.	SHEET NO.
	B-2950	X-5

UNDERCUT EXCAVATION

EXCAVATE UNDERCUT TO ELEVATION SPECIFIED ON CROSS SECTIONS

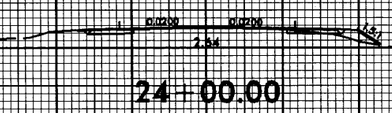


25+00.00



24+50.00

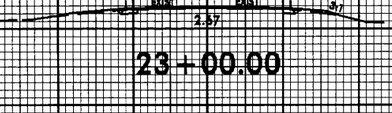
BEGIN RETAINING WALL
-L- (RT) STA 24+50.00



24+00.00

BEGIN GRADE & END 1-1/2" RESURFACING
-L- STA 23+50.00

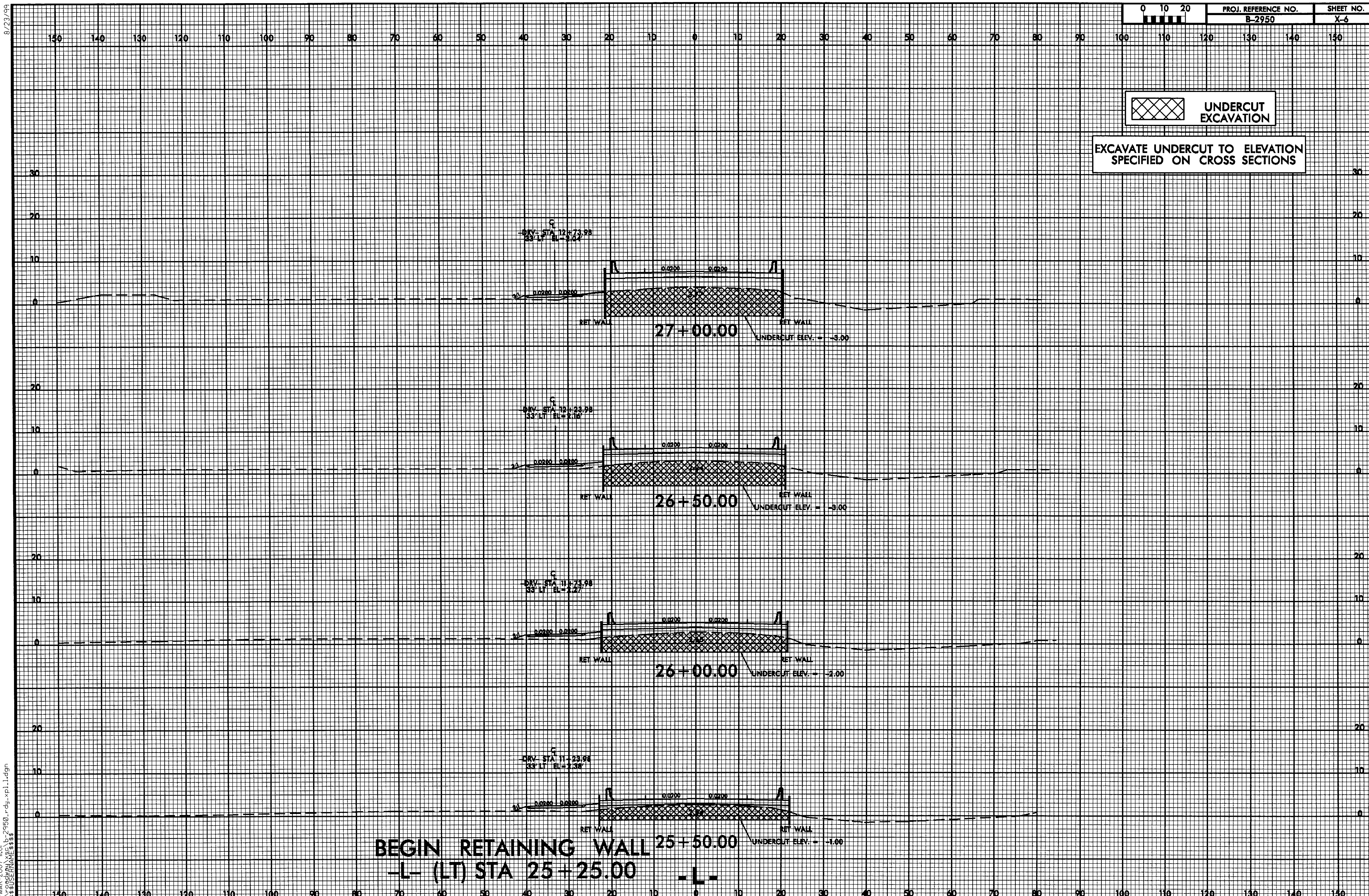
23+50.00



23+00.00

-L-

PROJ. REFERENCE NO.	SHEET NO.
B-2950	X-6



8/23/99

14-MAR-2007 11:01
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$$$$USERNAME$$$$

8/23/99

0 10 20	PROJ. REFERENCE NO.	SHEET NO.
	B-2950	X-7

UNDERCUT EXCAVATION

EXCAVATE UNDERCUT TO ELEVATION SPECIFIED ON CROSS SECTIONS

0.0200 0.0200

-7.57

29+50.00

0.0200 0.0200

5.11

29+00.00

END RETAINING WALL
-L- STA 28+60.00

0.0200 0.0200

BEGIN BRIDGE
-L- STA 28+48.94

28+50.00

UNDERCUT ELEV. = 1.00

0.0200 0.0200

RET WALL

28+00.00

RET WALL
UNDERCUT ELEV. = -2.00

℄
DRIV. STA. 13+23.93
53' LT EL = 1.93'

0.0200 0.0200 0.0200 0.0200

RET WALL

27+50.00

RET WALL
UNDERCUT ELEV. = -3.00

-L-

14-MAR-2007 11:02
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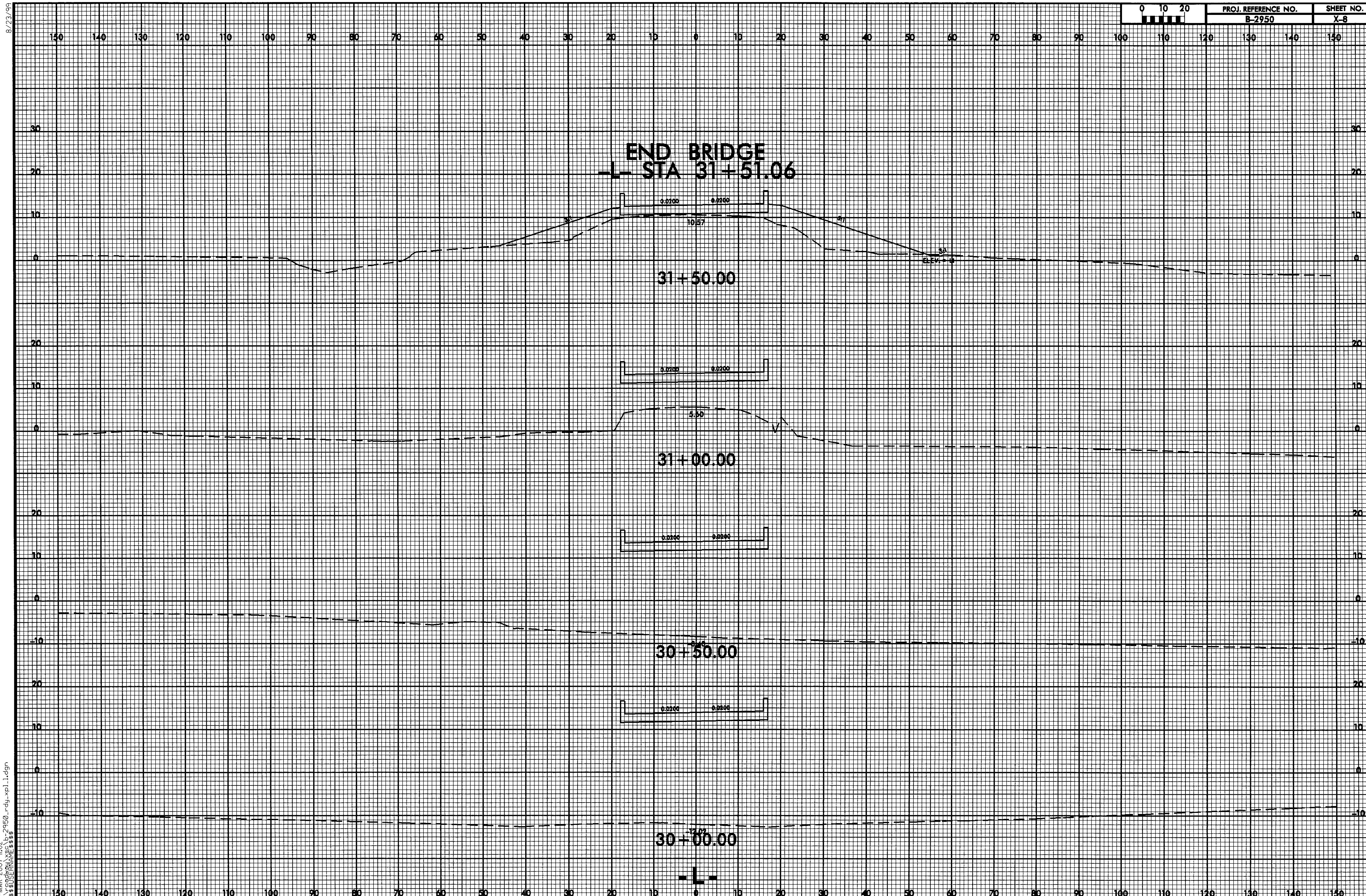
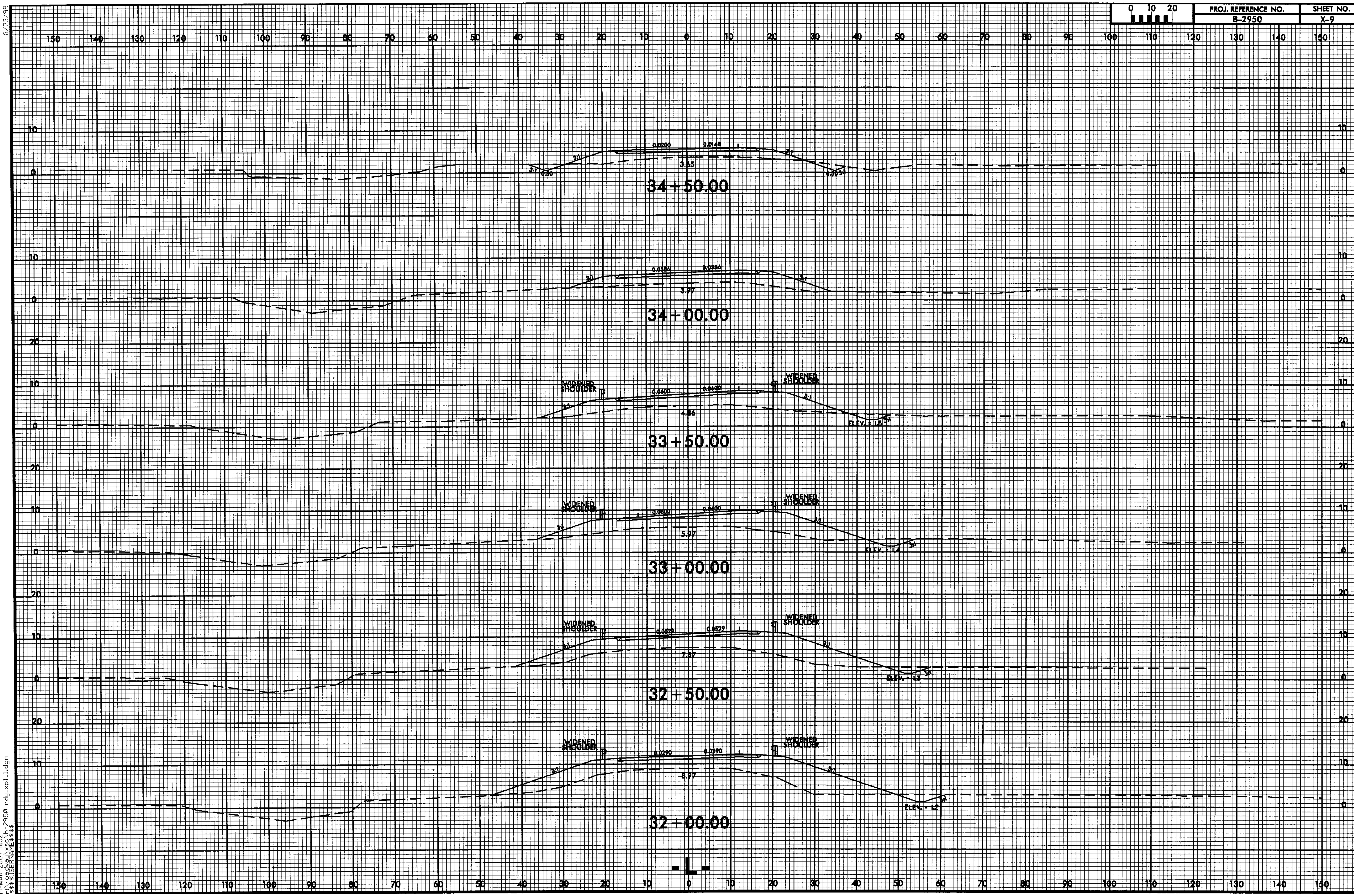
$$$$USERNAME$$$$

8/23/99



14-MAR-2007 11:02

PROJ. REFERENCE NO.	SHEET NO.
B-2950	X-9



8/23/99

14-MAR-2007 11:02
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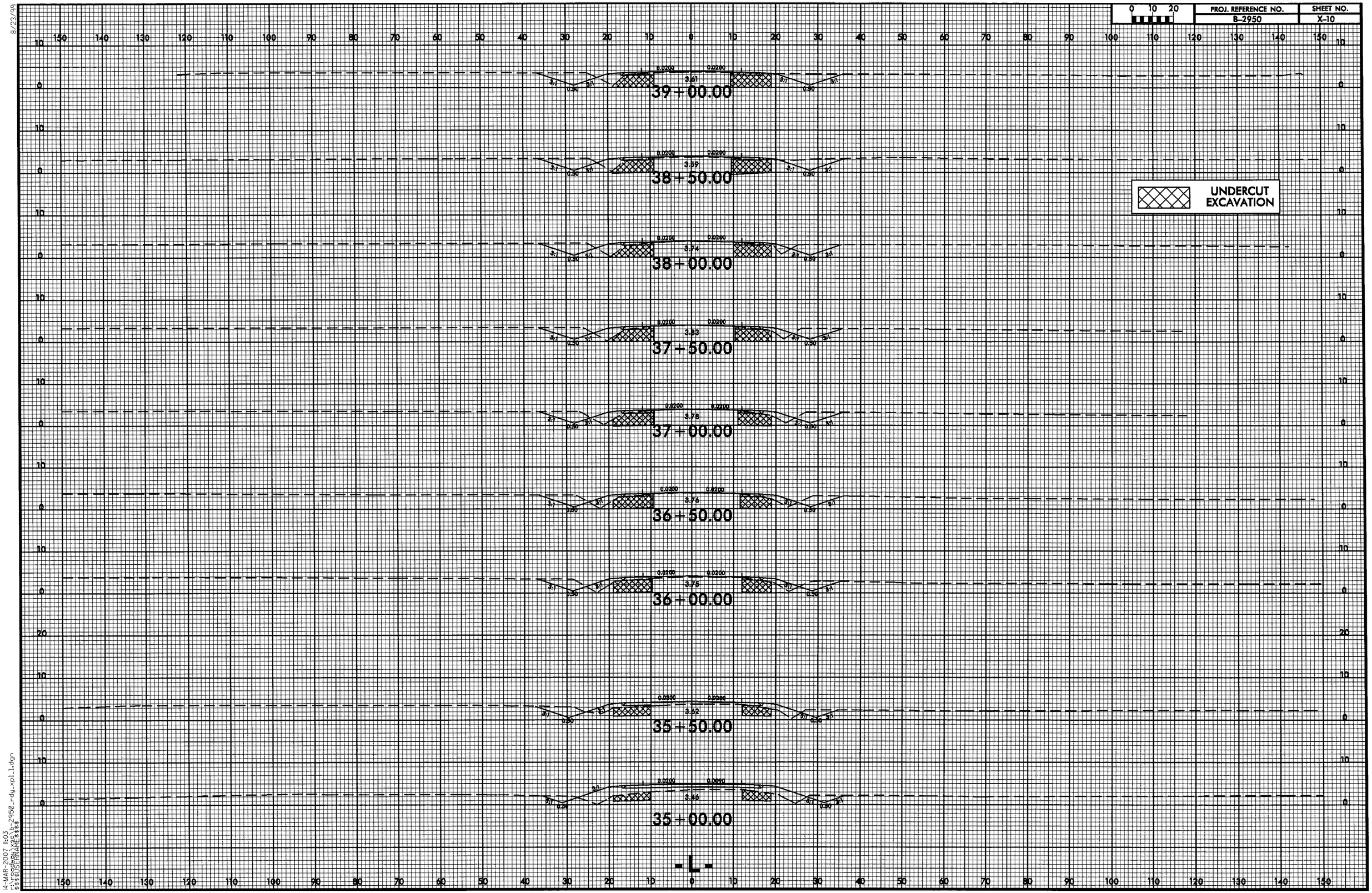
$$$$USERNAME$$$$

8/23/99

0 10 20	PROJ. REFERENCE NO.	SHEET NO.
	B-2950	X-10



14-MAR-2007 11:03
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$$$$USERNAME$$$$

8/23/99

0 10 20	PROJ. REFERENCE NO.	SHEET NO.
	B-2950	X-11

UNDERCUT EXCAVATION

43+00.00

42+50.00

END TIP PROJECT B-2950 -L- STA 42+43.10

42+00.00

41+50.00

41+00.00

40+50.00

40+00.00

39+50.00

-L-

14-MAR-2007 11:03
V:\2950\proj\b-2950_rdy_xpl1.dgn
$$$$USERNAME$$$$

8/23/99

0 10 20	PROJ. REFERENCE NO.	SHEET NO.
	B-2950	X-12

14+50.00

14+00.00

END GRADE
-DRV- STA 13+75.00

13+50.00

-DRV-

SEE SHEETS X-5 & X-6 FOR ADD'L -DRV- X-SECTIONS

14-MAR-2007 11:03
r:\roadway\se\b2950_drv_xpl.dgn
$$$$USERNAME$$$$

Adjacent Property Owners

Owner/ Business	Address
Lester Interprises	PO Box 7206 Norfolk VA 23509
Clifton M. Banks	RT 1 box 234 Moyock NC 27958
Launch Landing Properties, Inc. c/o M. Barney	113 84th St. #8 Virginia Beach VA 23451-1809
Edmund Humphries, Jr.	PO Box 39 Moyock NC 27958
Rogers L. Tice Estate	Rt. 1 Box 60 Tice Rd. Moyock NC 27958
James W. Tice III	Rt. 1 Box 61 Moyock NC 27958
Elmer Walker	PO Box 792 Moyock NC 27958

Permit Drawing
Sheet _____ of _____

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

Currituck County
PROJ - 32773.1.1 (B-2950)

SHEET 5/12/2006

WETLAND PERMIT IMPACT SUMMARY

Site No.	Station (From/To)	Structure Size / Type	WETLAND IMPACTS: Permanent Fill In Wetlands (ac)	WETLAND IMPACTS: Temp. Fill In Wetlands (ac)	WETLAND IMPACTS: Excavation in Wetlands (ac)	WETLAND IMPACTS: Mechanized Clearing in Wetlands (ac)	WETLAND IMPACTS: Hand Clearing in Wetlands (ac)	SURFACE WATER IMPACTS: Permanent SW impacts (ac)	SURFACE WATER IMPACTS: Temp. SW impacts (ac)	SURFACE WATER IMPACTS: Existing Channel Impacts Permanent (ft)	SURFACE WATER IMPACTS: Existing Channel Impacts Temp. (ft)	SURFACE WATER IMPACTS: Natural Stream Design (ft)
1	22+50/ 27+30	Roadway Fill	0.18					0.015				
2	28+50/ 31+50	300' Bridge						0.005				
3	32+00 R.	Roadway Fill	0.04		0.01	0.01						
4	34+26 Lt.	36" RCP						0.001				
TOTALS:			0.22		0.01	0.01		0.021				

Notes:

Site 1: No clearing impacts are shown in the marsh. Marsh grass is the only vegetaion in the marsh. Erosion control measures (silt fence) will be used at the toe of fill only.

Site 2: 50 square feet of surface water impacts are due to the proposed substructure (piers).

Site 3: 0.01 acres of wetlands will be drained adjacent to a proposed grassed swale

Relocation of two power poles and one down guyline will result in less than 0.001 acre fill in coastal marsh.

Permit Drawing
Sheet _____ of _____

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

Currituck County
PROJ - 32773.1.1 (B-2950)

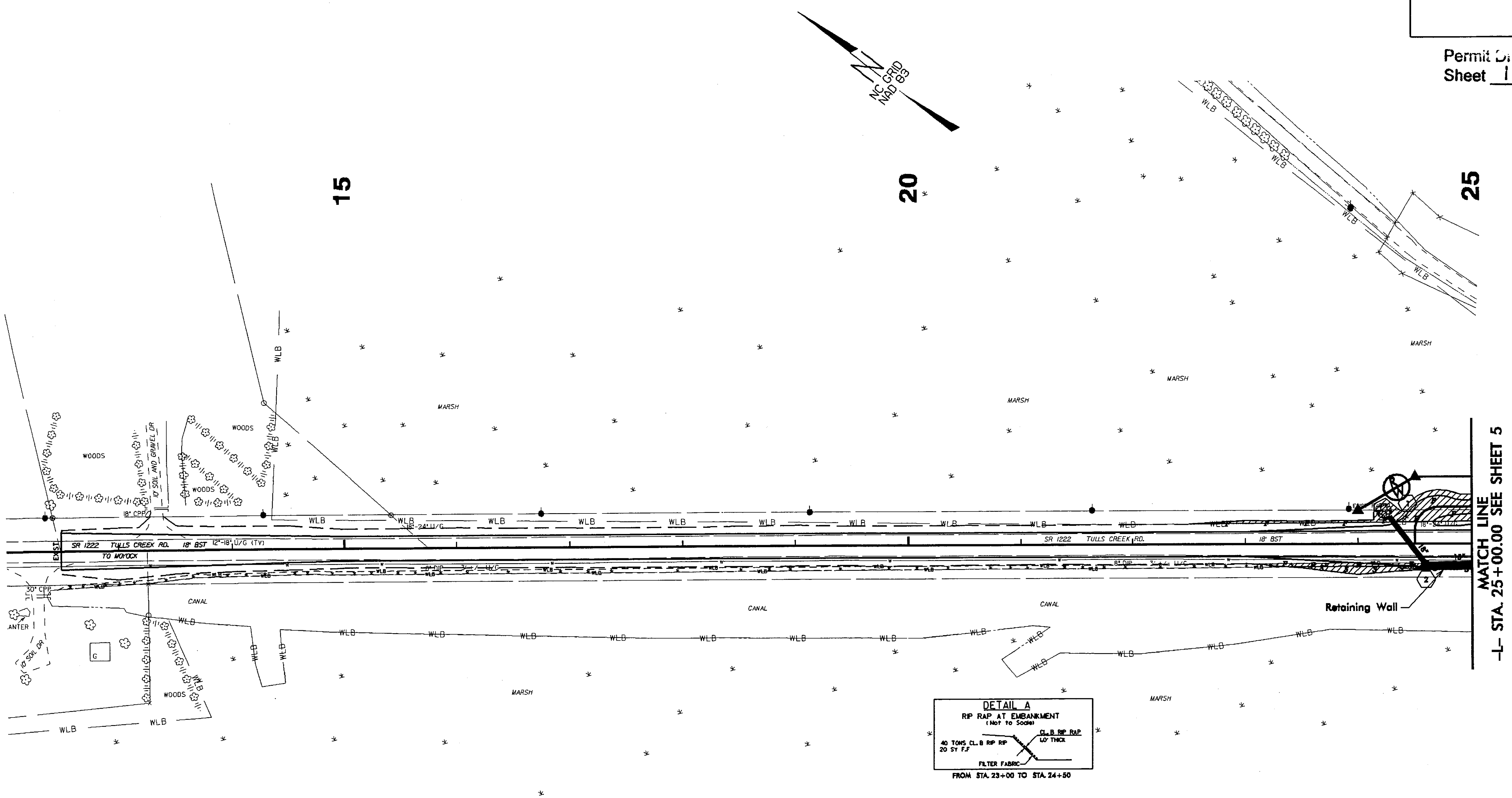
SHEET 3/9/2007

ATN Revised 3/31/05

PROJECT REFERENCE NO.	SHEET NO.
B-2950	4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

Permit Drawing
Sheet 1 of 6



Site 1

IMPACTS KEY

- Fill in Wetlands
- Fill in Surface Waters

50 25 0 50 100 ft
SCALE

MARCH 14 2007

7/2/99

12-MAR-2007 16:12
r:\hydraulics\b2950_pmt_s04.psh
smorgan AT HY22I528

7/2/99

PROJECT REFERENCE NO.	SHEET NO.
B-2950	5
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

Permit Drawing
Sheet 2 of 6

Site 1

Site 2

Site 3

Site 4

-L- STA. 25+00.00 MATCH LINE SEE SHEET 4

-L- STA. 38+00.00 MATCH LINE SEE SHEET 6

Retaining Wall

Retaining Wall

Retain Bulkhead

Retain Bulkhead

Remove Existing Bridge

Remove Existing Bridge

TULLS CREEK TIDAL INFLUENCE

TULLS CREEK TIDAL INFLUENCE

WOODED SWAMP

WOODED SWAMP

WOODED SWAMP

WOODED SWAMP

SCATTERED TREES

LIGHT WOODS

LIGHT WOODS

(FISHING CAMP) (POOR)

ISFD (POOR)

BOAT RAMP

EXIST R/W

EXIST R/W

EXIST R/W

CULT.

CULT.

NC GRID NAD 83

IMPACTS KEY	
	Fill in Wetlands
	Fill in Surface Waters
	Excavation in Wetlands
	Drained Wetlands

DETAIL B
SPECIAL CUT GRASS SWALE
(Not to Scale)

Min. D = 1.2 Ft.
B = 2.0 Ft.

FROM 31+50 TO 33+50 RT.

DETAIL C
SPECIAL DITCH
(Not to Scale)

Front Slope
Natural Ground
Min. D= 1 Ft.

FROM 34+28 TO 42+43.10 LT.
FROM 34+15 TO 42+43.10 RT.

50 25 0 50 100 ft
SCALE
1" = MARCH 14 2007

12-MAR-2007 14:03
H:\hydraulics\b2950_mst_s05.psh
snodgrass at HY221528

Enlarged View

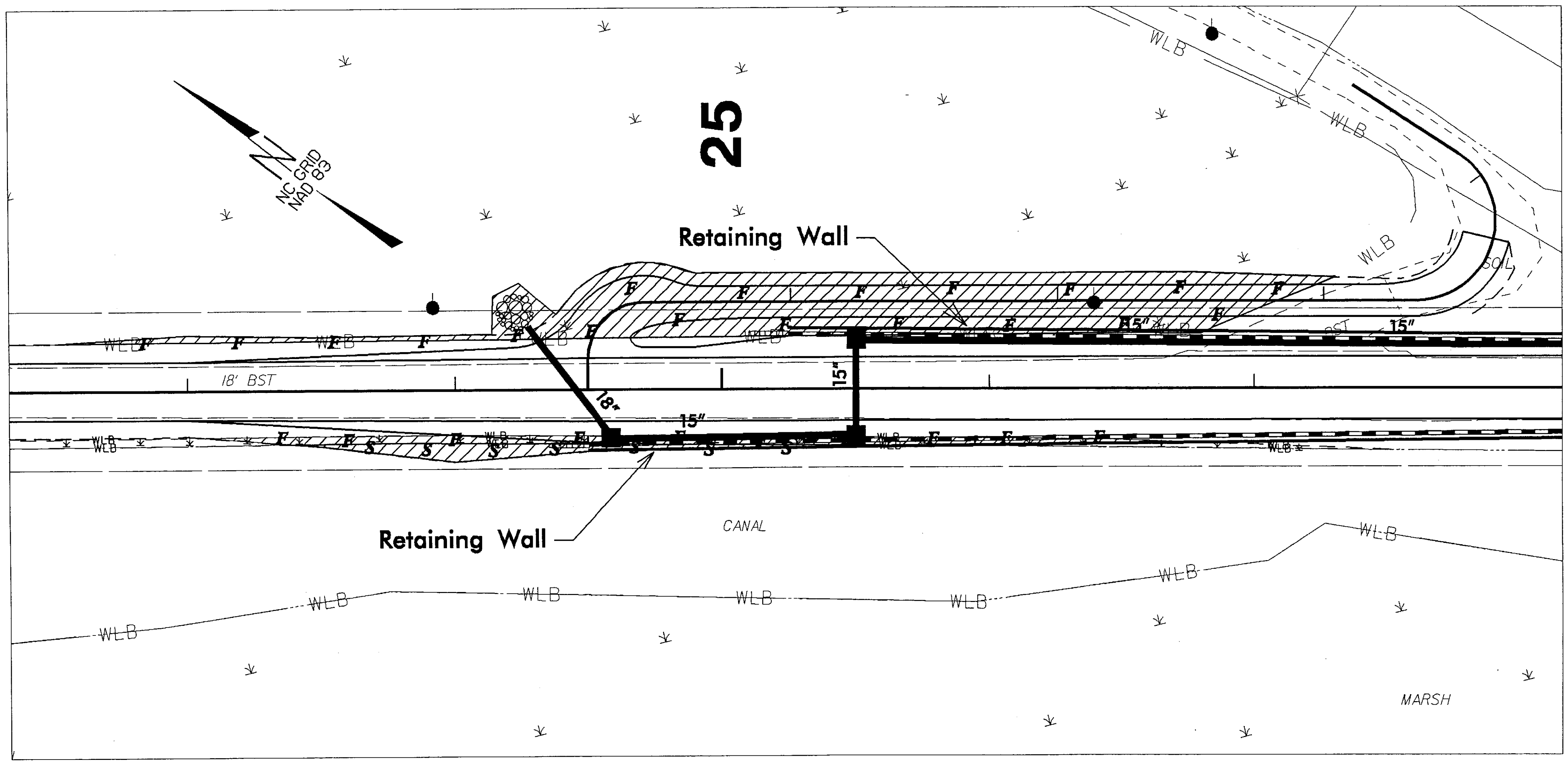
Site 1

PROJECT REFERENCE NO.	SHEET NO.
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

Permit Drawing
Sheet 3 of 6



Denotes Fill in Wetland

Denotes Fill in Surface Water

50 25 0 50 100 ft

SCALE

MARCH 14 2007

12-MAR-2007 14:03
r:\hydraulics\02950_pmt_site1a1_impacts.dgn

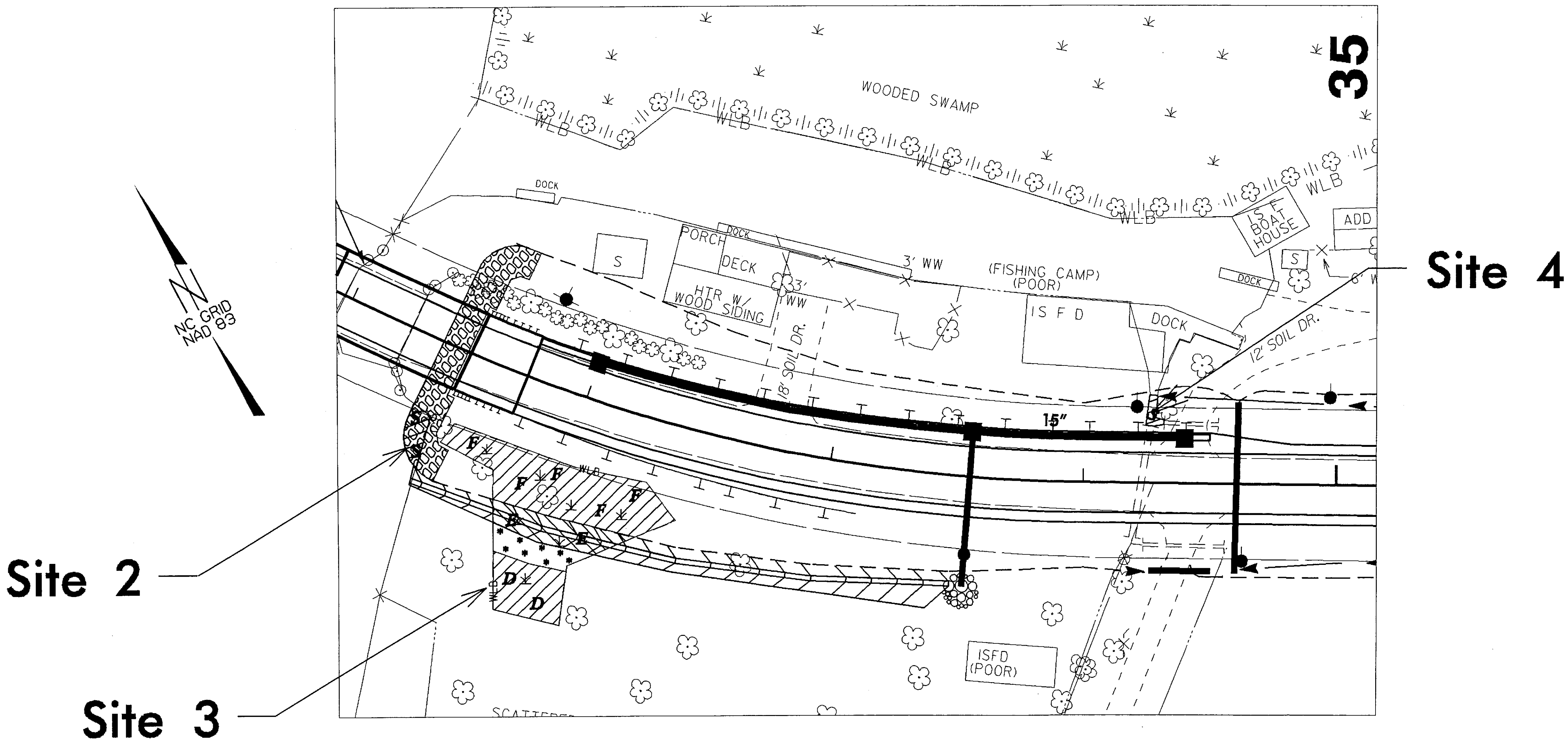
6/2/99

PROJECT REFERENCE NO.	SHEET NO.
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

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

Permit Drawing
Sheet 4 of 6

Enlarged View



Mechanized Clearing in Wetlands

Fill in Wetlands

Fill in Surface Waters

Excavation in Wetlands

Drained Wetlands

50 25 0 50 100 ft
SCALE
MARCH 14 2007

12-MAR-2007 14:04
r:\hydraulics\b2950_rdy_site(b)_impacts.dgn

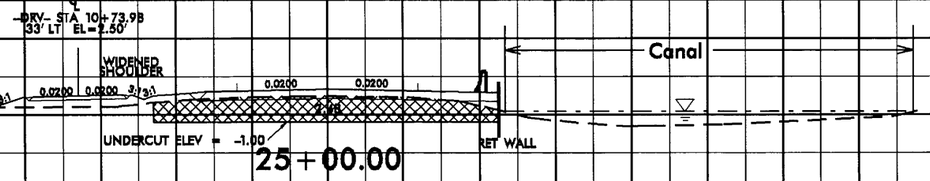
8/23/99

0 10 20	PROJ. REFERENCE NO.	SHEET NO.
	B-2950	X-5

Permit Drawing
Sheet 5 of 6

UNDERCUT EXCAVATION

EXCAVATE UNDERCUT TO ELEVATION SPECIFIED ON CROSS SECTIONS



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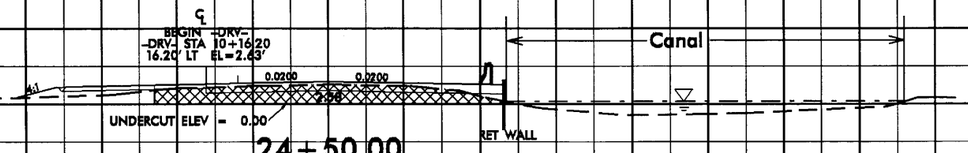
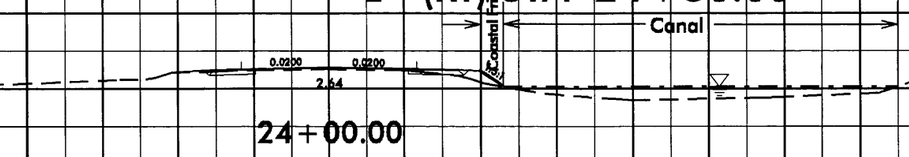
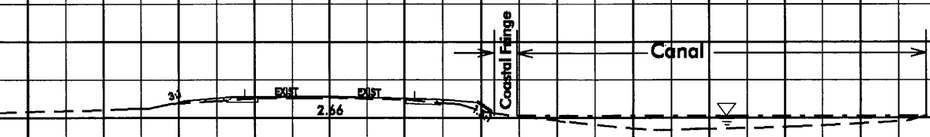


24+50.00

BEGIN RETAINING WALL
-L- (RT) STA 24+50.00

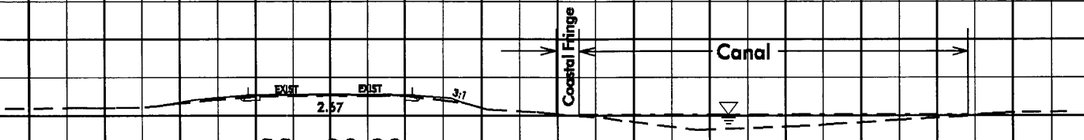


24+00.00



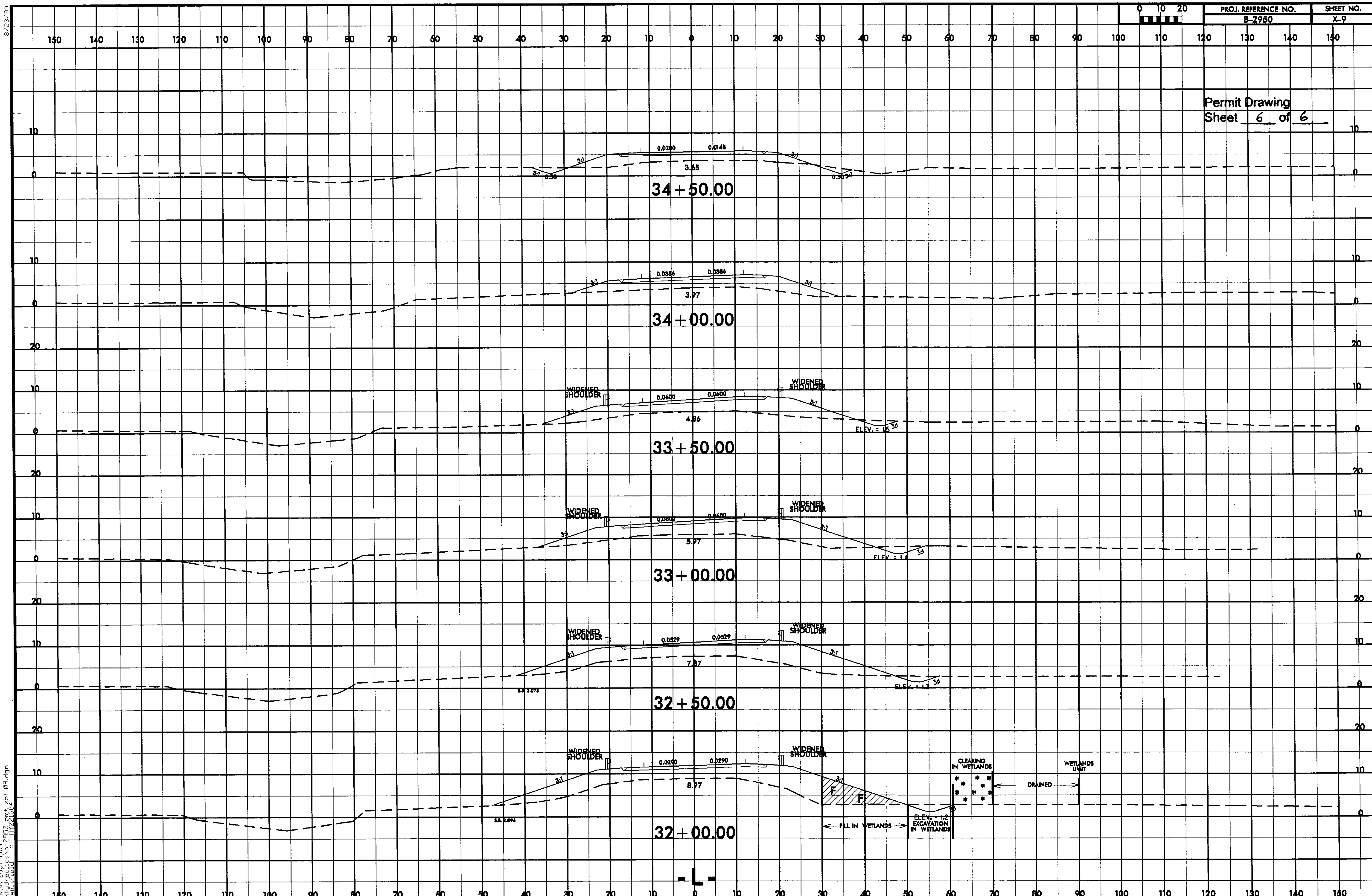
BEGIN GRADE & END 1-1/2" RESURFACING
-L- STA 23+50.00

23+50.00



23+00.00

-L-



PROJ. REFERENCE NO.
B-2950
SHEET NO.
X-9
0 10 20
Permit Drawing
Sheet 6 of 6
34+50.00
34+00.00
33+50.00
33+00.00
32+50.00
32+00.00
WIDENED SHOULDER
3:1
0.0290
0.0148
3.55
0.0386
3.97
0.0600
4.86
ELEV. = 1.5
5.97
ELEV. = 1.4
0.0529
7.37
ELEV. = 1.3
0.0290
8.97
ELEV. = 1.2
F
FILL IN WETLANDS
EXCAVATION IN WETLANDS
CLEARING IN WETLANDS
DRAINED
WETLANDS LIMIT
-L-

Ecosystem Enhancement
PROGRAM

March 14, 2007

Mr. Gregory J. Thorpe, Ph.D.
Environmental Management Director
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:

B-2950, Replace Bridge Number 4 over Tull Creek on SR 1222**,** Currituck County

The purpose of this letter is to notify you that the Ecosystem Enhancement Program (EEP) will provide the compensatory coastal marsh wetland mitigation for the subject project. Based on the information supplied by you in a letter dated March 13, 2007, the impacts are located in CU 03010205 of the Pasquotank River Basin in the Northern Outer Coastal Plain (NOCP) Eco-Region, and are as follows:

Riparian Wetland:	0.06 acre
Coastal Marsh Wetland:	0.18 acre

This mitigation acceptance letter replaces the mitigation acceptance letter issued on February 13, 2007. EEP commits to implementing sufficient compensatory wetland mitigation to offset the impacts associated with this project by the end of the MOA Year in which this project is permitted, in accordance with Section X of the Memorandum of Agreement between the North Carolina Department of Environment and Natural Resources, the North Carolina Department of Transportation, and the U. S. Army Corps of Engineers, signed on July 22, 2003. 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,

for Bill Gilmore

William D. Gilmore, P.E.
EEP Director

cc: Mr. Bill Biddlecome, USACE – Washington
Mr. John Hennessy, Division of Water Quality, Wetlands/401 Unit
File: B-2950

Ecosystem Enhancement PROGRAM

March 14, 2007

Mr. Bill Biddlecome
U. S. Army Corps of Engineers
Washington Regulatory Field Office
Post Office Box 1000
Washington, North Carolina 27889-1000

Dear Mr. Biddlecome:

Subject: EEP Mitigation Acceptance Letter:

B-2950, Replace Bridge Number 4 over Tull Creek on SR 1222, Currituck County; Pasquotank River Basin (Cataloging Unit 03010205); Northern Outer Coastal Plain (NOCP) Eco-Region

The purpose of this letter is to notify you that the Ecosystem Enhancement Program (EEP) will provide the compensatory riparian and coastal marsh mitigation for the unavoidable impact associated with the above referenced project. As indicated in the NCDOT's mitigation request letter dated March 13, 2007, compensatory riparian and coastal marsh mitigation from EEP is required for approximately 0.06 acre of riparian wetland and 0.18 acre of coastal marsh wetland impacts.

This mitigation acceptance letter replaces the mitigation acceptance letter issued on February 13, 2007. Compensatory wetland mitigation associated with this project will be provided in accordance with Section X of the Memorandum of Agreement between the N. C. Department of Environment and Natural Resources, the N. C. Department of Transportation, and the U. S. Army Corps of Engineers signed on July 22, 2003 (Tri-Party MOA). EEP commits to implement sufficient compensatory riparian wetland up to 0.12 riparian wetland credits and compensatory coastal marsh wetland mitigation up to 0.36 coastal marsh wetland credits to offset the impacts associated with this project by the end of the MOA year in which this project is permitted. 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,

for Bill Gilmore

William D. Gilmore, P.E.
EEP Director

cc: Mr. Gregory J. Thorpe, Ph.D., NCDOT-PDEA
Mr. John Hennessy, Division of Water Quality, Wetlands/401 Unit
File: B-2950 (Revised)

Michael F. Easley, Governor

William G. Ross Jr., Secretary
North Carolina Department of Environment and Natural Resources

Alan W. Klimek, P.E. Director
Division of Water Quality

November 22, 2006

Dr. Gregory J. Thorpe
NC Department of Transportation
1548 Mail Service Center
Raleigh, NC 27699-1548

Subject: Permit No. SW7060902
TIP No. B-2950, SR 1222 Bridge Over Tulls Creek
State Stormwater Permit
Linear Public Road/Bridge Project
Currituck County

Dear Dr. Thorpe:

The Washington Regional Office received a completed Stormwater Application for the subject project on September 5, 2006. Staff review of the plans and specifications has determined that the project, as proposed, will comply with the Stormwater Regulations set forth in Title 15A NCAC 2H.1000. We are forwarding Permit No. SW7060902 dated November 22, 2006 to the NC Department of Transportation for the proposed improvements and bridge replacement to SR 1222 over Tulls Creek in Currituck County.

This permit shall be effective from the date of issuance until rescinded and shall be subject to the conditions and limitations as specified therein.

If any parts, requirements, or limitations contained in this permit are unacceptable, you have the right to request an adjudicatory hearing upon written request within thirty (30) days following receipt of this permit. This request must be in the form of a written petition, conforming to Chapter 150B of the North Carolina General Statutes, and filed with the Office of Administrative Hearings, 6714 Mail Service Center, Raleigh, NC 27699-6714. Unless such demands are made this permit shall be final and binding.

If you have any questions, or need additional information concerning this matter, please contact Roger Thorpe or me at (252) 946-6481.

Sincerely,

Al Hodge, Regional Supervisor
Surface Water Protection Section
Washington Regional Office

cc: Washington Regional Office
Central Files

North Carolina Division of Water Quality
943 Washington Square Mall
Washington, NC 27889

Internet: www.ncwaterquality.org
Phone (252) 946-6481
Fax (252) 946-9215

NCDOT Project 32773.1.1 (B-2950) Date: June 1, 2006
Currituck County
Bridge No. 4 over Tulls Creek on SR 1222 (Tulls Creek Road)
Hydraulics Project Manager: Andrew Nottingham, PE

STORMWATER MANAGEMENT PLAN

PROJECT DESCRIPTION

The NC Department of Transportation proposes to replace bridge no. 4 with a bridge. SR 1222 is a rural minor collector and runs more or less east to west in the vicinity of the project. The existing roadway cross section consists of an 18' wide two-lane paved roadway with shoulders that vary from one to four feet wide. The existing bridge is 236' long. It consists of seven spans, the longest of which is 35'. The proposed bridge will be 300' long, consisting of 5 spans at 60' each. The span arrangement will allow for top-down construction.

To obtain a better vertical site distance crossing the bridge, approximately 4' of fill will be required along 250'of the roadway just west of the bridge. Similarly, approximately 3' of fill will be required along 300' of the roadway just east of the bridge. A retaining wall will be used to contain the west roadway approach fill to the point where it ties back to the existing grade. The crest of the roadway vertical curve is approximately midway of the bridge.

There will be no deck drains on the proposed bridge. Storm water will be collected from the west end of the bridge deck by a curb and gutter system with curb inlets. Curb and gutter is required because of the retaining wall. The drainage system will then carry storm water approximately 420 feet from the end of the bridge along the roadway to an outlet in a coastal marsh. The outlet velocity of the 18" pipe will be 1.5 feet per second, and a rip rap pad will be used to prevent scour.

Storm water will be collected from the east end of the bridge deck by a curb and gutter system with curb inlets. Curb and gutter is required on the east end of the bridge to prevent erosion of the fill slopes and roadway shoulder. The drainage system will then carry storm water approximately 200 feet from the end of the bridge along the roadway to an outlet in a constructed grass swale. The outlet velocity of the 18" pipe will be 1.2 feet per second, and a rip rap pad will be used to prevent scour.

The project encompasses 6.0 acres inside the highway right of way. The existing impervious area is 1.29 acres and the proposed impervious area is 1.91 acres. The existing bridge deck area is 6610 square feet and the proposed bridge deck area is 9900 square feet.

Beyond the curb and gutter system west of the bridge, the proposed roadway will consist of a two-lane paved roadway section with grassed shoulders and fill slopes. Beyond the curb and gutter system east of the bridge, the proposed roadway will consist of a two-lane paved roadway section with grassed shoulders and ditches. An existing cross-pipe will be replaced approximately 300' east of the bridge.

Traffic will be detoured off-site during the bridge construction.

NCDOT Project 32773.1.1 (B-2950) Date: June 1, 2006
Currituck County
Bridge No. 4 over Tulls Creek on SR 1222 (Tulls Creek Road)
Hydraulics Project Manager: Andrew Nottingham, PE

ENVIRONMENTAL DESCRIPTION

The surrounding land use consists of marshland, rural, residential, and agricultural. The project area is located in the Pasquotank River Basin where Tulls Creek enters Tull Bay. The surrounding terrain is generally flat to very flat. The natural ground elevation at the site is approximately 3' NGVD. The water depth at the site is approximately 15' in the center of the channel. The best usage classification is Class B, Sw, and Primary Nursery area. No watershed critical areas, HQW, or ORW waters are located within one mile of the project site.

BEST MANAGEMENT PRACTICES

- The bridge replacement will be accomplished with a road closure that will minimize construction time and on-site impacts.
- The roadway typical section is a fill section with slopes no steeper than 3:1.
- To prevent erosion, a curb and gutter system will be used on the west approach along the retaining wall section. Similarly, curb and gutter will be used along the east approach to prevent erosion of the shoulder and fill slope due to the steep banking of the pavement in the curved roadway section.
- There will be no deck drains on the proposed bridge.
- Storm water runoff from the bridge deck will be directed to a coastal marsh on the west end of the bridge and to a grass swale on the east end of the bridge .
- Placement of rip rap around the east bridge abutment and the retaining wall around the west abutment will control erosion from storm event scour.

U.S. Department of Transportation
United States Coast Guard

Commander
United States Coast Guard
Atlantic Area

Portsmouth, Va. 23704-5004
Staff Symbol: Aowb
Phone: (757)398-6587

16590
July 7, 1998

Mr. Richard Davis, P.E.
Planning and Environmental Branch
N.C. Division of Highways
P.O. Box 25201
Raleigh, North Carolina 27611

Dear Mr. Davis:

This is in response to your letter dated June 5, 1998 requesting the Coast Guard to review the proposed projects to replace ten bridges of which five are over waterways. The following are the five bridge numbers and their locations: #49 White Oak River; #4 Tull Creek; #24 Tar River; #17 Dan River; and #64 Mayo River.

The Coast Guard Authorization Act of 1982 exempts bridge projects from Coast Guard bridge permits when the bridge project crosses nontidal waters which are not used, susceptible to use in their natural condition, or susceptible to use by reasonable improvement as a means to transport interstate commerce. Ms. Pam Williams confirmed such conditions in a telephone conversation on June 30, 1998. Due to this, the bridge projects on the Dan and Mayo Rivers are exempt, and will not require Coast Guard Bridge Permits.

Tull Creek, and the White Oak and Tar Rivers are subject to tidal influence and thus considered legally navigable for Bridge Administration Purposes. However, these waterways also meet the criteria for advance approval waterways outlined in Title 33, Code of Federal Regulations, Section 115.70. Advance approval waterways are those that are navigable in law, but not actually navigated by other than small boats. The Commandant of the Coast Guard has given his advance approval to the construction of bridges across such waterways; therefore, an individual permit will not be required for these three projects.

The fact that Coast Guard permits are not required does not relieve you of the responsibility for compliance with the requirements of any other Federal, State, or local agency who may have jurisdiction over any aspect of the project.

Sincerely,

ANN B. DEATON
Chief, Bridge Administration Section
By direction of the Commander
Fifth Coast Guard District

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Raleigh Field Office
Post Office Box 33726
Raleigh, North Carolina 27636-3726

June 9, 2003

Dr. Gregory J. Thorpe
North Carolina Department of Transportation
Project Development and Environmental Analysis
1548 Mail Service Center
Raleigh, North Carolina 27699-1548

Dear Dr. Thorpe:

This letter is in response to your letter of May 29, 2003, which provided the U.S. Fish and Wildlife Service (Service) with the biological conclusion of the North Carolina Department of Transportation (NCDOT) that the replacement of Bridge No. 4 on SR 1222 over Tulls Creek in Currituck County (B-2950) is not likely to adversely affect the federally-threatened bald eagle (*Haliaeetus leucocephalus*). These comments are provided in accordance with section 7 of the Endangered Species Act (ESA) of 1973, as amended (16 U.S.C. 1531-1543).

According to the information you submitted, a survey was conducted on March 7, 2003 by canoe and by driving accessible roads within the area. The primary zone (1500 feet from the project area) was surveyed both upstream and downstream of the existing bridge. In addition, five aerial sweeps were made over the bridge site and surrounding area on May 21, 2003 from a small plane at an altitude of 300 to 400 feet. No eagles or eagle nests were observed during either survey.

Based on the negative survey results, the Service concurs with your conclusion that the proposed bridge replacement is not likely to adversely affect the bald eagle. We believe that the requirements of section 7 (a)(2) of the ESA have been satisfied. We remind you that obligations under section 7 consultation must be reconsidered if: (1) new information reveals impacts of this identified action that may affect listed species or critical habitat in a manner not previously considered in this review; (2) this action is subsequently modified in a manner that was not considered in this review; or (3) a new species is listed or critical habitat determined that may be affected by this identified action.

The Service appreciates the opportunity to review this project. If you have any questions regarding our response, please contact Mr. Gary Jordan at (919) 856-4520 (Ext. 32).

Sincerely,

Garland B. Pardue

Garland B. Pardue, Ph.D.
Ecological Services Supervisor

Bill Biddlecome, USACE, Washington, NC
Dave Franklin, USACE, Wilmington, NC
John Hennessy, NCDWQ, Raleigh, NC
Travis Wilson, NCWRC, Creedmore, NC
Chris Militscher, USEPA, Raleigh, NC

SR 1222

Currituck County

Bridge No. 4 Over Tull Creek

Federal-Aid Project No. BRZ-1222(2)

State Project No. 8.2040301

T.I.P. No. B-2950

CATEGORICAL EXCLUSION

UNITED STATES DEPARTMENT OF TRANSPORTATION

FEDERAL HIGHWAY ADMINISTRATION

AND

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

DIVISION OF HIGHWAYS

APPROVED:

07-01-03
DATE

for Gregory J. Thorpe, Ph.D., Environmental Management Director
Project Development and Environmental
Analysis Branch, NCDOT

07/07/03
DATE

for John F. Sullivan, III
Division Administrator, FHWA

SR 1222

Currituck County

Bridge No. 4 Over Tull Creek

Federal-Aid Project No. BRZ-1222(2)

State Project No. 8.2040301

T.I.P. No. B-2950

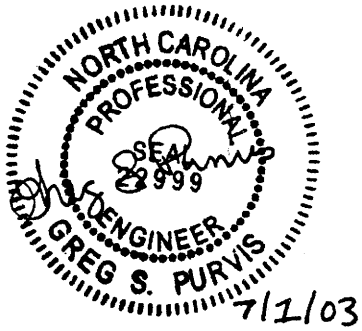
CATEGORICAL EXCLUSION

July 2003

Document Prepared by:
Wang Engineering Company, Inc.

Greg S. Purvis, P.E.
Project Manager

James Wang, Ph.D., P.E.
Principal – in – Charge



For the North Carolina Department of Transportation

John Wadsworth, P.E.
Project Manager
Consultant Engineering Unit

PROJECT COMMITMENTS

Currituck County
SR 1222
Bridge No. 4 Over Tull Creek
Federal-Aid Project No. BRZ-1222(2)
State Project No. 8.2040301
T.I.P. No. B-2950

In addition to the standard Nationwide Permit No. 23 Conditions, the General Nationwide Permit Conditions, Section 404 Only Conditions, Regional Conditions, State Consistency Conditions, NCDOT's Guidelines for Best Management Practices for Bridge Demolition and Removal, NCDOT's Guidelines for Best Management Practices for the Protection of Surface Waters, Design Standards in Sensitive Watersheds (15A NCAC 04B .0024) General Certification Conditions, and Section 401 Conditions of Certification, the following special commitments have been agreed to by NCDOT:

Division Engineer, Project Development & Environmental Analysis Branch, and Roadway Design Unit

Bridge Demolition will be addressed at the time of the permit application.

Tull Creek is designated as an Inland Primary Nursery Area. No in-water work will occur from February 15 to September 30, as requested in the North Carolina Department of Environment and Natural Resources (NCDENR) memorandum dated June 21, 1999.

The Stream Crossing Guidelines for Anadromous Fish Passage will be implemented, as applicable.

If any trees will be removed, bald eagle nest surveys will be performed as requested by the North Carolina Wildlife Resource Commission (NCWRC) in a memorandum dated July 27, 1998.

Construction activities will adhere to the guidelines outlined in the latest edition of Precautions For Construction In Areas Which May Be Used By The West Indian Manatee In North Carolina.

If the loggerhead sea turtle is observed in the project during construction, activities will cease until the turtle leaves.

The bridge will be constructed utilizing top-down construction.

A retaining wall will be utilized in the northeast quadrant to protect the existing canal from impacts.

Rock plate will be utilized on the slope in the southwest quadrant adjacent to the canal to minimize impacts.

Jetting will not be allowed as a construction method.

3:1 side slopes will be utilized due to the fact that they will be easier to maintain stability of the slope.

Roadside Environmental Unit

All restored areas will be planted with endemic vegetation, including trees, if appropriate as requested in the Corps of Engineers letter dated October 12, 1999.

Hydraulics Unit

Bridge deck drains will not be allowed to discharge directly into the water.

The Stream Crossing Guidelines for Anadromous Fish Passage will be implemented, as applicable.

Currituck County
SR 1222
Bridge No. 4 Over Tull Creek
Federal-Aid Project No. BRZ-1222(2)
State Project No. 8.2040301
T.I.P. No. B-2950

INTRODUCTION: The replacement of Bridge No. 4 is included in the 2004-2010 North Carolina Department of Transportation (NCDOT) Transportation Improvement Program (TIP) and the Federal-Aid Bridge Replacement Program. The location is shown in Figure 1. No substantial environmental impacts are anticipated. The project is classified as a Federal "Categorical Exclusion."

I. PURPOSE AND NEED

Bridge Maintenance Unit records indicate the bridge has a sufficiency rating of 18.4 out of a possible 100 for a new structure. The bridge is considered functionally obsolete and structurally deficient. The replacement of an inadequate structure will result in safer and more efficient traffic operations.

II. EXISTING CONDITIONS

SR 1222 (Tulls Creek Road) is classified as a rural minor collector. Land use in the project area is predominantly marshland, rural, residential and agricultural. Private residences and agricultural fields are located in the northeast and southeast quadrants of the study area. Undeveloped coastal marshes lie on both sides of the north end of the bridge. There is a marina located approximately 800 feet (240 meters) downstream of the existing bridge.

Bridge No. 4 was constructed in 1970. The existing structure is 236 feet (71.9 meters) in length, consisting of seven spans with the maximum span at approximately 35 feet (10.5 meters). The clear roadway width is 28 feet (8.4 meters), providing two ten-foot (three meter) travel lanes, with four-foot (1.2 meter) shoulders. The superstructure consists of seven spans of steel plank flooring on I-beams with an asphalt-wearing surface. The end bents are timber abutment walls and the interior bents are timber caps on timber piles. The center bent has a double steel crutch on both sides. The structure over Tull Creek provides approximately 23 feet (6.9 meters) of clearance above the streambed and approximately nine feet (2.7 meters) of clearance to the water surface. The project area is under tidal influence and fluctuates approximately one to two feet (0.3 to 0.6 meters) between low and high tides. The posted weight limit is 15 tons (13.6 metric tons) for single vehicles and truck-tractors, semi-trailers.

The existing bridge and west approach on SR 1222 is on a horizontal tangent. The east approach is in an 8.5-degree (207.5 meter radius) curve. SR 1222 consists of two ten-foot (three meter) travel lanes with six-foot (1.8 meter) grassed shoulders. The posted speed limit is 45 miles per hour (mph) (75 kilometers per hour [km/h]).

The projected traffic volumes are 2,660 vehicles per day (vpd) for the construction year 2003 and 6,000 vpd for the design year 2025. The volumes include two percent truck-tractor semi-trailer (TTST) and three percent dual-tired vehicles (DT).

This section of SR 1222 does not correspond to a bicycle TIP request nor is it a designated bicycle route. However, SR 1222 has been identified as a desired bike route in the Currituck County's land use plan.

There is a private driveway at the northwest end of the bridge providing access to a local marina. Telephone and power lines cross the stream parallel to the roadway on the north side of the structure. There is a county owned water line along the south side of the bridge, running parallel to the roadway, and buried on the bottom of the creek. Utility impacts are anticipated to be low.

Four (4) accidents were reported in the vicinity of the bridge during the period from February 1, 1999 to January 31, 2002.

Six (6) Currituck County school busses cross Bridge No. 4 twice daily.

III. ALTERNATIVES

A. Project Description

The proposed structure will provide a 24-foot (7.2 meter) travel-way, with four-foot (1.2 meter) shoulders for a clear roadway width of 32 feet (9.6 meters). The design speed will be 50 mph [80 kilometers per hour (km/h)] (See Figure 4).

The proposed approach roadway will consist of a 24-foot (7.2 meter) travel-way with eight-foot (2.4 meter) shoulders, including four-foot (1.2 meter) paved shoulders (See Figure 4).

Based on a preliminary hydraulic analysis, Bridge No. 4 will be replaced with a spanning structure with a spill through design and placed approximately 90-degrees to Tull Creek. The proposed bridge will maintain the existing navigational clearance. The length and opening size of the proposed bridge may increase or decrease as necessary to accommodate peak flows as determined from a more detailed hydraulic analysis, to be performed during the final design phase of the project. Bridge deck drains will not be allowed to discharge directly into the water. Bridge deck drain system will start approximately 50 feet (15 meters) back from the water on both sides of the bridge.

B. Build Alternatives

Two build alternatives studied for replacing the existing bridge are described below.

Alternate F1 (Preferred) involves replacing the bridge on new alignment downstream (north) of the existing bridge with a bridge. The proposed structure is approximately 965 feet (294.1 meters) in length, tangent, and does not include a vertical crest on the bridge. The approach curve to the bridge from the west is 2.5-degrees (730 meter radius) and from the east is 7.5-degrees (235 meter radius). The length of the approach roadway will be approximately 2233 feet (681.0 meters). During construction of the structure, traffic will be maintained on the existing structure. During construction of the approaches, traffic will be routed off-site. Alternate F1 does not provide a driveway access to the marina. See figure 2 for Alternate F1.

Alternate F2 involves replacing the bridge on new alignment downstream (north) of the existing bridge with a bridge. The proposed structure is approximately 965 feet (294.1 meters) in length, tangent, and does not include a vertical crest on the bridge. The approach curve to the bridge from the west is 2.5-degrees (730 meter radius) and from the east is 7.5-degrees (235 meter radius). The length of the approach roadway will be approximately 2233 feet (681.0 meters). During construction of the structure, traffic will be maintained on the existing structure. During construction of the approaches, traffic will be routed off-site. Alternate F2 provides a driveway access to the marina. Alternate F2 was not chosen because of higher environmental impacts. See figure 2A for Alternate F2.

The proposed detour route along SR 1214 (Guinea Road), NC 168, and SR 1232 (Poyner's Road) is approximately 13.4 miles (21.4 kilometers) in length. A road user analysis was performed based on 2,300 vehicles per day (vpd) for construction year 2003 and an average of 13.4 miles (21.4 kilometers) of indirect travel. The cost of additional travel will be approximately $3.7 million dollars during a twelve-month construction period.

C. Alternatives Eliminated From Further Study

Alternate A involves replacing the bridge along the existing alignment with an on-site detour north of the existing bridge. Traffic will be maintained on the temporary on-site detour during construction. This alternate was eliminated because of its increased environmental impacts and construction period.

Alternate B1 and **Alternate B2** involve replacing the bridge along the existing alignment with a new structure. To avoid closing the canal on the southwest quadrant with proposed fill, there will be a slight shift in the alignment towards the north. The canal in the northeast quadrant has minor fill. During construction, traffic will be maintained by an off-site detour. The proposed bridge is approximately 300 feet (90 meters) in length, tangent and on a vertical crest. The approach curve from the east is 7.5-degrees (235 meter radius).

Alternate B1 provides a driveway access to the marina perpendicular to SR 1222.

Alternate B2 provides a driveway access to the marina parallel to SR 1222.

Alternate B1 and **Alternate B2** were eliminated because of the unacceptability of the off-site detour for an extended time period and excessive road user costs to the public.

Alternate C1 and **Alternate C2** involve replacing the bridge on a new alignment downstream (north) of the existing bridge with a bridge. During construction of the structure, traffic will be maintained on the existing structure. During construction of the approaches, traffic will be routed off-site. The canal on the northeast quadrant is completely filled. The proposed bridge is approximately 420 feet (126 meters) in length, tangent and on a vertical crest. The approach curve to the bridge from the east is 5.5-degrees (322.5 meter radius).

Alternate C1 provides driveway access to the marina perpendicular to SR 1222.

Alternate C2 provides driveway access provided to the marina parallel to SR 1222.

Alternate C1 and **Alternate C2** were eliminated due to the impacts of filling-in of the canals. The closing or filling of the adjacent canals is considered unacceptable due to their functions as a primary nursery area and high quality fish habitat.

Alternate D1 and **Alternate D2** involve replacing the bridge on new alignment downstream (north) of the existing bridge with a bridge. During construction of the structure, traffic will be maintained on the existing structure. During construction of the approaches, traffic will be routed off-site. The canal on the northeast quadrant is completely filled. The proposed bridge is approximately 900 feet (270 meters) in length, tangent and no vertical crest on the bridge. The approach curve to the bridge from the east is 5.5-degrees (322.5 meters in radius).

Alternate D1 provides no access to the marina.

Alternate D2 provides a driveway access to the marina.

Alternate D1 and **Alternate D2** were eliminated due to the impacts of filling-in of the canals. The closing or filling of the adjacent canals is considered unacceptable due to their functions as a primary nursery area and high quality fish habitat.

Alternate E involves replacing the bridge on existing alignment with a bridge. The proposed bridge is approximately 1200 feet (360 meters) in length. Approximately 600 feet (180 meters) of the bridge will be in a three degree (585 meter radius) curve on the east end with a vertical crest requiring prestressed girders. The remaining structure will be tangent with no vertical crest. Minor fill is proposed in the northeast canal and the southwest canal. During construction, traffic will be maintained by an off-site detour. No access is provided to the marina. Alternate E was eliminated because of the length of the off-site detour and the unacceptable road user costs to the public that use the road.

The **"Do-Nothing" Alternative** will eventually necessitate closure of the bridge. This is not desirable due to the traffic service provided by SR 1222.

Investigation of the existing structure by the Bridge Maintenance Unit indicates the rehabilitation of the old bridge is not feasible due to its age and deteriorated condition.

D. Preferred Alternate

Alternate F1, replacing the bridge on new alignment downstream (north) of the existing bridge with a bridge was selected as the preferred alternate because it minimizes environmental impacts and restores high quality wetlands.

The NEPA/404 Merger Team concurred with Alternate F1 as the preferred alternative and as the least environmentally damaging, practical alternative (Appendix B).

For avoidance and minimization of adverse impacts, the following measures will be accomplished:

1. Anticipated impacts to wetlands minimized to approximately 1.57 acres (0.635 hectare) by replacing 236-foot (71.9-meter) bridge with a 965-foot (294.1 meter) bridge.
2. Restoration of wetlands of approximately 1.72 acres (0.700 hectare) accomplished by restoring the old roadway (SR 1222) and old marina roadway to natural ground and reseeding/planting with natural vegetation. Enhancement mitigation credits of 2.57 acres (1.04 hectare) for the area extending outward from the lifted roadway. The area of enhancement will be calculated as a ¼ circle, the radius of which is the length of causeway removed.
3. The bridge will be constructed utilizing top-down construction.
4. A retaining wall will be utilized in the northeast quadrant to protect the existing canal from impacts.
5. Rock plate will be utilized on the slope in the southwest quadrant adjacent to the canal to minimize impacts.
6. The proposed bridge will maintain the existing navigational clearance.
7. Jetting will not be allowed as a construction method.
8. 3:1 side slopes will be utilized due to the fact that they will be easier to maintain stability of the slope.
9. An in-water construction moratorium will be implemented from February 15 thru September 30.
10. Construction activities will adhere to the guidelines outlined in the latest edition of Precautions For Construction In Areas Which May Be Used By The West Indian Manatee In North Carolina.

11. Bridge deck drains will not be allowed to discharge directly into the water.

E. Anticipated Design Exceptions

A design exception for the horizontal stopping sight distance on the roadway approaches to Bridge No. 4 will be required. The posted speed limit is 45 mph (70 km/h). The proposed stopping sight distance meets the AASHTO (American Association of State Highway Transportation Officials) minimum required for a design speed of 35 mph (60 km/h). An advisory speed limit of 35 mph (60 km/h) will be posted on the roadway approaches to proposed Bridge No. 4.

IV. ESTIMATED COST

The estimated costs, based on current prices, are as follows:

	Alternate F1 (Preferred)	Alternate F2
Structure Removal (existing)	**$ 52,900**	$ 52,900
Structure (proposed)	**2,162,000**	2,161,600
Detour Structure and Approaches	**0**	0
Roadway Approaches	**1,166,400**	1,232,600
Miscellaneous and Mobilization	**646,700**	669,900
Engineering and Contingencies	**622,000**	633,000
ROW/Const. Easements/Utilities:	**1,050,000**	650,000
TOTAL	**$ 5,700,000**	$ 5,400,000

The estimated cost, based on current prices, is $5,700,000 including $1,050,000 for right-of-way and $4,650,000 for construction. The estimated cost of the project, as shown in the 2004-2010 Transportation Improvement Program (TIP), is $5,045,000 including $645,000 for right-of-way and $4,400,000 for construction.

V. NATURAL RESOURCES

A. Methodology

Informational sources used to prepare this report include: USGS Currituck, NC 7.5 minute series topographic map (1982); Soil Conservation Service (SCS) Soil Survey of Currituck County, NC (1982); United States Fish and Wildlife Service (USFWS) National Wetlands Inventory map (Currituck, N. C., 1990); USFWS Endangered, Threatened, and Candidate Species and Federal Species of Concern in North Carolina (May 13, 1999); North Carolina Natural Heritage Program (NCNHP) computer database of rare species and unique habitats (September, 1998); and NCDOT aerial photography of the study area. Research using these resources was conducted prior to the field investigation.

A general field survey was conducted along the proposed project corridor on March 12, 1998. Plant communities and their associated wildlife were identified using a variety of observation techniques including active searching, and identifying characteristic signs of wildlife such as sounds, tracks, scats, and burrows.

Quantitative impact calculations were based on the construction limits for each individual alternate, the width of the replacement structure, the width of the creek, and the length of the project approaches.

B. Physiography And Soils

The proposed project lies within the Coastal Plain Physiographic Province, which includes all parts of North Carolina east of the Fall Line. This province typically consists of unconsolidated sands, silts, clays, and peats. The topography of the project vicinity can be characterized as nearly level, with elevations ranging from 3.3 to 6.6 feet (one to two meters) above mean sea level (msl). Current land use in the project vicinity is either undeveloped, rural residential, or agricultural.

According to the soil survey for Currituck County (USDA-SCS, 1982), the general soil-mapping unit for the project area is Currituck. The soils in this mapping unit are nearly level and very poorly drained, with a mucky surface layer and sandy underlying material. Field conditions generally conform to the soil survey mapping in the project area.

The predominant soil series found in the project area is Currituck mucky peat. It is adjacent to both sides of Tull Creek on the north side of the bridge and also occurs to the south of SR 1222 adjacent to the northwest approach. The soil survey characterizes this soil as very poorly drained, with moderate to moderately rapid permeability. The surface layer is highly decomposed organic matter and the seasonal high water table is at or near the surface. Currituck mucky peat is listed as a hydric soil (USDA-SCS, 1991).

Augusta fine sandy loam is found within the project area on both sides of the southeast approach. The soil survey describes this soil as nearly level and somewhat poorly drained. Permeability is moderate and the seasonal high water table is within one to two feet (0.3 to 0.6 meters) of the surface. Altavista, Tomotley, and Dragston soils are noted as inclusions within the Augusta mapping unit. Tomotley is listed as hydric, however the other two inclusions, as well as the Augusta, are not on the hydric soils list. The survey characterizes Tomotley fine sandy loam as poorly drained, occurring on broad flats and in slight depressions. Permeability is moderate to moderately slow and the seasonal high water table is at or near the surface. Foundation test borings will be performed during the final design phase of the project.

C. Water Resources

1. Waters Impacted

The proposed project falls within the Pasquotank River Basin, with a subbasin designation of PAS54 (03-01-54) and a federal hydrologic unit designation of Pasquotank-03010205.

2. Water Resource Characteristics

Tull Creek is a low flowing, coastal creek, which discharges into Tull Bay approximately 0.50 miles (0.80 kilometers) northeast of the project study area. Within the project study area of Bridge No. 4, Tull Creek flows east to northeast and is approximately 200 feet (60 meters) wide. Tull Creek and SR 1222 cross at this location perpendicular to each other and the bridge has a slight curve on the southern end. On the day of the field investigation the creek had deep, tannin tea color and a low flow. The depth of the creek along the riverbanks ranged from two to four feet (0.6 to 1.2 meters). The creekbank substrate near the shore consisted of fine silts and sands. Tull Creek is tidal but also has some primarily wind driven tidal influence as well and is

considered fresh water. Tull Creek has a **Class B, Sw** rating from the North Carolina Department of Environment and Natural Resources (NCDENR), Division of Water Quality (DWQ). The **Class B** rating indicates Tull Creek is protected for primary recreation, aquatic life propagation and survival, fishing, wildlife and secondary recreation and agriculture. The secondary classification of **Sw** indicates these are waters, which have low velocities and other natural characteristics, which are different from adjacent streams. The NCDENR Classification Date and Index for this portion of the creek are 7/1/73, 30-1-2-2-5-1.

Point-source discharges located throughout North Carolina are permitted through the National Pollutant Discharge Elimination System (NPDES) program. A search within the project vicinity 0.5 miles (0.80 kilometers) was conducted for NPDES permitted discharges and none were identified.

Non-point source refers to runoff that enters surface waters through storm water flow or no defined point of discharge. In the project study area, storm water runoff from SR 1222 may cause water quality degradation as well as surface runoff from the boat ramp area in the northeast quadrant of the project study area. Residential areas are located in the southwest and southeast quadrants of the project study area and have the potential to generate storm water runoff. Agricultural areas south of the bridge could also contribute to runoff that may enter the creek.

Benthic macroinvertebrates, or benthos, are organisms that live in and on the bottom substrates of rivers and streams. The DWQ uses benthos data as a tool to monitor water quality since benthic macroinvertebrates are sensitive to subtle changes in water quality. Formerly, the DWQ used the Benthic Macroinvertebrate Ambient Network (BMAN) as a primary tool for water quality assessment. This method was phased out approximately six years ago and converted to a basinwide assessment sampling protocol. Each river basin in the state is sampled once every five years and the number of sampling stations has been increased within each basin. Each basin is sampled for biological, chemical and physical data.

The DWQ includes the North Carolina Index of Biotic Integrity (NCIBI) as another method to determine general water quality in the basinwide sampling. The NCIBI is a modification of the Index of Biotic Integrity initially proposed by Karr (1981) and Karr, *et. al.* (1986). The IBI method was developed for assessing a stream's biological integrity by examining the structure and health of its fish community. The Index incorporates information about species richness and composition, trophic composition, fish abundance, and fish condition. The NCIBI summarizes the effects of all classes of factors influencing aquatic faunal communities (water quality, energy source, habitat quality, flow regime, and biotic interactions).

According to DWQ, the Division has no sampling stations located on SR 1222 at Bridge No. 4 on Tull Creek. There are no sampling stations in the immediate area that could be referred to for specific water quality data.

3. Anticipated Impacts to Water Resources

a) General Impacts

Neither High Quality Waters (**HQW**), Water Supplies (**WS-I**: undeveloped watershed, or **WS-II**: predominately undeveloped watersheds) nor Outstanding Resource Waters (**ORW**) occur within one miles (1.6 kilometers) of the project study area.

Short-term impacts to water quality can be anticipated from construction-related activities, which may increase sedimentation and turbidity. The DWQ request strict adherence to North Carolina regulations entitled "Design Standards in Sensitive Watersheds". Long-term impacts to water resources are not expected as a result of proposed improvements.

b) Impacts Related to Bridge Demolition and Removal

In order to protect the water quality and aquatic life in the area affected by this project, the NCDOT and all potential contractors should follow appropriate guidelines for bridge demolition and removal. These guidelines are presented in NCDOT's Best Management Practices for Bridge Demolition and Removal (BMP-BDR). Guidelines followed for bridge demolition and removal are in addition to those implemented for Best Management Practices for the Protection of Surface Waters. Bridge No. 4 is composed completely of timber and steel. There is little potential for components of the bridge to be dropped into "waters of the United States." Therefore, no temporary fill is expected to result from removal of the existing bridge however, in the worst case scenario 125 cy (96 cm) of material could be dropped into the water.

Under the guidelines presented in the documents noted in the first paragraph of this section, work done in the water for this project will fall under Case 2, which states that no work will be performed in the water during moratorium periods (February 15 to September 30) associated with fish migration, spawning, and larval recruitment into nursery areas. This conclusion is based upon the classification of the waters within the project area and vicinity, the Stream Crossing Guidelines for Anadramous Fish Passage, and comments received from the North Carolina Wildlife Resources Commission (NCWRC) and the Division of Marine Fisheries (DMF).

D. Biotic Resources

1. Plant Communities

Living systems described in the following sections include communities of associated plants and animals in the project area. These descriptions refer to the dominant flora and fauna in each community and the relationship of these biotic components. Classification of natural plant communities is based on the system used by the NCNHP (Schafale and Weakley 1990). Scientific nomenclature and common names (when applicable) are used for the plant and animal species described. Subsequent references to the same species include the common name only. Vascular plant names follow nomenclature found in Radford *et al.* (1968) unless more current information is available. Terrestrial and aquatic wildlife were determined through field observations, evaluation of habitat, and review of field guides and other documentation.

a) Man-Dominated Community

This highly disturbed community within the project area includes the road shoulders and residential properties located on both sides of SR 1222 on the southeast approach. The community also includes an abandoned building near the north-northwest corner of the bridge.

The road shoulders vary in width from approximately five to six feet (1.5 to 1.8 meters) and consist of either exposed soil or a mixture of maintained grass, plantain (*Plantago sp.*), clover (*Trifolium sp.*), dandelion (*Taraxacum officinale*), and wild onion (*Allium canadense*).

Maintained residential properties consist of planted grass and scattered trees such as loblolly pine (*Pinus taeda*), eastern redcedar (*Juniperus virginiana*), and sweet gum (*Liquidambar styraciflua*).

b) Tidal Freshwater Marsh

This community is located on both sides of the northwest approach to the bridge. Dominant vegetation includes cord grass (*Spartina cynosuroides*), needlerush (*Juncus sp.*), southern wild rice (*Zizaniopsis miliacea*), cattail (*Typha latifolia*) and widely scattered wax myrtle (*Myrica cerifera*) and bald cypress (*Taxodium distichum*).

2. Wildlife

Vegetation in the Man-Dominated community does not provide ample cover for many types of wildlife, however suitable habitat may be present for a few species. The barn owl (*Tyto alba*) could find nesting habitat in abandoned buildings and hunt for food in the adjacent marsh. The chimney swift (*Chaetura pelagica*) may nest in chimneys of abandoned buildings or nearby residences, and various other birds, which frequent residential areas may find suitable habitat here.

On the day of the site investigation, a red-winged blackbird (*Agelaius phoeniceus*) was observed in the Tidal Freshwater Marsh community. This bird may find nesting habitat among the cattails and feed on insects and seeds. An unidentified mouse/rat was observed, which could find nesting habitat among the thick vegetation. A common crow (*Corvus brachyrhynchos*) was noted flying over the marsh, as well as several sparrows (*Fringillidae* family). Many other species of wildlife may find shelter and food within the marsh community. The marsh area provides important primary nursery habitat for aquatic species as well.

3. Aquatic Communities

The aquatic community in the project study area exists within Tull Creek. On the western side of the bridge at the riverbank the shoreline grades into a large coastal marsh, which has a substrate of greasy, organic muck. The depth of surface water in the wetland areas ranged from zero to 12 inches (zero to 30 centimeters) on the day of the field investigation.

A cursory search of the shoreline was conducted for evidence of mussel and clam species. No signs of mollusks or bi-valves were discovered. Dip-netting along the creek bank yielded juvenile brown shrimp (*Penaeus aztecus*) and a small fish, which appeared to be a bluegill (*Lepomis macrochirus*).

According to the North Carolina Wildlife Resources Commission (NCWRC), the following freshwater fish species were found within Tull Creek during electrofishing sampling efforts during July, 1994 and August, 1995: redbreast sunfish (*Lepomis auritus*), chain pickerel (*Esox niger*), bluegill (*Lepomis macrochirus*), pumpkinseed (*Lepomis gibbosus*), yellow perch (*Perca flavescens*), white catfish (*Ameiurus catus*), common carp (*Cyprinus carpio*), brown bullhead (*Ameiurus nebulosus*) and largemouth bass (*Micropterus salmoides*). The following saltwater species were also found in Tull Creek at this location: striped bass (*Morone saxatilis*), white perch (*Morone americana*), red drum (*Sciaenops ocellatus*) and summer flounder (*Paralichthys dentatus*). The Tull Creek area represents a high quality fishery habitat and functions as a nursery

area for numerous freshwater and estuarine species. NCWRC and NCDENR, Division of Marine Fisheries (DMF) recommended no instream work from February 15 to September 30.

The DMF has no sampling stations at Tull Creek at Bridge No. 4. This area is designated as an inland primary nursery area for blueback herring (*Alosa aestivalis*) and alewife (*Alosa pseudoharengus*). This area is also used by estuary dependent species as well as resident and anadromous species.

4. Anticipated Impacts to Biotic Communities

Biotic community impacts resulting from project construction are addressed separately as terrestrial impacts and aquatic impacts. However, impacts to terrestrial communities, particularly in wetland areas and in locations exhibiting slopes, can result in the aquatic community receiving additional sediment loads as a consequence of erosion. It is important to note that construction impacts may not be restricted to the communities in which the construction activity occurs. Efforts will be made to ensure that no sediment leaves the construction site by adhering to the North Carolina regulations entitled **"Design Standards in Sensitive Watersheds"** throughout the design and construction of this project.

a) Terrestrial Communities

The Man-Dominated and Tidal Freshwater Marsh communities serve as nesting, foraging, and shelter habitat for fauna. The loss of portions of these habitats may result in the displacement and mortality of faunal species in residence. Individual mortalities are likely to occur to terrestrial animals from construction machinery used during clearing activities.

TABLE 1
ANTICIPATED IMPACTS TO
TERRESTRIAL AND AQUATIC COMMUNITIES

Bridge No. 4 Replacement Alternates	Man-Dominated Community Acres (ha)	Tidal Freshwater Marsh Acres (ha)	Aquatic Community Acres (ha)	Wetland Restoration Acres (ha)
Alternate F1	1.59 (0.64)	1.57 (0.64)	0.24 (0.097)	1.72 (0.70)
Alternate F2	1.59 (0.64)	2.13 (0.86)	0.24 (0.097)	1.67 (0.68)

NOTES:

- Existing roadways were not considered as part of the total impact where alternates overlapped the existing pavement and right-of-way.
- Calculations for impacts are based on the construction limits for each individual alternate.
- Any old roadways will be removed back to natural ground and reseeded/replanted, and temporary detours will be removed and restored.

Calculated impacts to terrestrial resources reflect the relative abundance of each community present in the study area. Project construction will result in clearing and degradation of portions of these communities. Impacts to terrestrial and aquatic communities are presented in Table 1.

b) Aquatic Communities

The aquatic community in the study area exists within Tull Creek. Both alternates have approximately equal permanent impacts to the aquatic community. The new replacement structure construction and approach work will likely increase sediment loads in the creek in the short term. Construction related sedimentation could be harmful to local populations of invertebrates that are an important part of the aquatic food chain. Construction activities also increase the possibility of potentially toxic substances, such as engine fluids and particulate rubber, entering the waterway and harming aquatic organisms.

The North Carolina regulations entitled "Design Standards in Sensitive Watersheds" will be strictly enforced to minimize potential adverse impacts due to this project. Since Tull Creek is an anadromous fish-spawning habitat, the NCDOT's Stream Crossing Guidelines for Anadromous Fish Passage will be adhered to for this project. The purpose of these guidelines is to provide guidance to the NCDOT to ensure that replacement of existing and new highway stream crossing structures will not impede the movement of anadromous fish.

E. Special Topics

1. "Waters of the United States": Jurisdictional Issues

Wetlands and surface waters fall under the broad category of "Waters of the United States" as defined in 33 CFR 328.3 and in accordance with provisions of Section 404 of the Clean Water Act (33 U.S.C. 1344). "Waters of the United States" are regulated by the United States Army Corps of Engineers (USACE).

Investigation into wetland occurrence in the project study area was conducted using methods of the 1987 Corps of Engineers Wetlands Delineation Manual. Wetland areas were found within two of the four quadrants of the project study area. On the western side of Bridge No. 4, a freshwater coastal marsh lines both sides of SR 1222 along the entire project length.

Alternate F1 will impact approximately 1.57 acres (0.64 ha) of wetlands. Since the project involves widening and raising the grade of the existing SR 1222, an alternate to completely avoid wetland involvement is not practicable. Anticipated surface water impacts fall under the jurisdiction of the USACE. These impacts include the crossing of Tull Creek and the canals that extends along the southern side of the western approach to the bridge and the northern side of the eastern approach.

2. Permits

a) Section 404 of the Clean Water Act

This project is being processed as a Categorical Exclusion (CE) under Federal Highway Administration (FHWA) guidelines. The USACE has made available Nationwide Permit (NWP) No. 23 (67FR 2019, 2095; January 15, 2002) for CEs due to minimal impacts expected with bridge construction. Activities under this permit are categorically excluded from environmental documentation because they are included within a category of activities that neither individually nor cumulatively have a significant effect on the human and natural environment. Activities authorized under nationwide permits must satisfy all terms and conditions of the particular permit.

b) Section 401 Water Quality Certification

DWQ has made available a General 401 Water Quality Certification for NWP No. 23. However, authorization for jurisdictional area impacts through use of this permit will require written notice to DWQ. In the event that NWP No. 23 will not suffice, minor impacts attributed to bridging and associated approach improvements are expected to qualify under General Bridge Permit 031 issued by the Wilmington USACE District. Notification to the Wilmington USACE office is required if this general permit is utilized.

c) Bridge Demolition and Removal

Bridge No. 4 is composed completely of timber and steel. There is little potential for components of the bridge to be dropped into "waters of the United States." However, if no practical alternative exists to remove the current bridge other than to drop it into the water, prior to removal of debris off-site, fill related to demolition procedures will need to be considered during the permitting process. A worst-case scenario should be assumed with the understanding that if there is any other practical method available, the bridge will not be dropped into the water. Permitting will be coordinated such that any permit needed for bridge construction will also address issues related to bridge demolition.

d) Coast Guard

The Coast Guard Authorization Act of 1982 exempts bridge projects from Coast Guard bridge permits when the bridge project crosses non-tidal waters which are not used, susceptible to use in their natural condition, or susceptible to use by reasonable improvement as a means to transport interstate commerce. Tull Creek is subject to tidal influences and therefore is considered legally navigable for Bridge Administration Purposes. However, this waterway also meets the criteria for advance approval waterways outlined in Title 33, Code of Federal Regulations, Section 115.70. Advance approval waterways are those that are navigable in law, but not actually navigated by other than small boats. The Commandant of the Coast Guard has given his advance approval to the construction of bridges across such waterways; therefore, this bridge project is exempt, and will not require a Coast Guard Bridge Permit (Appendix).

e) Division of Coastal Management Consultation

This project is located within a county that is under the jurisdiction of the Coastal Area Management Act (CAMA). In a letter dated September 24, 1999, NCDENR, Division of Coastal Management staff stated, "In accordance with the Coastal Area Management Act, this project will require a major permit from the Division of Coastal Management prior to construction."

F. Rare And Protected Species

Some populations of plants and animals are in the process of decline due either to natural forces or their inability to coexist with humans. Rare and protected species listed for Currituck County, and any likely impacts to these species as a result of the proposed project construction, are discussed in the following sections.

1. Federally Protected Species

Plants and animals with federal classification of Endangered (E), Threatened (T), Proposed Endangered (PE), and Proposed Threatened (PT) are protected under provisions of Section 7 and Section 9 of the Endangered Species Act of 1973, as amended.

The USFWS lists seven federally protected species for Currituck County as of February 11, 2003. These species are listed in Table 2.

Table 2
Federally Protected Species For Currituck County
(February 11, 2003 FWS list)

Common Name	Scientific Name	Status
Seabeach Amaranth	*Amaranthus pumilus*	T
Loggerhead Sea Turtle	*Caretta caretta*	T
Piping Plover	*Charadrius melodus*	T
Leatherback Sea Turtle	*Dermochelys coriacea*	E
Red-Cockaded Woodpecker	*Picoides borealis*	E
West Indian Manatee	*Trichechus manatus****	E
Bald Eagle	*Haliaeetus leucocephalus*****	T

NOTES:

E Denotes Endangered (a species that is in danger of extinction throughout all or a significant portion of its range)

T Denotes Threatened (a species that is likely to become endangered within the foreseeable future throughout all or a significant portion of its range)

*** Date the species was last observed in the county is uncertain, possibly more than 50 years ago.

**** Proposed for delisting.

Seabeach Amaranth - Seabeach amaranth is an annual plant that grows on Atlantic Ocean beaches. The stems are fleshy and pink-red or reddish, with small rounded leaves. The leaves are clustered toward the tip of the stem and have a small notch at the rounded tip. Flowering occurs in July and continues until the death of the plant in late fall.

Seabeach amaranth is found on the upper beach and lower foredune of coastal barrier islands. The species is an effective sand binder, building dunes where it grows.

> **BIOLOGICAL CONCLUSION:** Suitable beach habitat does not exist in the project area for this species. The NCNHP database shows no recorded occurrences of the seabeach amaranth in the vicinity of the project. **NO EFFECT**

Loggerhead Sea Turtle - The loggerhead sea turtle is characterized by a large head with blunt jaws. The carapace and flippers are a reddish-brown color and the plastron is yellow. Adults grow to an average weight of about 200 pounds (90.7 kilograms), although some specimens may occasionally reach 1000 pounds (453.6 kilograms). The species feeds on mollusks, crustaceans, fish and other marine animals. The loggerhead is typically found at sea but may enter bays and lagoons. It nests on beaches in late spring and early summer.

BIOLOGICAL CONCLUSION: Nesting habitat does not exist for this species however it may occasionally be found feeding in Tull Creek. Due to the distance from an ocean inlet to the creek it is expected that this species may only rarely if ever occur in the project vicinity. If the loggerhead is observed in the project area during construction, activities will cease until the turtle leaves. **NO EFFECT**

Piping Plover - The piping plover is a small, stocky shorebird resembling a sandpiper. The plover is pale brownish above and white below. A black band across the forehead over the eye, and a black ring around the base of the neck are distinguishing marks in adults during the summer, but are obscure during the winter.

The piping plover nests on sand beaches, preferring sparsely vegetated areas that are slightly raised in elevation. The species is primarily coastal during the winter, choosing areas with expansive sand or mudflats for feeding that lie in close proximity to a sandy beach for roosting.

BIOLOGICAL CONCLUSION: Habitat does not exist in the project area for this species since no tidal flats or sandy beaches are in the area. A search of the NCNHP database showed no recorded occurrences of this species within the project vicinity. **NO EFFECT**

Leatherback Sea Turtle - The leatherback sea turtle is the largest of all sea turtles and is easily distinguished by its leathery skin. Adults generally weigh from 640 to 1300 pounds (290 to 590 kilograms). The neck and limbs are thick and feebly retractable. The triangular shaped carapace is covered with a layer of rubbery skin rather than horny shields. The head and neck are black or dark brown with a few white or yellow blotches.

The leatherback sea turtle is typically found at sea. It requires sandy nesting-beaches backed with vegetation and sloped sufficiently so that the crawl to dry sand is not too far. The preferred beaches are in close proximity to deep water and generally rough seas.

BIOLOGICAL CONCLUSION: There are no sandy beaches in the project vicinity for nesting and this species is typically found at sea. A search of the NCNHP database showed no recorded occurrences of this species within the project vicinity. **NO EFFECT**

Red-Cockaded Woodpecker - The red-cockaded woodpecker is a small seven to eight inches (18 to 20 centimeters) long bird with black and white horizontal stripes on its back, a black cap and a large white cheek patch. The male has a small red spot or "cockade" behind the eye.

The preferred nesting habitat of the red-cockaded woodpecker is open stands of pine with a minimum age of 60 to 120 years. Longleaf pine (*Pinus palustris*) is preferred for nesting; however other mature pines such as loblolly (*Pinus taeda*) may be utilized. Typical nesting areas, or territories, are pine stands of approximately 200 acres (81 hectares), however nesting has been reported in stands as small as 60 acres (24 hectares). Preferred foraging habitat is pine and pine-hardwood stands of 80 to 125 acres (32 to 50 hectares) with a minimum age of 30 years and a minimum diameter of ten inches (25 centimeters). The red-cockaded woodpecker utilizes these areas to forage for food sources such as ants, beetles, wood-boring insects, caterpillars, and seasonal wild fruit.

BIOLOGICAL CONCLUSION: There are no pine stands in the project area to support nesting or foraging activities for this species. The NCNHP database reports no recorded occurrences of the woodpecker in the vicinity of the project. **NO EFFECT**

West Indian Manatee - The West Indian manatee is a large aquatic mammal that reaches a length of approximately ten feet (three meters) and a weight of about 1,000 pounds (453.6 kilograms). The forelimbs are paddlelike and the tail is oval and horizontally flattened. The body is gray to brown and hair is mostly absent except for stiff whiskers on the upper lip.

This species inhabits coastal waters, estuaries, and freshwater streams bordering tropical and subtropical seas, but may enter waters near North Carolina in summer months. The manatee is herbivorous and feeds on aquatic vegetation, preferring grasses.

BIOLOGICAL CONCLUSION: Although it is possible that this species could migrate into the project area during summer months, occurrences will probably be very rare. The NCNHP database reports no recorded occurrence of the manatee in the vicinity of the project, however if one is sighted, construction activities will adhere to the guidelines outlined in Precautions For Construction In Areas Which May Be Used By The West Indian Manatee In North Carolina. **NO EFFECT**

Bald Eagle - The bald eagle is a large raptor with a wingspan greater than six feet (1.8 meters). Adult bald eagles are dark brown with a white head and tail. Immature eagles are brown with whitish mottling on the tail, belly, and wing linings. Bald eagles typically feed on fish but may also take birds and small mammals. In the Carolinas, nesting season extends from December through May (Potter *et al.* 1980). Bald eagles typically nest in tall, living trees in a conspicuous location near open water. Eagles forage over large bodies of water and utilize adjacent trees for perching (Hamel 1992). Disturbance activities within a primary zone extending 750 to 1500 feet (225 to 450 meters) from a nest tree are considered to result in unacceptable conditions for eagles (FWS 1987). The FWS recommends avoiding disturbance activities, including construction and tree-cutting within this primary zone. Within a secondary zone, extending from the primary zone boundary out to a distance of one mile (1.6 kilometers) from a nest tree, construction and land-clearing activities should be restricted to the non-nesting period. The FWS also recommends avoiding alteration of natural shorelines where bald eagles forage, and avoiding significant land-clearing activities within 1500 feet (450 meters) of known roosting sites.

BIOLOGICAL CONCLUSION: A survey was conducted on March 7, 2003. There were no bald eagles or nests observed during the survey. It appears that there are no nesting eagles within a mile of the bridge project, and the project is not likely to impact the bald eagle; however, because eagles may potentially nest in this area prior to bridge the biological conclusion for the bald eagle is "May Affect – Not Likely to Adversely Affect". The US Fish and Wildlife Service concurred with this conclusion in a letter dated June 9, 2003 (See Appendix). **MAY AFFECT – NOT LIKELY TO ADVERSELY AFFECT**

2. Federal Species of Concern

Federal Species of Concern (FSC) are not legally protected under the Endangered Species Act and are not subject to any of its provisions, including Section 7, until they are formally proposed or listed as Threatened of Endangered. Species designated as FSC are defined as taxa, which may or may not be listed in the future. These species were formerly Candidate 2 (C2) species or species under consideration for listing for which there is insufficient information to support listing. Some of these species are listed as Endangered, Threatened, or Special Concern by the NCNHP list of Rare Plant and Animal Species and are afforded state protection under the State Endangered Species Act and the North Carolina Plant Protection and Conservation Act of 1979. Table 3 provides the Federal Species of Concern listed for Currituck County and their state classifications. The NCNHP database shows no recorded occurrences of FSCs in the project area.

Table 3
(Federally Species of Concern Listed For Currituck County)
(February 11, 2003 FWS list)

Common Name	Scientific Name	NC Status	Habitat Present
Black Rail	*Laterallus Jamaicensis*	SR	Yes
Virginia Least Trillium	*Trillium Pusillum* var. *Virginianum*	E	No

NOTES:

E ~ Denotes Endangered (species which are afforded protection by state laws).

SR ~ Denotes Significantly Rare (species for which population monitoring and conservation action is recommended).

3. Summary of Anticipated Impacts

There is a slight possibility that the loggerhead sea turtle or the manatee may on rare occasion be found passing through the project area in Tull Creek. If a manatee is sighted construction activities will adhere to the guidelines outlined in Precautions For Construction In Areas Which May Be Used By The West Indian Manatee In North Carolina. Habitat is present for the black rail, which is an FSC. If the species is present, it will likely be in the Tidal Freshwater Marsh habitat. The NCNHP database reports no recorded occurrences of federal or state protected species or species of concern in the vicinity of the project.

VI. CULTURAL RESOURCES

A. Compliance Guidelines

This project is subject to compliance with Section 106 of the National Historic Preservation Act of 1966, as amended, and implemented by the Advisory Council on Historic Preservation's Regulations for Compliance with Section 106, codified as 36 CFR Part 800. Section 106 requires Federal agencies to take into account the effect of their undertakings (federally funded, licensed, or permitted projects) on properties listed in or eligible for inclusion in the National Register of Historic Places and to afford the Advisory Council on Historic Preservation a reasonable opportunity to comment on such undertakings.

B. Historic Architecture

A field survey of the Area of Potential Effects (APE) was conducted on January 21, 1998. All structures within the APE were photographed, and later reviewed by the State Historic Preservation Office (HPO). In a concurrence form dated May 28, 1998 and a memorandum dated June 18, 1998,

the State Historic Preservation Officer (SHPO) concurred that there are no historic architectural resources either listed in or eligible for listing in the National Register of Historic Places within the APE. A copy of the concurrence form and the memorandum are included in the Appendix.

C. Archaeology

The SHPO, in a memorandum dated June 18, 1998, recommended, "no archaeological investigation be conducted in connection with this project." A copy of the SHPO memorandum is included in the Appendix.

D. Relocation Impacts

The relocation and displacement of one business and one residence is an unavoidable impact of both alternatives. The number of residential and business displacements were determined by reviewing the approximate right-of-way limits of the projects, followed by a field review. The Relocation Report is included in the Appendix.

It is the policy of the North Carolina Department of Transportation to ensure that comparable replacement housing will be available prior to construction of state and federally-assisted projects. Furthermore, the North Carolina Board of Transportation has the following three programs to minimize the inconvenience of relocation: Relocation Assistance, Relocation Moving Payments, and Relocation Replacement Housing Payments or Rent Supplements.

With the Relocation Assistance Program, experienced staff of the Department of Transportation will be available to assist displacees with information such as availability and prices of homes, apartments, or businesses for sale or rent, and also financing or other housing programs.

The Relocation Moving Program, in general, provides for payment of actual moving expenses encountered in relocation. Where displacement will force an owner or tenant to purchase or rent property of higher cost or to lose a favorable financing arrangement in cases of ownership, the Relocation Replacement Housing Payments or Rent Supplement Program will compensate up to $22,500 to owners who are eligible and qualify, and up to $5,250 to tenants who are eligible and qualify.

The Relocation Program will be conducted in accordance with the Federal Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (Public Law 91-646) and the North Carolina Relocation Assistance Act (GS 133-5 through 133-18). The program is designed to provide assistance to displaced persons in locating and occupying a new place to live or in which to do business. At least one relocation officer is assigned to each highway project for this purpose.

The relocation officer will determine the needs of displaced families, individuals, businesses, non-profit organizations, and farm operations for relocation assistance advisory services without regard to race, color, religion, sex, or national origin. The NCDOT will schedule its work to allow ample time, prior to displacement, for negotiations and possession of replacement housing which meets decent, safe, and sanitary standards. The displacees are given at least a 90-day written notice after NCDOT purchases the property. Rent and sale prices of replacement housing offered will be within the financial means of the families and individuals displaced, and be reasonably accessible to their places of employment. The relocation officer will also assist owners of displaced businesses, non-profit organizations, and farm operations in searching for and moving to replacement property.

All residential tenant and owner occupants who may be displaces will receive an explanation regarding all available options, such as (1) purchase of replacement housing, (2) rental of replacement housing, either private or public, or (3) moving existing owner-occupant housing to another site (if

possible). The relocation officer will also supply information concerning other state and federal programs offering assistance to displaced persons and will provide other advisory services as needed in order to minimize hardships to displaced persons in adjusting to a new location.

The Moving Expense Payments Program is designed to compensate the displacee for the cost of moving personal property from homes, businesses, non-profit organizations, and farm operations acquired for a highway project. Under the Replacement Program for Owners, NCDOT will participate in reasonable incidental purchase payments for replacement dwellings such as attorney's fees, surveys, appraisal, and other closing costs and if applicable make a payment for any increased interest expenses for replacement dwellings. Reimbursement to owner-occupants for replacement housing payments, increased interest payments, and incidental purchase expenses may not exceed $22,500 combined total.

A displaced tenant may be eligible to receive a payment, not to exceed $5,250, to rent a replacement dwelling or to make a down payment, including incidental expenses, on the purchase of a replacement dwelling. A maximum of $5,250 is allowed by NCDOT as a down payment for tenants.

In addition to the payments already mentioned, a small business (having not more than 500 employees), farm or non-profit organization may be eligible to receive a payment, not to exceed $10,000 for reasonable and necessary expenses actually incurred in relocating and re-establishing such small business, farm, or non-profit organization at a replacement site.

It is a policy of the State that no person will be displaced by the NCDOT's federally assisted construction projects unless and until comparable replacement housing has been offered or provided for each displacee within a reasonable period of time prior to displacement. No relocation payment received will be considered as income for the purposes of the Internal Revenue Code of 1954 or for purposes of determining eligibility or the extent of eligibility of any person for assistance under the Social Security Act or any other Federal law.

Last Resort Housing is a program used when comparable replacement housing is not available or when it is unavailable within the displacee's financial means, and the replacement program exceeds the Federal and State legal limitation. The purpose of the program is to allow broad latitudes in methods of implementation by the State so that decent, safe, and sanitary replacement housing can be provided. It is not felt that this program will be necessary since it is used, as the name implies, only as a "last resort," and there appears to be adequate opportunities for relocation within the area. However, it will be available if necessary.

VII. ENVIRONMENTAL EFFECTS

The project is expected to have an overall positive impact. Replacement of an inadequate bridge will result in safer traffic operations.

The project is a Federal "Categorical Exclusion" due to its limited scope and lack of significant environmental consequences.

The bridge replacement will not have an adverse effect on the quality of the human or natural environment with the use of current NCDOT standards and specifications.

The project is not in conflict with any plan, existing land use, or zoning regulation. No significant change in land use is expected to result from construction of the project.

No adverse impact on communities is anticipated. Right-of-way acquisition will be limited. It is anticipated that two relocatees are expected with implementation of the proposed alternative.

No adverse effect on public facilities or services is anticipated. The project is not expected to adversely affect social, economic, or religious opportunities in the area.

There are no publicly owned parks, recreational facilities, or wildlife and waterfowl refuges of national, state, or local significance in the vicinity of the project.

No geodetic survey markers will be impacted.

The Farmland Protection Policy Act requires all federal agencies or their representatives to consider the potential impacts to prime and important farmland soils by all land acquisition and construction projects. Prime and important farmland soils are defined by the Natural Resources Conservation Service (NRCS). Since there are no prime or important farmlands in the immediate vicinity of the proposed bridge the Farmland Protection Policy does not apply. See Appendix.

This project is an air quality "neutral" project, so it is not required to be included in the regional emission analysis (if applicable) and a project level CO analysis is not required.

This project is located in Currituck County, which has been determined to be in compliance with the National Ambient Air Quality Standards. 40 CFR Part 51 is not applicable, because the proposed project is located in an attainment area. This project is not anticipated to create any adverse effects on the air quality of this attainment area.

The traffic volumes will not increase or decrease because of this project. There are no receptors located in the immediate project area. The project's impact on noise and air quality will not be significant.

Noise levels could increase during construction but will be temporary. If vegetation is disposed of by burning, all burning shall be done in accordance with applicable local laws and regulations of the North Carolina SIP for air quality in compliance with 15 NCAC 2D.0520. This evaluation completes the assessment requirements for highway traffic noise (23 CFR Part 772) and for air quality (1990 CAAA and NEPA) and no additional reports are required.

An examination of records at the North Carolina Department of Environment and Natural Resources, Division of Water Quality, Groundwater Section, Solid Waste Management Section and the Hazardous Waste Section revealed no hazardous waste sites in the project area. There are no underground storage tanks located in the project area.

Currituck County is a participant in the National Flood Insurance Regular Program. This site on Tull Creek is included in an approximate F.E.M.A. study. This project will not adversely affect the 100-year flood plain. The proposed alternatives will not modify flow characteristics and will have minimal impact on floodplains due to roadway encroachment. The existing drainage patterns and groundwater will not be affected. Attached is a copy of the Flood Insurance Rate Map, on which are shown the approximate limits of the 100-year flood plain in the vicinity of the project (Figure 5).

On the basis of the above discussion, it is concluded that no significant adverse environmental effects will result from implementation of the project.

VIII. PUBLIC INVOLVEMENT

Efforts were undertaken early in the planning process to contact local officials and residents to involve them in the project development. A Local Officials meeting and Citizens Informational Workshop was held on January 4, 2000 at Moyock Elementary School and a Small Group meeting was held on April 13, 2000, where preliminary alternatives were reviewed and discussed with local officials and concerned citizens. Approximately 60 people attended the Citizen's workshop and seven comment sheets were received. Among local citizens concerns were improving the approach curve from the south, raising the grade from the north to avoid overtopping, and maintaining traffic on-site during construction. At the Small Group meeting among the concerns raised by local citizens was raising of the roadway grade and continuing wetland encroachment on their properties.

IX. AGENCY COORDINATION

June 21, 2000 a meeting was held with USACE and NCDENR-DCM to review Alternates A, B, C, and D. The bridge length for Alternate D was revised to 900 feet (270 meters). The canal adjacent to the project was determined to be public trust waters. This alternate would reduce the wetland impacts, provide additional area for floodwaters to cross and assist in constructibility.

On March 14, 2001 a NEPA/404 Merger Team meeting was held at NCDOT's Century Center. It was recommended that Alternates D and D1 be revised by lengthening the bridge on the east side and revising the tie-ins to the existing alignment. As a result of this meeting Concurrence Point No. 1 – Purpose and Need was signed.

On June 20, 2001 a NEPA/404 Merger Team meeting was held at NCDOT's Century Center. Alternates F1 and F2 were the only alternates deemed to be permittable. As a result, Concurrence Point No. 2 – Reasonable and Feasible Alternatives Studied was signed for Alternates F1 and F2.

On March 27, 2002 a NEPA/404 Merger Team meeting was held at NCDOT's Century Center. As a result, Concurrence Point No. 3 – Alternative Selection was signed and Alternate F1 was selected as the Preferred Alternate because it minimizes wetland impacts and restores high quality wetlands.

On August 15, 2002 a NEPA/404 Merger Team meeting was held at NCDOT's Transportation Building. As a result, Concurrence Point No. 4 – Avoidance and Minimization was signed. The following measures will be incorporated:

1. Anticipated impacts to wetlands minimized to approximately 1.57 acres (0.635 hectare) by replacing 236-foot (71.9-meter) bridge with a 965-foot (294.1 meter) bridge.
2. Restoration of wetlands of approximately 1.72 acres (0.700 hectare) accomplished by restoring the old roadway (SR 1222) and old marina roadway to natural ground and reseeding/planting with natural vegetation. Enhancement mitigation credits of 2.57 acres (1.04 hectare) for the area extending outward from the lifted roadway. The area of enhancement will be calculated as a ¼ circle, the radius of which is the length of causeway removed.
3. The bridge will be constructed utilizing top-down construction.
4. A retaining wall will be utilized in the northeast quadrant to protect the existing canal from impacts.
5. Rock plate will be utilized on the slope in the southwest quadrant adjacent to the canal to minimize impacts.
6. The proposed bridge will maintain the existing navigational clearance.
7. Jetting will not be allowed as a construction method.

8. 3:1 side slopes will be utilized due to the fact that they will be easier to maintain stability of the slope.
9. An in-water construction moratorium will be implemented from February 15 thru September 30.
10. Construction activities will adhere to the guidelines outlined in the latest edition of Precautions For Construction In Areas Which May Be Used By The West Indian Manatee In North Carolina.
11. Bridge deck drains will not be allowed to discharge directly into the water.

X. AGENCY COMMENTS

The following are comments received during the scoping process:

1. North Carolina Wildlife Resource Commission (NCWRC)

   Comment: *"No in-water work should occur from February 15 to September 30. This moratorium is longer than the standard anadromous fish moratorium due to the primary nursery area designation."*

   Response: An in-water work moratorium will be in effect from February 15 through September 30.

   Comment: *"Bridge deck drains should not discharge directly into the stream."*

   Response: Deck drains will not be allowed to discharge directly into the water or main channel.

2. NCDENR - Division of Marine Fisheries (DMF)

   Comment: *"This agency will request a construction moratorium associated with the bridge replacement. The requested time period is 15 February through 30 September.*

   Response: An in-water work moratorium will be in effect from February 15 through September 30.

3. United States Army Corps of Engineers (USACE)

   Comment: *"Off-site detours are always preferable to on-site (temporary) detours in wetlands."*

   Response: The existing bridge will be replaced on new alignment downstream (north) of the existing bridge with a bridge. During construction of the structure, traffic will be maintained on the existing structure. During construction of the approaches, traffic will be routed off-site.

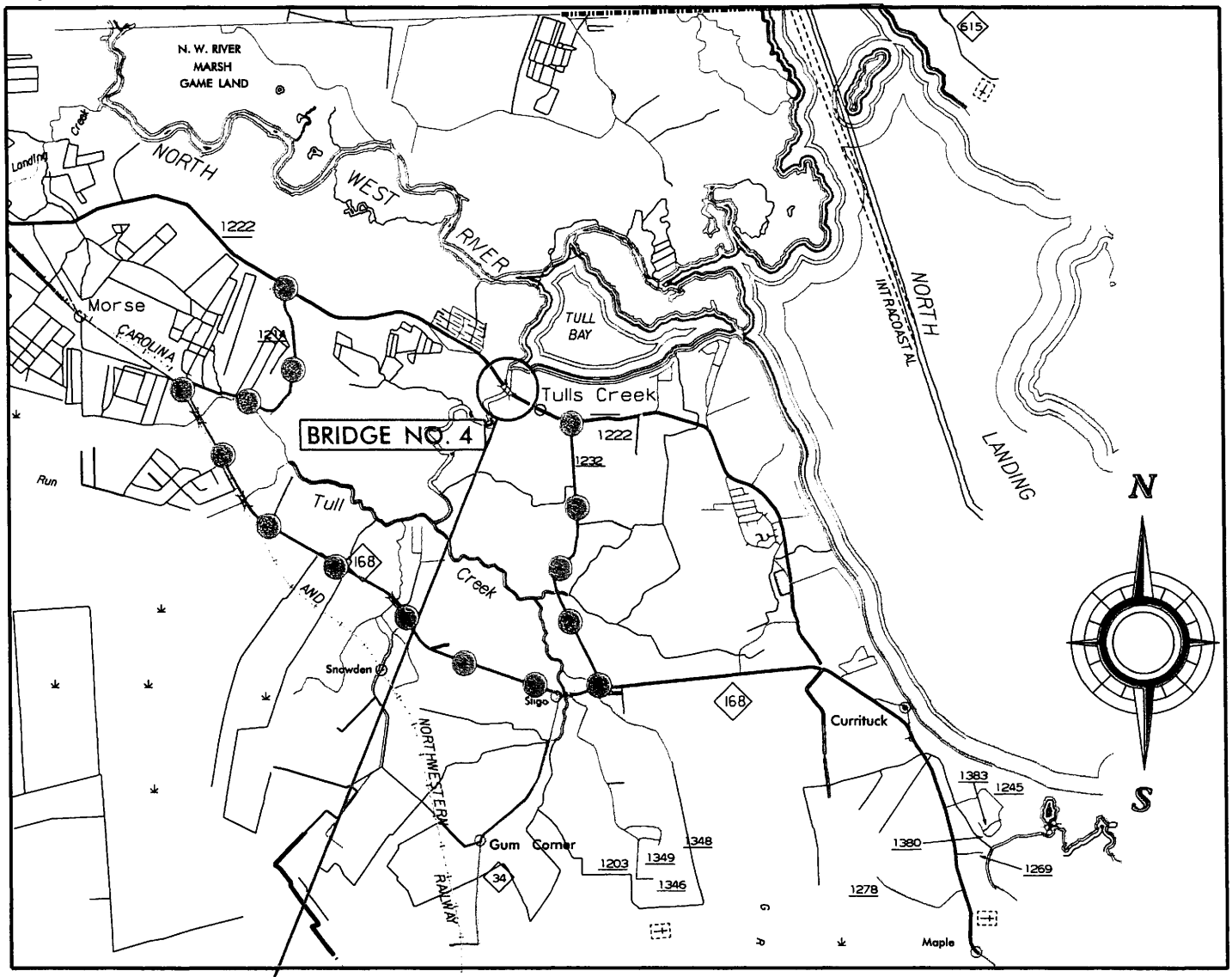
4. County of Currituck

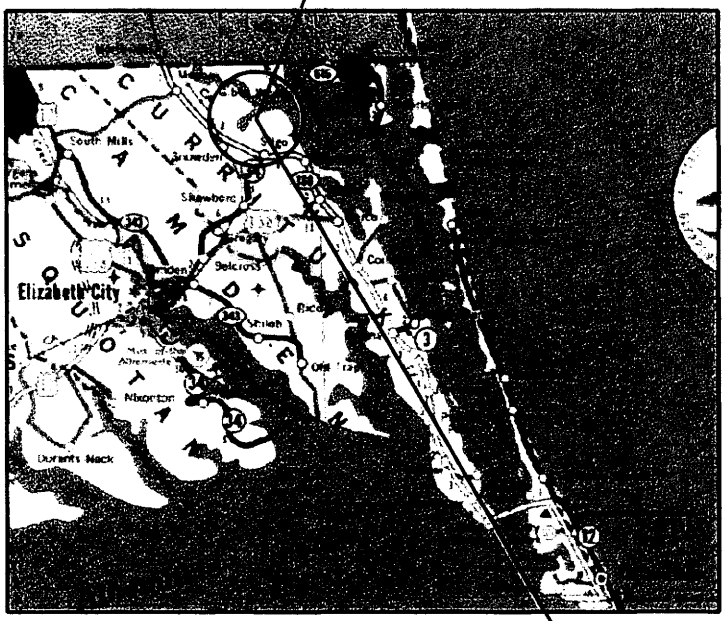
   Comment: *"Tulls Creek is a major waterway of the County providing access to Tulls Bay and Currituck Sound. Therefore, the bridge needs to be designed to accommodate boat traffic."*

   Response: The proposed bridge will maintain the existing navigational clearance.

APPENDIX A

FIGURES





LEGEND

Studied Detour Route

SCALE

2Km 1Km 0 1Km 2Km

1 MILE 0 1 MILE

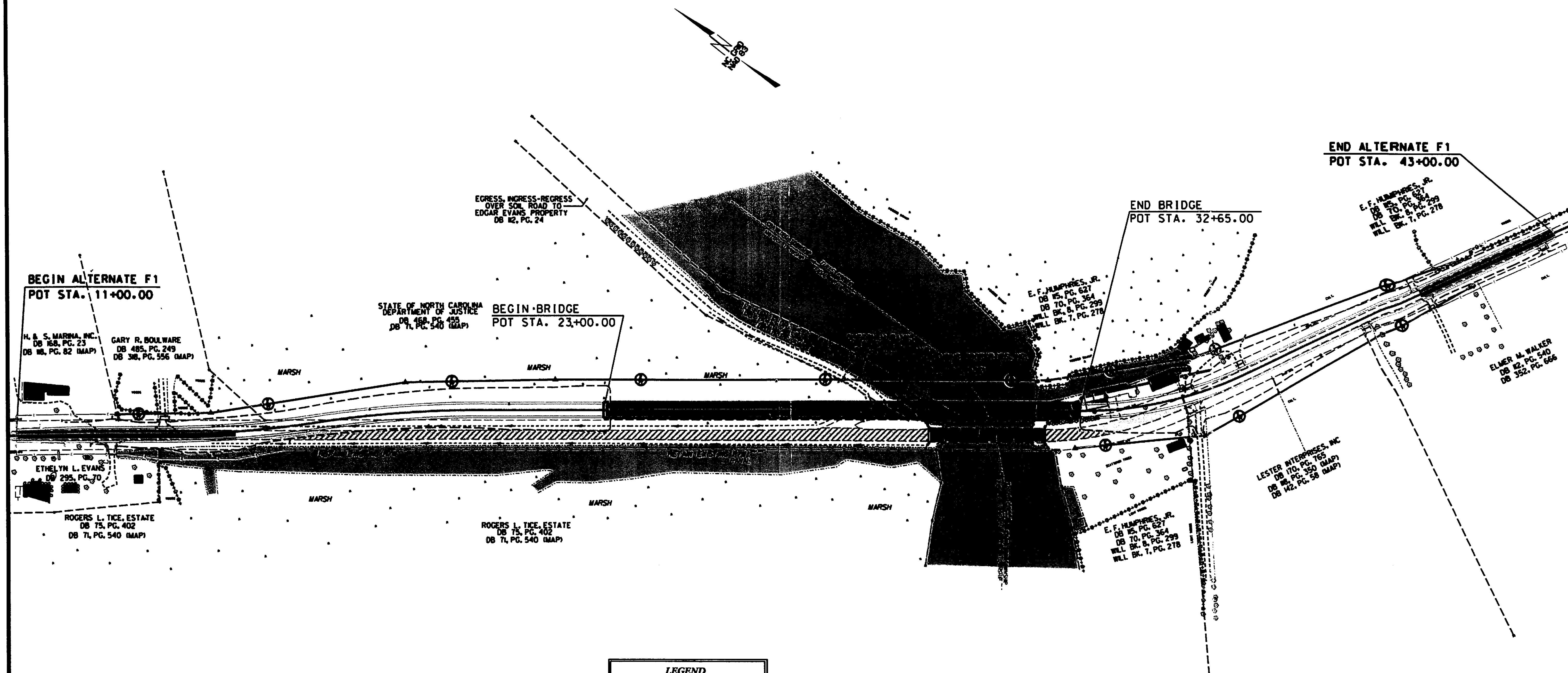
NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
PROJECT DEVELOPMENT AND
ENVIRONMENTAL ANALYSIS BRANCH

CURRITUCK COUNTY

BRIDGE NO. 4 ON SR 1222
OVER TULL CREEK

TIP No. B-2950

FIGURE 1



NC GRID NAD 83
BEGIN ALTERNATE F1
POT STA. 11+00.00
H. & S. MARINA, INC.
DB 168, PG. 23
DB 118, PG. 82 (MAP)
GARY R. BOULWARE
DB 485, PG. 249
DB 318, PG. 556 (MAP)
ETHELYN L. EVANS
DB 295, PG. 70
ROGERS L. TICE, ESTATE
DB 75, PG. 402
DB 71, PG. 540 (MAP)
STATE OF NORTH CAROLINA
DEPARTMENT OF JUSTICE
DB 468, PG. 455
DB 71, PG. 540 (MAP)
BEGIN BRIDGE
POT STA. 23+00.00
EGRESS, INGRESS-REGRESS
OVER SOIL ROAD TO
EDGAR EVANS PROPERTY
DB 112, PG. 24
MARSH
END BRIDGE
POT STA. 32+65.00
E. F. HUMPHRIES, JR.
DB 115, PG. 627
DB 70, PG. 364
WILL BK. 8, PG. 299
WILL BK. 7, PG. 278
END ALTERNATE F1
POT STA. 43+00.00
ELMER M. WALKER
DB 112, PG. 540
DB 352, PG. 666
LESTER INTERPRISES, INC
DB 170, PG. 765
DB 118, PG. 350 (MAP)
DB 142, PG. 58 (MAP)

LEGEND

- EXISTING WATERWAY
- TAKEN WATERWAY
- EXISTING ROADWAY
- EXISTING ROADWAY TO BE RESURFACED
- PROPOSED ROADWAY
- PROPOSED STRUCTURES, ISLAND, CURB AND GUTTER
- BUILDINGS
- EXISTING ROAD TO BE REMOVED
- EXISTING STRUCTURES TO BE REMOVED
- PROPERTY LINES
- SLOPE STAKE LINE

B–2950

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
PROJECT DEVELOPMENT &
ENVIROMENTAL ANALYSIS BRANCH

CURRITUCK COUNTY

BRIDGE NO. 4 ON SR 1222
OVER TULL CREEK

TIP NO. B–2950

50 0 100

FIGURE 2
ALTERNATE F1
PREFERRED

...\bxvii\b2950\ce\b2950c~3.dgn Apr. 04, 2002 13:29:33

N 45° 58' 58" E
450.68'

BEGIN ALTERNATE F2
POT STA. 11+00.00

END ALTERNATE F2
POT STA. 43+00.00

END BRIDGE
POT STA. 32+65.00

BEGIN BRIDGE
POT STA. 23+00.00

EGRESS, INGRESS-REGRESS OVER SOIL ROAD TO EDGAR EVANS PROPERTY
DB 112, PG. 24

H. & S. MARINA, INC.
DB 168, PG. 23
DB 118, PG. 82 (MAP)

GARY R. BOULWARE
DB 485, PG. 249
DB 318, PG. 556 (MAP)

STATE OF NORTH CAROLINA
DEPARTMENT OF JUSTICE
DB 468, PG. 455
DB 71, PG. 540 (MAP)

ETHELYN L. EVANS
DB 295, PG. 70

ROGERS L. TICE, ESTATE
DB 75, PG. 402
DB 71, PG. 540 (MAP)

ROGERS L. TICE, ESTATE
DB 75, PG. 402
DB 71, PG. 540 (MAP)

E. F. HUMPHRIES, JR.
DB 165, PG. 627
DB 70, PG. 364
WILL BK. 8, PG. 299
WILL BK. 7, PG. 278

E. F. HUMPHRIES, JR.
DB 165, PG. 627
DB 70, PG. 364
WILL BK. 8, PG. 299
WILL BK. 7, PG. 278

ELMER M. WALKER
DB 112, PG. 540
DB 352, PG. 666

LESTER INTERPRISES, INC
DB 170, PG. 765
DB 165, PG. 350 (MAP)
DB 142, PG. 56 (MAP)

MARSH

MARSH

MARSH

MARSH

LEGEND

- EXISTING WATERWAY
- TAKEN WATERWAY
- EXISTING ROADWAY
- EXISTING ROADWAY TO BE RESURFACED
- PROPOSED ROADWAY
- PROPOSED STRUCTURES, ISLAND, CURB AND GUTTER
- BUILDINGS
- EXISTING ROAD TO BE REMOVED
- EXISTING STRUCTURES TO BE REMOVED
- PROPERTY LINES
- SLOPE STAKE LINE

B-2950

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
PROJECT DEVELOPMENT &
ENVIROMENTAL ANALYSIS BRANCH

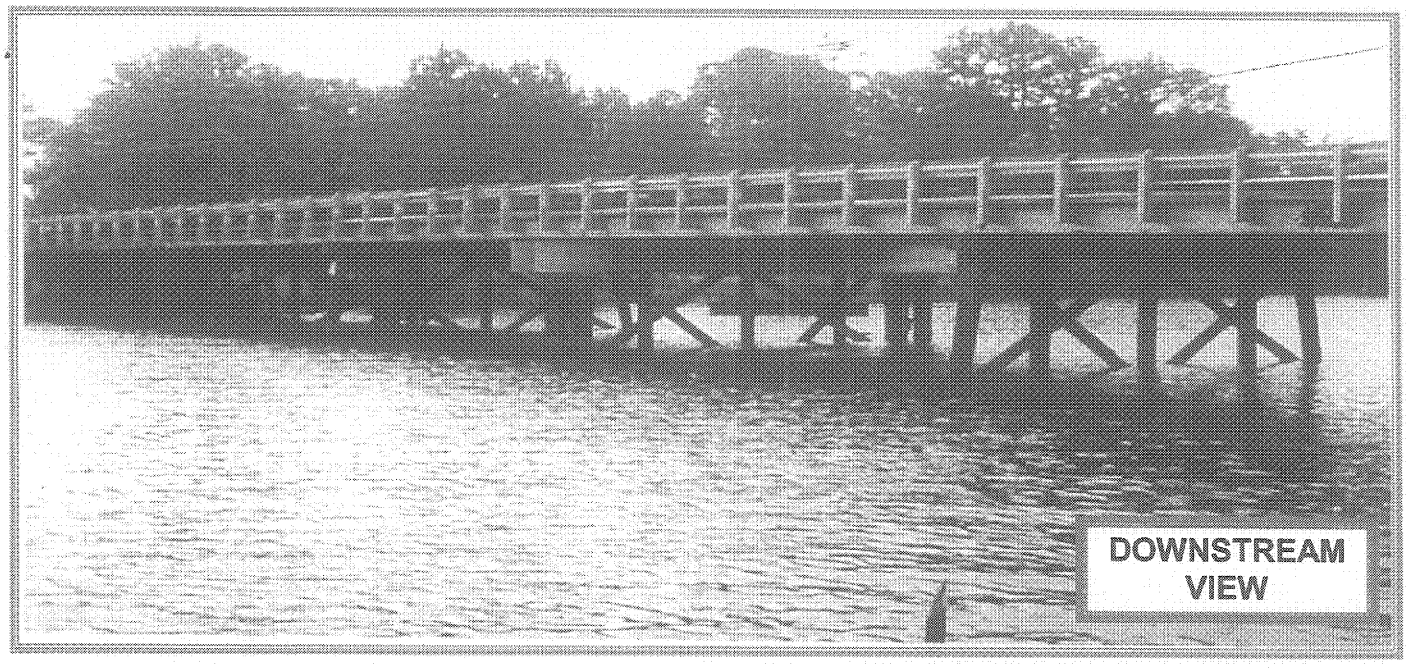
CURRITUCK COUNTY

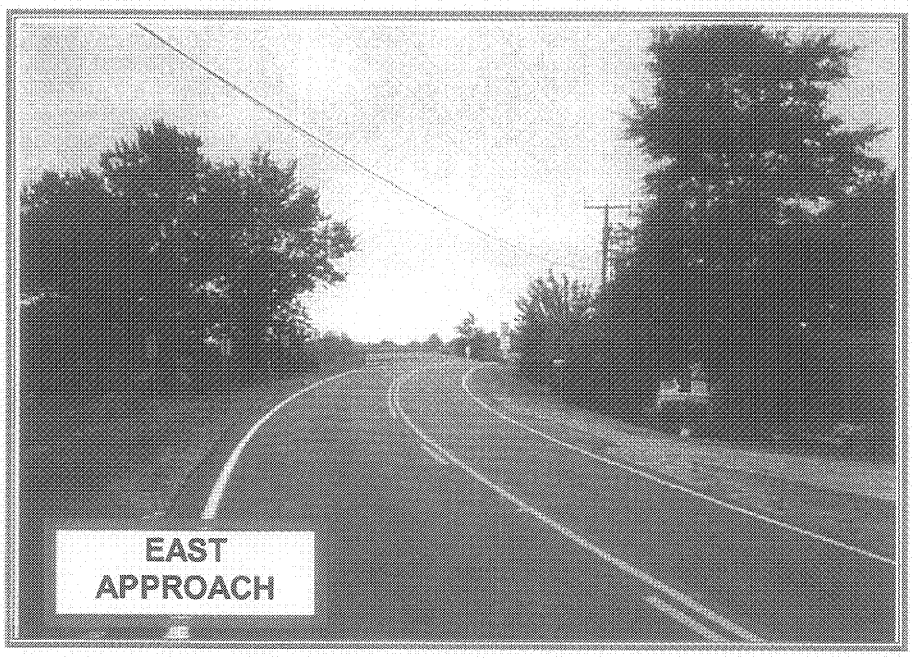
BRIDGE NO. 4 ON SR 1222
OVER TULL CREEK

TIP NO. B-2950

50 0 100

FIGURE 2A
ALTERNATE F2

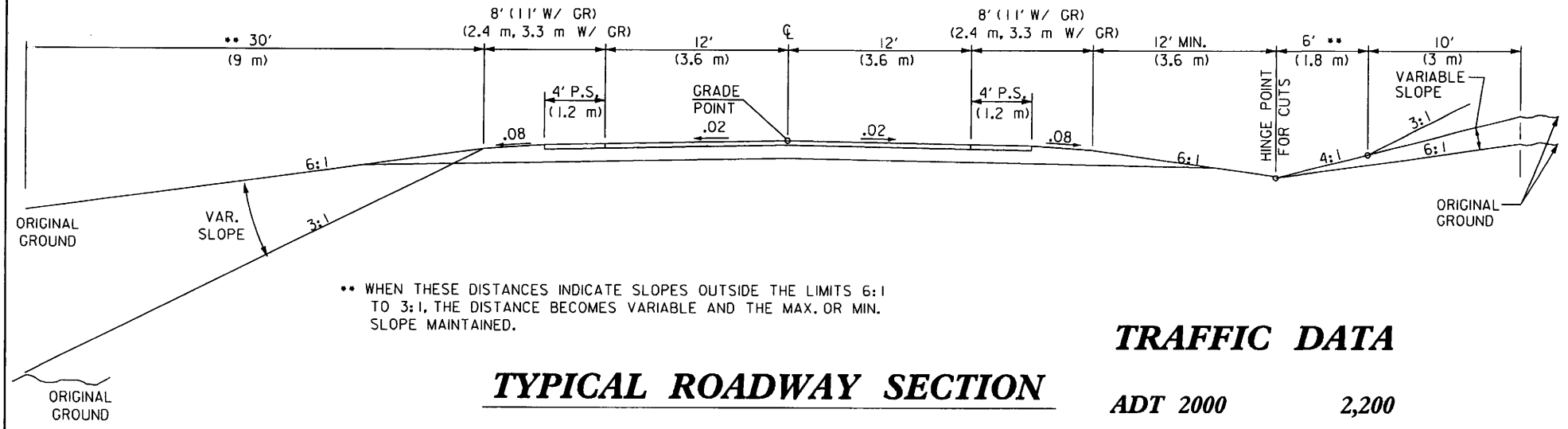




B-2950
Replacement of Bridge No. 4 on SR 1222 Over Tull Creek
Currituck County

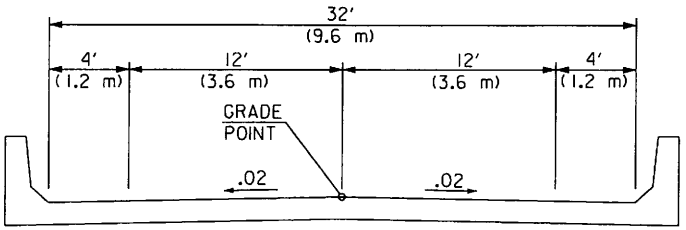
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

FIGURE 3



** WHEN THESE DISTANCES INDICATE SLOPES OUTSIDE THE LIMITS 6:1 TO 3:1, THE DISTANCE BECOMES VARIABLE AND THE MAX. OR MIN. SLOPE MAINTAINED.

TYPICAL ROADWAY SECTION



TYPICAL BRIDGE SECTION

TRAFFIC DATA

ADT 2000	2,200
ADT 2003	2,660
ADT 2025	6,000
DUAL	3%
TTST	2%

FUNCTIONAL CLASSIFICATION: RURAL MINOR COLLECTOR

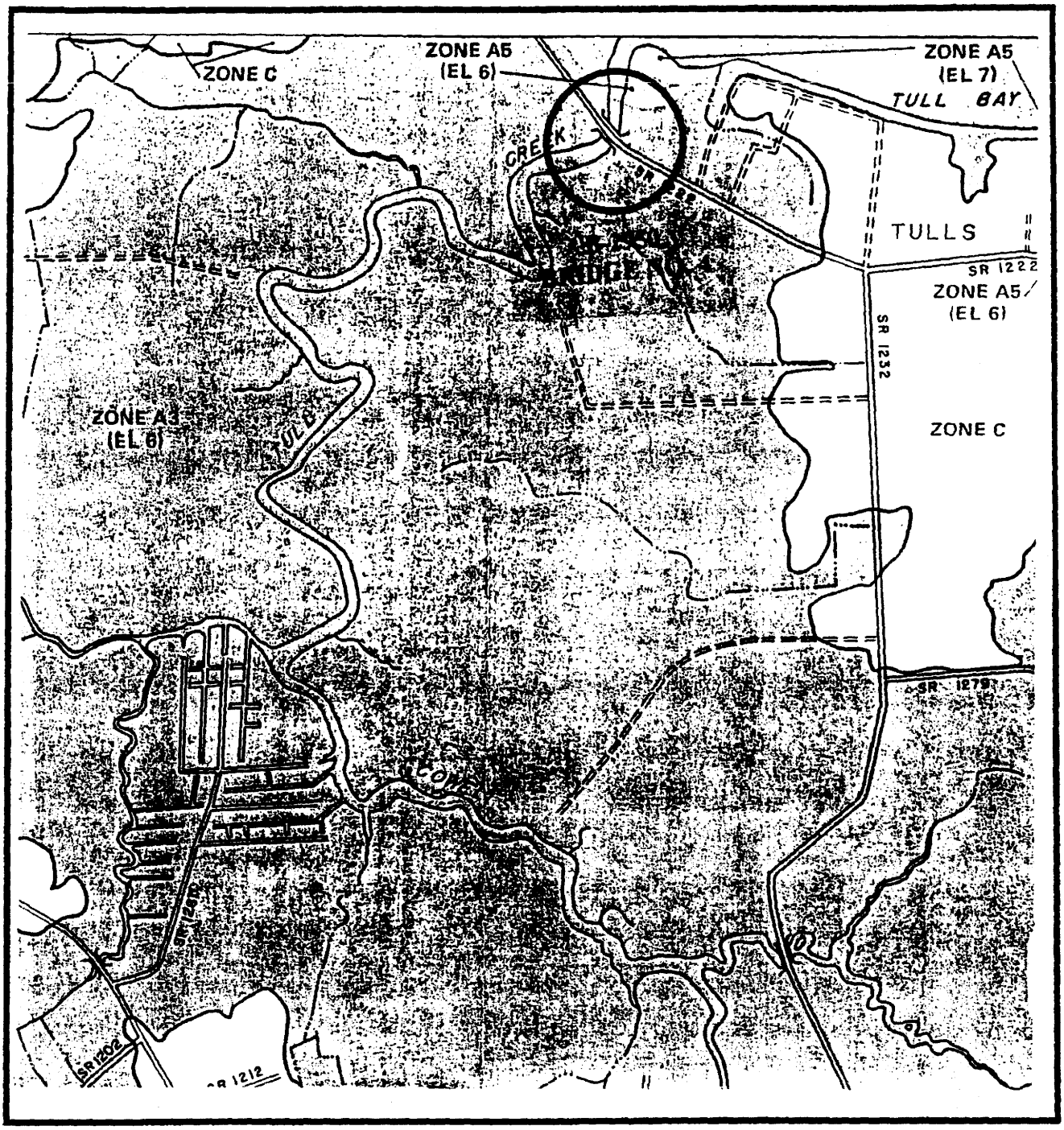
NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
PLANNING & ENVIRONMENTAL BRANCH

CURRITUCK COUNTY

BRIDGE NO. 4 ON SR 1222 OVER TULL CREEK

TIP B-2950

FIGURE 4



FEMA FLOOD STUDY 100 YEAR FLOOD PLAIN

1000 ft. 0 1000 ft

305 m Approximate Scale 305 m

FIGURE 5

APPENDIX B

NEPA/404 MERGER TEAM CONCURRENCE POINTS 1, 2, 3, AND 4

Section 404/NEPA Merger Project Team Meeting Agreement

Concurrence Point No. 1 – Purpose and Need

Project Name/Description:

Replace Bridge No. 4 on SR 1222 over Tulls Creek in Currituck County
TIP Project No. B-2950
Federal Aid Project No. BRZ-1222(2)
State Project No. 8.2040301

Purpose and Need of the Proposed Project:

To replace a functionally obsolete and structurally deficient structure with a safer and improved structure and approaches. To do-nothing will eventually necessitate removal of the bridge and this is not desirable due to the traffic service provided by SR 1222.

The Project Team has concurred on this date of March 14, 2001 with the purpose and need for the proposed project as stated above.

USACE William J. Biddlecome

USEPA

NMFS Ron Sechler

DCM

NCWRC

NCDMF

NCDOT Stacy B Harris

USFWS

NPS

NCDWQ

NCDCR

FHWA

Section 404/NEPA Merger Project Team Meeting Agreement

Concurrence Point No. 2 - Reasonable and Feasible Alternatives Studied

Project Name/Description: Replace Bridge No. 4 Over Tull Creek on SR 1222 in Currituck County, Federal-Aid Project No. BRZ-1222(2), State Project No. 8.2040301.

Alternatives studied in detail: As describe in June 11, 2001 handout from NCDOT

1. Alternate F1 involves replacing the bridge on new alignment downstream (north) of the existing bridge with a bridge. During construction of the structure, traffic will be maintained on the existing structure. Alternate F1 provides no access to the marina.
2. Alternate F2 involves replacing the bridge on new alignment downstream (north) of the existing bridge with a bridge. During construction of the structure, traffic will be maintained on the existing structure. Alternate F2 provides a driveway access to the marina.

The Project Team has concurred on this date of June 20, 2001 with the "alternatives to be studied in detail in the NEPA document" as stated above.

USACE _____

USEPA _____

NMFS _____

DCM _____

NCWRC _____

NCDMF _____

NCDOT Division 1 _____

NCDOT _____

USFWS _____

NPS _____

NCDWQ _____

NCDCR _____

FHWA _____

Section 404/NEPA Merger Project Team Meeting Agreement
Concurrence Point No. 3 – Alternative Selection

Project No./TIP No./ Name/Description:

Federal Aid Project Number: BRZ-1222(2)
State Project Number: 8.2040301
TIP Number: B-2950
TIP Description: Replace Bridge No. 4 on SR 1222 over Tulls Creek in Currituck County

Alternative recommended:

Alternate F1 involves replacing the bridge on new alignment downstream (north) of the bridge with a bridge. The bridge will be approximately 965 feet. During construction of the structure, traffic will be maintained on the existing structure. During construction of the approaches traffic will be routed off-site. Alternate F1 provides no access to the marina. Including removal of existing bridge causeway and driveway and paved ramp

The Project Team has concurred on this date of MARCH 27 **, 2002 with the "alternative to be recommended in the NEPA document" as stated above.**

U. S. Army Corps of Engineers

U. S. Environmental Protection Agency

U. S. Fish and Wildlife Services Howard F. Hall

N. C. Wildlife Resources Commission

N. C. Department of Cultural Resources

N. C. DENR - DWQ

Federal Highway Administration

National Marine Fisheries Service

N. C. DENR - DCM

N. C. DENR - DMF

N. C. Department of Transportation

N. C. Department of Transportation (Div. 1)

Section 404/NEPA Merger Project Team Meeting Agreement
Concurrence Point No. 4A – Avoidance and Minimization

Project No./TIP No./ Name/Description:

Federal Aid Project Number:	BRZ-1222(2)
State Project Number:	8.2040301
TIP Number:	B-2950
TIP Description:	Replace Bridge No. 4 on SR 1222 over Tulls Creek in Currituck County
Recommended Alternate:	Alternate F1 involves replacing the bridge on new alignment downstream (north) of the bridge with a bridge. The bridge will be approximately 965 feet. During construction of the structure, traffic will be maintained on the existing structure. During construction of the approaches traffic will be routed off-site. Alternate F1 provides no access to the marina.

Avoidance and Minimization:

1. Anticipated impacts to wetlands minimized to approximately 1.57 acres (0.635 hectare) by replacing 236-foot (71.9-meter) bridge with a 965-foot (294.1 meter) bridge.
2. Restoration of wetlands of approximately 1.72 acres (0.700 hectare) accomplished by restoring the old roadway (SR 1222) and old marina roadway to natural ground and reseeding/planting with natural vegetation. Enhancement mitigation credits of 2.57 acres (1.04 hectare) for the area extending outward from the lifted roadway. The area of enhancement will be calculated as a ¼ circle, the radius of which is the length of causeway removed.
3. The bridge will be constructed utilizing top-down construction.
4. A retaining wall will be utilized in the northeast quadrant to protect the existing canal from impacts.
5. Rock plate will be utilized on the slope in the southwest quadrant adjacent to the canal to minimize impacts.
6. The proposed bridge will maintain the existing navigational clearance.
7. Jetting will not be allowed as a construction method.
8. 3:1 side slopes will be utilized due to the fact that they will be easier to maintain stability of the slope.
9. An in-water construction moratorium will be implemented from February 15 thru September 30.
10. Construction activities will adhere to the guidelines outlined in the latest edition of Precautions For Construction In Areas Which May Be Used By The West Indian Manatee In North Carolina.
11. Bridge deck drains will not be allowed to discharge directly into the water.

The Project Team has concurred on this date of August 15, 2002 with the "avoidance and minimization of the alternative to be recommended in the NEPA document" as stated above.

U. S. Army Corps of Engineers

U. S. Environmental Protection Agency

U. S. Fish and Wildlife Services

N. C. Wildlife Resources Commission

N. C. Department of Cultural Resources

N. C. DENR - DWQ

Federal Highway Administration

National Marine Fisheries Service

N. C. DENR - DCM

N. C. DENR - DMF

N. C. Department of Transportation

N. C. Department of Transportation (Div. 1)

The Project Team has concurred on this date of August 15, 2002 with the "avoidance and minimization of the alternative to be recommended in the NEPA document" as stated above.

U. S. Army Corps of Engineers	William J. Biddlecome
U. S. Environmental Protection Agency	
U. S. Fish and Wildlife Services	
N. C. Wildlife Resources Commission	
N. C. Department of Cultural Resources	
N. C. DENR - DWQ	
Federal Highway Administration	Ronald L. Sechler
National Marine Fisheries Service	
N. C. DENR - DCM	
N. C. DENR - DMF	
N. C. Department of Transportation	John Wadsworth
N. C. Department of Transportation (Div. 1)	

The Project Team has concurred on this date of August 15, 2002 with the "avoidance and minimization of the alternative to be recommended in the NEPA document" as stated above.

U. S. Army Corps of Engineers	__________
U. S. Environmental Protection Agency	__________
U. S. Fish and Wildlife Services	__________
N. C. Wildlife Resources Commission	__________
N. C. Department of Cultural Resources	__________
N. C. DENR - DWQ	__________
Federal Highway Administration	__________
National Marine Fisheries Service	__________
N. C. DENR - DCM	__________
N. C. DENR - DMF	__________
N. C. Department of Transportation	__________
N. C. Department of Transportation (Div. 1)	__________

APPENDIX C

CORRESPONDENCE

DEPARTMENT OF THE ARMY
WILMINGTON DISTRICT, CORPS OF ENGINEERS
P.O. BOX 1890
WILMINGTON, NORTH CAROLINA 28402-1890

October 12, 1999

REPLY REFER TO

Planning Services Section

Mr. William D. Gilmore, P.E., Manager
Project Development and
Environmental Analysis Branch
North Carolina Division of Highways
Post Office Box 25201
Raleigh, North Carolina 27611-5201

Dear Mr. Gilmore:

This is in response to a letter from your office dated June 16, 1999, to Mr. Mike Bell of our Washington Regulatory Field Office, subject: "Request for Comments on NCDOT Bridge Replacement Projects for Bridge Demolition and Removal over Waters of the U.S., Replace Bridge No. 4 on SR 1222 over Tull Creek, TIP No. B-2950, Currituck County" (Regulatory Division Action ID No. 199910208).

Our comments involve impacts to flood plains and jurisdictional resources that include waters, wetlands, and U.S. Army Corps of Engineers projects. The proposed bridge replacement would not cross a Corps-constructed flood control or navigation project. Enclosed are our comments on the other issues.

We appreciate the opportunity to comment on this project. If we can be of further assistance, please contact us.

Sincerely,

W. Coleman Long
Chief, Technical Services Division

Enclosure

U.S. ARMY CORPS OF ENGINEERS, WILMINGTON DISTRICT, COMMENTS ON:

"Request for Comments on NCDOT Bridge Replacement Projects for Bridge Demolition and Removal over Waters of the U.S., Replace Bridge No. 4 on SR 1222 over Tull Creek, TIP No. B-2950, Currituck County" (Regulatory Division Action ID No. 199910208)

1. **FLOOD PLAINS: POC – Bobby L. Willis, Planning Services Section at (910) 25104728**

Currituck County is a participant in the National Flood Insurance Program. Based on a review of Panel 175 of the November 1984 Flood Insurance Rate Map, the site of the proposed bridge replacement is located in the 100-year flood plain, with a 100-year flood elevation of 6 feet N.G.V.D. The source of flooding is coastal storm surge, and no floodway is defined at the site. We suggest that the county be contacted for compliance with their flood plain and other applicable ordinances.

2. **WATERS AND WETLANDS: POC – Michael Bell, Project Manager, Washington Field Office, Regulatory Division, at (252) 975-1616, Extension 26**

Mr. Mike Bell visited the site on July 21, 1999. The bridge is surrounded by Coastal Area Management Act (CAMA) marsh, which is prime wetland area. This office strongly discourages any temporary detours, and instead recommends building the new bridge in place. We recommend the use of existing roads for detour, since it is only a 3-4 mile detour to US 168.

All work restricted to existing high ground will not require prior Federal permit authorization. However, Department of the Army permit authorization pursuant to Section 404 of the Clean Water Act of 1977, as amended, will be required for the discharge of excavated or fill material in waters of the United States or any adjacent and/or isolated wetlands in conjunction with your proposed bridge replacements, including disposal of construction debris. Specific permit requirements will depend on design of the projects, extent of fill work within waters of the United States, including wetlands (dimensions, fill amounts, etc.), construction methods, and other factors.

Although this project may qualify as a Categorical Exclusion, in order for the proposal to be considered for authorization under Nationwide Permit #23, the project planning report should contain sufficient information to document that the proposed activity does not have more than a minimal individual or cumulative impact on the aquatic environment. Our experience has shown that replacing bridges with culverts often results in sufficient adverse impacts to consider the work as having more than minimal impacts on the aquatic environment. Accordingly, the following items need to be addressed in the project planning report:

a. The report should contain the amount of permanent and temporary impacts to waters and wetlands as well as a description of the type of habitat that will be affected.

b. Offsite detours are always preferable to onsite (temporary) detours in wetlands, especially in this case. If an onsite detour is the recommended action, justification must be provided.

2. **WATERS AND WETLANDS: (Continued)**

c. Project commitments should include the removal of all temporary fills from waters and wetlands and "time-of-year" restrictions on in-stream work if recommended by the North Carolina Wildlife Resources Commission. In addition, if undercutting is necessary for temporary detours, the undercut material should be stockpiled to be used to restore the site.

d. All restored areas should be planted with endemic vegetation, including trees, if appropriate.

e. The report should provide an estimate of the linear feet of new impacts to streams resulting from construction of the project.

f. If a bridge is proposed to be replaced with a culvert, NCDOT must demonstrate that the work will not result in more than minimal impacts on the aquatic environment, specifically addressing the passage of aquatic life, including anadromous fish. In addition, the report should address the impacts that the culvert would have on recreational navigation.

g. To be considered for authorization, discharge of demolition material into waters and wetlands and associated impacts must be disclosed and discussed in the project planning report.

At this time, construction plans are not available for review. When final plans are complete, including the extent and location of any work within waters of the United States and wetlands, our Regulatory Division would appreciate the opportunity to review those plans for a project-specific determination of DA permit requirements.

If you have questions or need further information, please contact Mr. Bell.

Dalawer

DEPARTMENT OF THE ARMY
WILMINGTON DISTRICT, CORPS OF ENGINEERS
P.O. BOX 1890
WILMINGTON, NORTH CAROLINA 28402-1890

REPLY TO
ATTENTION OF

September 29, 1998

Planning Services Section

Mr. William D. Gilmore, P.E., Manager
Planning and Environmental Branch
North Carolina Division of Highways
Post Office Box 25201
Raleigh, North Carolina 27611-5201

Dear Mr. Gilmore:

This is in response to a letter from your office dated June 5, 1998, subject: "Request for Comments for Group XVII Bridge Replacement Projects." The bridge replacement projects are located in various Eastern and Piedmont North Carolina counties.

Our comments are enclosed. We appreciate the opportunity to comment on these projects. If we can be of further assistance, please contact us.

Sincerely,

C. Alex Morrison, Jr., P.E.
Chief, Technical Services Division

Enclosure

U.S. ARMY CORPS OF ENGINEERS, WILMINGTON DISTRICT, COMMENTS ON:

"Request for Comments for Group XVII Bridge Replacement Projects" in various Eastern and Piedmont North Carolina counties

1. **FLOOD PLAINS: POC - Bobby L. Willis, Planning Services Section, at (910) 251-4728**

All of the bridges are within counties and communities which participate in the National Flood Insurance Program. From the various Flood Insurance Rate Maps (FIRMs), it appears that both approximate study and detail study streams are involved. (Detail study streams are those with 100-year flood elevations determined and, if controlled by riverine flooding, normally have floodways defined. Of these bridge crossings, only the Tar River in Edgecombe County has a floodway defined.) Based on a review of the FIRM's and pertinent United States Geological Survey topo maps, none of the bridges over railroads appear to be in identified flood hazard areas. A summary of flood plain information pertaining to the other bridges is contained in the following table. The FIRMs are from the county or countywide flood insurance study unless otherwise noted.

Bridge No.	Route No.	County	Study Stream	Type	Date Of Firm
49	SR 1101	Carteret	White Oak River	Approx	8/85
"	SR 1442	Onslow	"	"	7/87
4	SR 1222	Currituck	Tull Creek	Detail	11/84
24	US 64 Bus	Edgecombe	Tar River	Detail	2/88 *
"	"	"	"	"	4/80 **
17	NC 89	Stokes	Dan River	Approx	9/88
64	US 220 Bus	Rockingham	Mayo River	Approx	5/91

* Map is Town of Tarboro FIRM.
** Map is Town of Princeville FIRM.

U.S. ARMY CORPS OF ENGINEERS, WILMINGTON DISTRICT, COMMENTS ON:

"Request for Comments for Group XVII Bridge Replacement Projects" in various Eastern and Piedmont North Carolina counties

1. **FLOOD PLAINS: (Continued)**

For the Tar River crossing, we refer you to the Federal Emergency Management Agency's "Procedures for 'No Rise' Certification for Proposed Developments in Regulatory Floodways", copies of which have been furnished previously to your office. In addition, we suggest coordination with the respective counties or communities for compliance with their flood plain ordinances and any changes, if required, to their flood insurance maps and reports.

2. **WATERS AND WETLANDS: POC - Raleigh, Washington, and Wilmington Field Offices, Regulatory Division (Individual POC's are listed following the comments.)**

Based upon a review of Projects B-3013 and B-3231 (bridge replacements over railroads), it appears that the proposed work is not likely to impact any jurisdictional waters subject to Department of the Army (DA) permit authority. In addition, from a review of submitted information and all available maps for the bridge-over-railroad Project B-3214, it was determined that no jurisdictional wetlands will be impacted by this proposed project. Accordingly, no DA authorization will be required in this case.

All work restricted to existing high ground will not require prior Federal permit authorization. However, DA permit authorization pursuant to Section 404 of the Clean Water Act of 1977, as amended, will be required for the discharge of excavated or fill material in waters of the United States or any adjacent and/or isolated wetlands in conjunction with your proposed bridge replacements, including disposal of construction debris. Specific permit requirements will depend on design of the projects, extent of fill work within waters of the United States, including wetlands (dimensions, fill amounts, etc.), construction methods, and other factors. Also, please be reminded that Stokes County is one of the twenty-five mountain counties of North Carolina that contain trout waters. Review and comments are required from the North Carolina Wildlife Resources Commission prior to any action being taken on DA permit authorization for identified trout water counties.

U.S. ARMY CORPS OF ENGINEERS, WILMINGTON DISTRICT, COMMENTS ON:

"Request for Comments for Group XVII Bridge Replacement Projects" in various Eastern and Piedmont North Carolina counties

2. **WATERS AND WETLANDS: (Continued)**

Although these projects may qualify as a Categorical Exclusion, in order for the proposal to be considered for authorization under Nationwide Permit #23, the project planning report should contain sufficient information to document that the proposed activity does not have more than a minimal individual or cumulative impact on the aquatic environment. Our experience has shown that replacing bridges with culverts often results in sufficient adverse impacts to consider the work as having more than minimal impacts on the aquatic environment. Accordingly, the following items need to be addressed in the project planning report:

a. The report should contain the amount of permanent and temporary impacts to waters and wetlands as well as a description of the type of habitat that will be affected.

b. Off-site detours are always preferable to on-site (temporary) detours in wetlands. If an on-site detour is the recommended action, justification should be provided.

c. Project commitments should include the removal of all temporary fills from waters and wetlands and "time-of-the-year" restrictions on in-stream work if recommended by the NC Wildlife Resources Commission. In addition, if undercutting is necessary for temporary detours, the undercut material should be stockpiled to be used to restore the site.

d. All restored areas should be planted with endemic vegetation, including trees, if appropriate.

e. The report should provide an estimate of the linear feet of new impacts to streams resulting from construction of the project.

f. If a bridge is proposed to be replaced with a culvert, NCDOT must demonstrate that the work will not result in more than minimal impacts on the aquatic environment, specifically addressing the passage of aquatic life, including anadromous fish. In addition, the report should address the impacts that the culvert would have on recreational navigation.

U.S. ARMY CORPS OF ENGINEERS, WILMINGTON DISTRICT, COMMENTS ON:

"Request for Comments for Group XVII Bridge Replacement Projects" in various Eastern and Piedmont North Carolina counties

2. **WATERS AND WETLANDS: (Continued)**

At this point in time, construction plans are not available for review. When final plans are complete, including the extent and location of any work within waters of the United States and wetlands, our Regulatory Division would appreciate the opportunity to review those plans for a project-specific determination of DA permit requirements.

For additional information, please contact the following individuals:

Raleigh Field Office -

- Jean Manuele at (919) 876-8441, Extension 24, for Edgecombe and Northampton Counties (Regulatory Division Action ID Nos. 199820969 & 199820970)
- John Thomas at (919) 876-8441, Extension 25, for Person, Stokes, and Rockingham Counties (Action ID's 1998-20821, 20822, 20823, and 20824)
- Todd Tugwell at (919) 876-8441, Extension 26, for Wake County (ID 199820971)

Washington Field Office -

- Mike Bell at (252) 975-1616, Extension 26, for Currituck County (TIP B-2950)

Wilmington Field Office -

- Dave Timpy at (910) 251-4634 for Richmond and Carteret/Onslow Counties (Action ID Nos. 199801809 and 199801810)

3. **U.S. ARMY CORPS OF ENGINEERS PROJECTS: POC - Howard Varnam, Navigation Section at (910) 251-4411**

Bridge No. 24 on US 64 Business over the Tar River at Tarboro appears to cross a U.S. Army Corps of Engineers navigation project. This project provides for a channel 20 inches deep and 60 feet wide to Tarboro. There should be no problem from the provision of the proposed improvements if navigational clearances and channel setbacks for the existing project are maintained.

If you have questions or need further information related to the Federal project, please contact Mr. Varnam.

U.S. Department of Transportation
United States Coast Guard

Commander
United States Coast Guard
Atlantic Area

431 Crawford Street
Portsmouth, Va. 23704-5004
Staff Symbol: Aowb
Phone: (757)398-6587

16590
July 7, 1998

Mr. Richard Davis, P.E.
Planning and Environmental Branch
N.C. Division of Highways
P.O. Box 25201
Raleigh, North Carolina 27611

Dear Mr. Davis:

This is in response to your letter dated June 5, 1998 requesting the Coast Guard to review the proposed projects to replace ten bridges of which five are over waterways. The following are the five bridge numbers and their locations: #49 White Oak River; #4 Tull Creek; #24 Tar River; #17 Dan River; and #64 Mayo River. B2938 B2950 B2965 B3045 B3230

The Coast Guard Authorization Act of 1982 exempts bridge projects from Coast Guard bridge permits when the bridge project crosses nontidal waters which are not used, susceptible to use in their natural condition, or susceptible to use by reasonable improvement as a means to transport interstate commerce. Ms. Pam Williams confirmed such conditions in a telephone conversation on June 30, 1998. Due to this, the bridge projects on the Dan and Mayo Rivers are exempt, and will not require Coast Guard Bridge Permits.

Tull Creek, and the White Oak and Tar Rivers are subject to tidal influence and thus considered legally navigable for Bridge Administration Purposes. However, these waterways also meet the criteria for advance approval waterways outlined in Title 33, Code of Federal Regulations, Section 115.70. Advance approval waterways are those that are navigable in law, but not actually navigated by other than small boats. The Commandant of the Coast Guard has given his advance approval to the construction of bridges across such waterways; therefore, an individual permit will not be required for these three projects.

The fact that Coast Guard permits are not required does not relieve you of the responsibility for compliance with the requirements of any other Federal, State, or local agency who may have jurisdiction over any aspect of the project.

Sincerely,

ANN B. DEATON
Chief, Bridge Administration Section
By direction of the Commander
Fifth Coast Guard District

United States Department of Agriculture

Natural Resources Conservation Service

412 West Queen St.
Edenton, NC
27932

SUBJECT: Farmland Conversion Impact Rating form AD1006

DATE:06/06/99

TO: Pamela Williams
Wang Engineering Company, Inc.

The following information is in response to your request asking for information on farmlands in the (3 bridge replacement projects). Projects B-2938, B-2950, B-2965.

Prime farmland does not include land already in or committed to urban development or water storage. When funds have already been commited for utilities, water lines, and road or bridge replacement and widening, the land is committed to development and is be exempt from having to make a determination. Other prime farmland "already in" urban development includes all land that has been designated for commercial or industrial use or residential use that is not intended at the same time to protect farmland in a

1. Zoning code or ordinance adopted by the state or local unit of government or,

2. A comprehensive land use plan which has expressly been either adopted or reviewed in its entirety by the unit of local government in whose jurisdiction it is operative within 10 years preceding the implementation of the project.

If the area in question meets the above criteria, you will not need to complete a Farmland Conversion Impact Rating form (AD1006). Otherwise please proceed to submit a Farmland Conversion Impact Rating form AD1006. The AD1006 should be generated by the corresponding federal agency who will provide the permits and/or funds. If you have any questions please feel free to call me at:252-482-7437.

Thank You,

John Gagnon

John Gagnon
Resource Soil Scientist

Barnes/Haddon

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Raleigh Field Office
Post Office Box 33726
Raleigh, North Carolina 27636-3726

June 17, 1998

Mr. William D. Gilmore, P.E., Manager
Planning and Environmental Branch
North Carolina Department of Transportation
Division of Highways
P.O. Box 25201
Raleigh, NC 27611-520

Dear Mr. Gilmore:

Thank you for your letter of June 5, 1998, requesting information from the U.S. Fish and Wildlife Service (Service) for the purpose of evaluating the potential environmental impacts of the following proposed bridge replacement projects:

1. B-2938, Carteret/Onslow Counties, Replace Bridge No. 49 on SR 1101/SR 1442 over the White Oak River;

2. B-2950, Currituck County, Replace Bridge No. 4 on SR 1222 over Tull Creek;

3. B-2965, Edgecombe County, Replace Bridge No. 24 on US 64 Business over the Tar River;

4. B-3013, Person County, Replace Bridge No. 48 on US 501 over the Norfolk Southern Railway;

5. B-3045, Stokes County, Replace Bridge No. 17 on NC 89 over the Dan River;

6. B-3214, Northampton County, Replace Bridge No. 64 on US 301 over the CSX Railway;

7. B-3230, Rockingham County, Replace Bridge No. 64 on US 220 Business over the Mayo River;

8. B-3231, Rockingham County, Replace Bridge No. 243 on SR 1378 over the North/Western Railway;

9. B-3256, Wake County, Replace Bridge No. 337 on SR 1108 over the Norfolk Southern Railway; and,

10. B-3380, Richmond County, Replace Bridge No. 43 on Rice Street over the CSX Railway in Hamlet.

This report provides scoping information and is provided in accordance with provisions of the Fish and Wildlife Coordination Act (FWCA) (16 U.S.C. 661-667d) and Section 7 of the Endangered Species Act (ESA) of 1973, as amended (16 U.S.C. 1531-1543). This report also serves as initial scoping comments to federal and state resource agencies for use in their permitting and/or certification processes for these projects. The following is applicable to all the projects listed above except Item #5, B-3045. Stokes County is in an area of the state under the jurisdiction of the Services' Asheville Office. They should be contacted for resource information pertinent to this project.

The mission of the Service is to provide leadership in the conservation, protection, and enhancement of fish and wildlife, and their habitats, for the continuing benefit of all people. Due to staffing limitations, we are unable to provide you with detailed site-specific comments at this time. However, the following recommendations are provided to assist you in your planning process and to facilitate a thorough and timely review of the project.

Generally, the Service recommends that wetland impacts be avoided and minimized to the maximum extent practical as outlined in Section 404 (b)(1) of the Clean Water Act Amendments of 1977. In regard to avoidance and minimization of impacts, we recommend that proposed highway projects be aligned along or adjacent to existing roadways, utility corridors, or previously developed areas in order to minimize habitat fragmentation and encroachment. Areas exhibiting high biodiversity or ecological value important to the watershed and/or region should be avoided. Crossings of streams and associated wetland systems should use existing crossings and/or occur on a structure wherever feasible. Where bridging is not feasible, culvert structures that maintain natural water flows and hydraulic regimes without scouring, or impeding fish and wildlife passage, should be employed. Highway shoulder and median widths should be reduced through wetland areas. Roadway embankments and fill areas should be stabilized by using appropriate erosion control devices and/or techniques. Wherever appropriate, construction in sensitive areas should occur outside fish spawning and migratory bird nesting seasons.

The National Wetlands Inventory (NWI) maps of the appropriate 7.5 Minute Quadrangles for each site should be consulted to determine if wetlands may be impacted by the respective projects. However, while the NWI maps are useful for providing an overview of a given area, they should not be relied upon in lieu of a detailed wetland delineation by trained personnel using an acceptable wetland classification methodology.

We reserve the right to review any required federal or state permits that may be required for these projects at the public notice stage. We may have no objection, provide recommendations for modification of the project, or recommend denial. Therefore, it is important that resource agency coordination occur early in the planning process in order to resolve any conflicts that may arise and minimize delays in project implementation.

In addition to the above guidance, we recommend that the environmental documentation for each project include the following in sufficient detail to facilitate a thorough review of the action:

1. A clearly defined purpose and need for each proposed project, including a discussion of the projects's independent utility;

2. A description of the proposed action with an analysis of all alternatives being considered, including the upgrading of existing bridges, new bridges on existing alignments, new bridges on new alignments, and a "no action" alternative;

3. A description of the fish and wildlife resources, and their habitats, within the project impact areas that may be directly or indirectly affected;

4. The extent and acreage of waters of the U.S., including wetlands, that are to be impacted by filling, dredging, clearing, ditching, and/or draining. Acres of wetland impact should be differentiated by habitat type based on the wetland classification scheme of the National Wetlands Inventory (NWI). Wetland boundaries should be determined by using the 1987 Corps of Engineers Wetlands Delineation Manual and verified by the U.S. Army Corps of Engineers (Corps);

5. The anticipated environmental impacts, both temporary and permanent, that would be likely to occur as a direct result of the proposed project. The assessment should also include the extent to which the proposed project would result in secondary impacts to natural resources, and how this and similar projects contribute to cumulative adverse effects;

6. Design features and/or construction techniques which would be employed to avoid or minimize the fragmentation or direct loss of wildlife habitat value;

7. Design features, construction techniques, and/or any other mitigation measures which would be employed at wetland crossings and stream channel relocations to avoid or minimize impacts to waters of the United States; and,

8. If unavoidable wetland impacts are proposed, we recommend that every effort be made to identify compensatory mitigation sites in advance. Project planning should include a detailed compensatory mitigation plan for offsetting unavoidable wetland impacts. Opportunities to protect mitigation areas in perpetuity, preferably via conservation easement, should be explored at the outset.

The attached pages identify the federally-listed endangered, threatened, and candidate species that are known to occur in the respective Counties. Habitat requirements for any federally-listed species that occur in the project impact areas should be compared with the available habitat at the project site. If suitable habitat is present within the action area of the project, field surveys for the species should be performed. Listed species have been known to occur in the vicinity of two of the bridge replacement sites.

The red-cockaded woodpecker (RCW) (*Picoides borealis*) is known from the vicinity of project B-2938, Carteret/Onslow Counties. In addition to the recommendations listed below, if the proposed project will be removing pines 9" DBH or greater, or 30 years of age in pine or pine/hardwood habitat, surveys should be conducted for active RCW cavity trees in appropriate habitat within a 0.5 mile radius of project boundaries. If the RCW is observed within the project area or active cavity trees are found, the project has the potential to affect the RCW, and you should contact this office for further information.

The Tar spinymussel (*Elliptio steinstansana*) has been recorded upstream of project B-2965, Edgecombe County. A mussel survey should be conducted at the proposed bridge replacement site, covering 100 meters upstream, and 400 meters downstream of the crossing. In addition, the applicant must implement the following measures to insure protection for all aquatic resources occurring downstream:

1. Installation of instream silt curtain weighted at the bottom, and stringent bank erosion control. If tree removal is required, stumps and roots should remain intact for bank stabilization;

2. Instream construction activities should be initiated only during low flow conditions that permit the effective deployment of the silt curtain; and,

3. Before stream crossings are to begin, the contractor should notify the Service within one week of the construction initiation date. The Service would like the opportunity to inspect the installation of the silt curtain and check any possible changes in stream flow conditions when scheduling allows.

Environmental documentation should include survey methodologies and results. In addition to this guidance, the following information should be included in the document regarding protected species:

1. A map and description of the specific area used in the analysis of direct, indirect, and cumulative impacts;

2. A description of the biology and status of the listed species and the habitat of the species that may be affected by the action, including the results of any onsite inspections;

3. An analysis of the "effects of the action" on the listed species and associated habitat which includes consideration of:

   a. The environmental baseline which is an analysis of the effects of past and ongoing human and natural factors leading to the current status of the species and its habitat;

   b. The impacts of past and present federal, state, and private activities in the project area and cumulative impacts area;

   c. The direct and indirect impacts of the proposed action. Indirect effects are those that are caused by the proposed action and are later in time, but are still reasonably certain to occur;

   d. The impacts of interrelated actions (those that are part of a larger action and depend on the larger action for their justification) and interdependent actions (those that have no independent utility apart from the action under consideration); and,

   e. The cumulative impacts of future state and private activities (not requiring federal agency involvement) that will be considered as part of future Section 7 consultation;

4. A description of the manner in which the action may affect any listed species or associated habitat including project proposals to reduce/eliminate adverse effects. Direct mortality, injury, harassment, the loss of habitat, and/or the degradation of habitat are all ways in which listed species may be adversely affected;

5. A summary of evaluation criteria to be used as a measure of potential effects. Criteria may include post-project population size, long-term population viability, habitat quality, and/or habitat quantity; and,

6. Based on evaluation criteria, a determination of whether the project is not likely to adversely affect or may affect threatened and endangered species.

Candidate species are those plant and animal species for which the Service has sufficient information on their biological status and threats to their survival to propose them as endangered or threatened under the ESA. Although candidate species receive no statutory protection under the ESA, Federal agencies are required to informally confer with the Service on actions likely to jeopardize the continued existence of these species or that may destroy or modify proposed critical habitat.

Federal species of concern (FSC) include those species for which the Service does not have enough scientific information to support a listing proposal or species which do not warrant listing at the present time. These species receive no statutory protection under the ESA, but could become candidates in the future if additional scientific information becomes available indicating that they are endangered or threatened. Formal listing places the species under the full protection of the ESA, and necessitates a new survey if its status in the project area is unknown. Therefore, it would be prudent for the North Carolina Department of Transportation (NCDOT) to avoid any adverse impacts to candidate species or their habitat. The North Carolina Natural Heritage Program should be contacted for information on species under state protection.

The Service appreciates the opportunity to comment on this project. Please continue to advise us during the progression of the planning process, including your official determination of the impacts of this project. If you have any questions regarding these comments, please contact Tom McCartney at 919-856-4520, ext. 32.

Sincerely,

John M. Hefner
Field Supervisor

Enclosures

cc:
COE, Mike Bell, Washington, NC
COE, Eric Alsmeyer, Raleigh, NC
COE, Scott McLendon, Wilmington, NC
NCDWQ, John Dorney, Raleigh, NC
FHWA, Nicholas Graf, Raleigh, NC
EPA, Ted Bisterfield, Atlanta, GA

FWS/R4:TMcCartney:TM:06/16/98:919/856-4520 extension 32:\10-brdge.rpl

Mapping Symbols for Threatened and Endangered Species

Birds


Bald Eagle


Peregrine Falcon

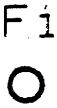

Piping Plover


Red-cockaded Woodpecker


Roseate Tern


Wood Stork

Fish


Cape Fear Shiner


Waccamaw Silverside

Mussels


Dwarf-wedge Mussel


Tar Spinymussel

Mammals


Eastern Cougar


Red Wolf

Plants


American Chaffseed


Harperella


Michaux's Sumac


Pondberry


Rough-leaved Loosestrife


Schweinitz's Sunflower


Seabeach Amaranth


Sensitive Joint-vetch

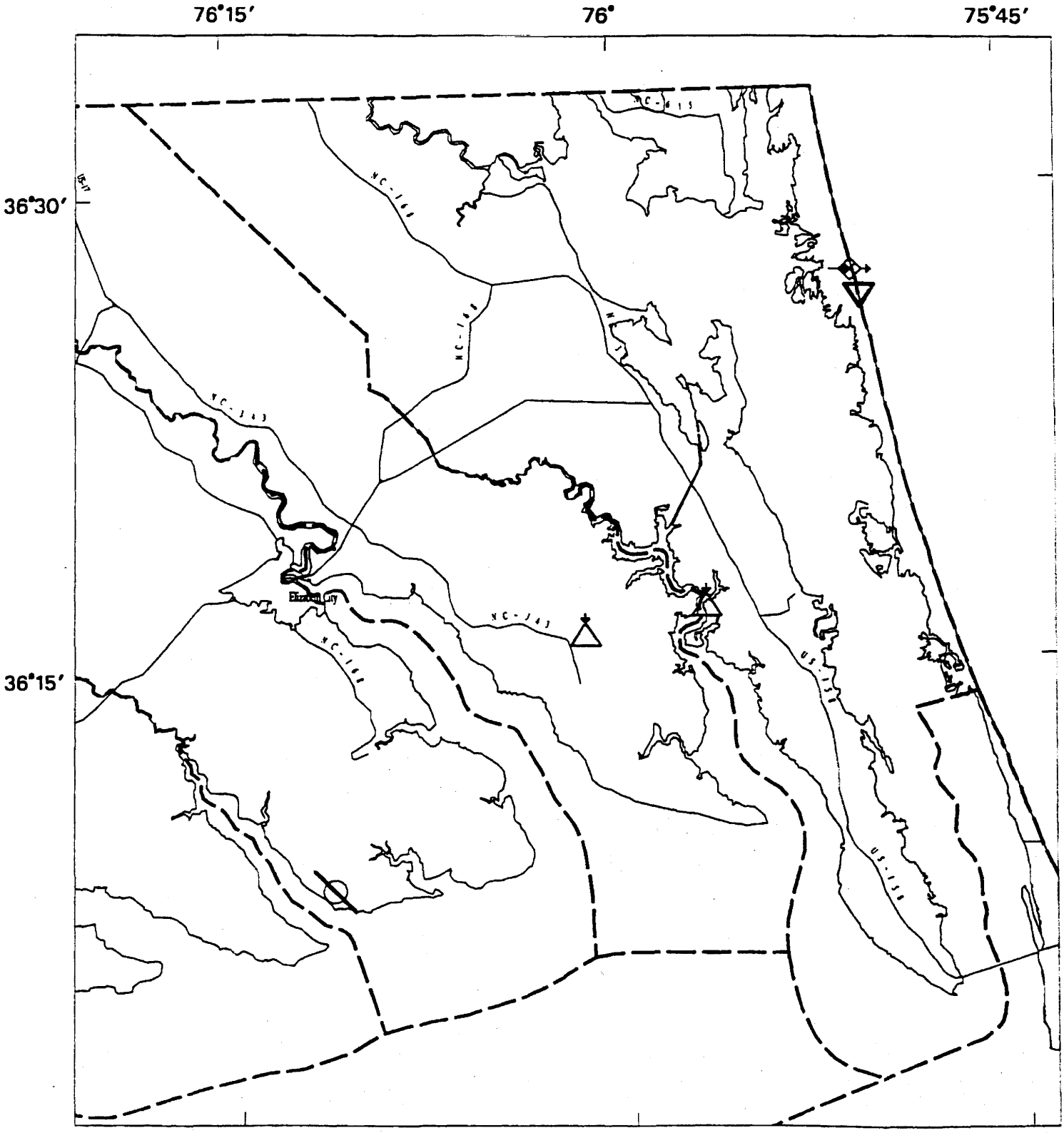

Small Whorled Pogonia


Smooth Coneflower

Seaturtles are seasonally ubiquitous along coastal regions, and therefore, are not labeled. Shortnosed Sturgeon and Manatees are seasonally ubiquitous in estuarine areas and are also not labeled.

Accounts of Selected Federally Listed Species In CURRITUCK County

Data represented on these maps are not based on comprehensive inventories of this county. Lack of data must not be construed to mean that listed species are not present.



Prepared by U.S. Fish and Wildlife Service
based on data provided by NC Natural Heritage Program
D. Newcomb, K. Tripp 1/15/98

0 1 2 3 4 5 MILES
0 1 2 3 4 5 KILOMETERS

expires 1/31/99

North Carolina Wildlife Resources Commission

512 N. Salisbury Street, Raleigh, North Carolina 27604-1188, 919-733-3391
Charles R. Fullwood, Executive Director

MEMORANDUM

TO: Stacy Harris, PE, Project Manager
Project Development and Environmental Analysis Branch, NCDOT

FROM: David Cox, Highway Project Coordinator
Habitat Conservation Program

DATE: July 28, 1999

SUBJECT: North Carolina Department of Transportation (NCDOT) Bridge Demolition Projects B-2938, B-2950, B-2965, B-3045, and B-3230.

We have reviewed the information provided by you regarding the subject bridge demolition projects. These projects were reviewed during the scoping process and we preformed site visits as needed.

After reviewing the new information we do not object to the projects as proposed, provided that the new Bridge Demolition and Removal Best Management Practices are followed. If we can be of any further assistance please call me at (919) 528-9886.

cc: David Franklin, Special Projects Manager, USACOE, Wilmington

North Carolina Wildlife Resources Commission

512 N. Salisbury Street, Raleigh, North Carolina 27604-1188, 919-733-3391
Charles R. Fullwood, Executive Director

MEMORANDUM

TO: Stacy Baldwin, Project Planning Engineer
Planning & Environmental Branch , NCDOT

FROM: David Cox, Highway Project Coordinator
Habitat Conservation Program

DATE: July 27, 1998

SUBJECT: NCDOT Group XVII Bridge Replacements

Biologists with the N. C. Wildlife Resources Commission (NCWRC) have reviewed the information provided and have the following preliminary comments on the subject project. Our comments are provided in accordance with provisions of the National Environmental Policy Act (42 U.S.C. 4332(2)(c)) and the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661-667d).

On bridge replacement projects of this scope our standard recommendations are as follows:

1. We generally prefer spanning structures. Spanning structures usually do not require work within the stream and do not require stream channel realignment. The horizontal and vertical clearances provided by bridges allows for human and wildlife passage beneath the structure, does not block fish passage, and does not block navigation by canoeists and boaters.

2. Bridge deck drains should not discharge directly into the stream.

3. Live concrete should not be allowed to contact the water in or entering into the stream.

4. If possible, bridge supports (bents) should not be placed in the stream.

5. If temporary access roads or detours are constructed, they should be removed back to original ground elevations immediately upon the completion of the

project. Disturbed areas should be seeded or mulched to stabilize the soil and native tree species should be planted with a spacing of not more than 10'x10'. If possible, when using temporary structures the area should be cleared but not grubbed. Clearing the area with chain saws, mowers, bush-hogs, or other mechanized equipment and leaving the stumps and root mat intact, allows the area to revegetate naturally and minimizes disturbed soil.

6. A clear bank (riprap free) area of at least 10 feet should remain on each side of the steam underneath the bridge.

7. In trout waters, the N.C. Wildlife Resources Commission reviews all U.S. Army Corps of Engineers nationwide and general '404' permits. We have the option of requesting additional measures to protect trout and trout habitat and we can recommend that the project require an individual '404' permit.

8. In streams that contain threatened or endangered species, NCDOT biologist Mr. Tim Savidge should be notified. Special measures to protect these sensitive species may be required. NCDOT should also contact the U.S. Fish and Wildlife Service for information on requirements of the Endangered Species Act as it relates to the project.

9. In streams that are used by anadromous fish, the NCDOT official policy entitled "Stream Crossing Guidelines for Anadromous Fish Passage (May 12, 1997)" should be followed.

10. In areas with significant fisheries for sunfish, seasonal exclusions may also be recommended.

If corrugated metal pipe arches or concrete box culverts are used:

1. The culvert must be designed to allow for fish passage. Generally, this means that the culvert or pipe invert is buried at least 1 foot below the natural stream bed. If multiple cells are required the second and/or third cells should be placed so that their bottoms are at stream bankful stage (similar to Lyonsfield design). This will allow sufficient water depth in the culvert or pipe during normal flows to accommodate fish movements. If culverts are long, baffle systems are required to trap gravel and provide resting areas for fish and other aquatic organisms.

2. If multiple pipes or cells are used, at least one pipe or box should be designed to remain dry during normal flows to allow for wildlife passage.

3. Culverts or pipes should be situated so that no channel realignment or widening is required. Widening of the stream channel at the inlet or outlet of structures usually causes a decrease in water velocity causing sediment deposition that will require future maintenance.

4. Riprap should not be placed on the stream bed.

In most cases, we prefer the replacement of the existing structure at the same location with road closure. If road closure is not feasible, a temporary detour should be designed and located to avoid wetland impacts, minimize the need for clearing and to avoid destabilizing stream banks. If the structure will be on a new alignment, the old structure should be removed and the approach fills removed from the 100-year

floodplain. Approach fills should be removed down to the natural ground elevation. The area should be stabilized with grass and planted with native tree species. If the area that is reclaimed was previously wetlands, NCDOT should restore the area to wetlands. If successful, the site may be used as wetland mitigation for the subject project or other projects in the watershed.

Project specific comments:

1. B-2938 - The bridge should be replaced with a spanning structure, in place with an off-site detour. This area of the White Oak River is a primary nursery area and is closed to shellfishing. There is a fringe of salt marsh adjacent to the bridge on the North/West side which should be avoided. The White Oak River supports anadromous runs of striped bass, river herring, and American shad. No in-water work should occur from February 15 to September 30. This moratorium is longer than the standard anadromous fish moratorium due to the primary nursery area designation.

2. B-2950 - This bridge should be replaced with a spanning structure, in place with an off-site detour. Tulls Creek is designated as a primary nursery area. This creek is known to support anadromous runs of striped bass as well as quality runs of largemouth bass, sunfish and other gamefish. Our agency collects brood fish for largemouth bass restocking efforts from this section of Tulls Creek. Turbidity resulting from in-water work could damage critical freshwater spawning habitat not only in Tulls Creek but also in Tulls Bay. No in-water work should occur from February 15 to September 30. This moratorium is longer than the standard anadromous fish moratorium due to the primary nursery area designation. There are also several Bald eagle nests along Tulls Creek. If any trees are to be removed eagle nest surveys should be performed.

3. B-2965 - This bridge should be replaced in place with an off-site detour if possible. The Tar river supports important runs of anadromous striped bass, hickory shad, American shad and river herring. The standard anadromous fish moratorium, February 15 to June 15, will be required. Also the federally listed, endangered, Tar spineymussel occurs in the Tar River in the vicinity of the bridge. A survey for this species should be performed 100 meters above the bridge to 400 meters downstream of the bridge. Based on the results of this survey additional conservation measures may be required. (Contact NCDOT Biologist, Tim Savidge.)

4. B-3013 - No specific concerns.

5. B-3045 - No specific concerns.

6. B-3214 - No specific concerns.

7. B-3230 - Nice riffles which provide excellent fish habitat are located 20-30 meters upstream of Bridge No. 64. This area should be avoided during the bridge replacement.

8. B-3231 - No specific concerns.

9. B-3256 - No specific concerns.

10. B-3380 - No specific concerns.

We request that NCDOT routinely minimize adverse impacts to fish and wildlife resources in the vicinity of bridge replacements. The NCDOT should install and maintain sedimentation control measures throughout the life of the project and prevent wet concrete from contacting water in or entering into these streams. Replacement of bridges with spanning structures of some type, as opposed to pipe or box culverts, is recommended in most cases. Spanning structures allow wildlife passage along streambanks, reducing habitat fragmentation and vehicle related mortality at highway crossings.

If you need further assistance or information on NCWRC concerns regarding bridge replacements, please contact me at (919) 528-9886. Thank you for the opportunity to review and comment on these projects.

State of North Carolina
Department of Environment
and Natural Resources
Division of Marine Fisheries

James B. Hunt, Jr., Governor
Wayne McDevitt, Secretary
Preston P. Pate, Jr., Director

NCDENR
NORTH CAROLINA DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES

MEMORANDUM:

TO: Richard B. Davis, NC DOT

THROUGH: P. A. Wojciechowski, Permit Review Coordinator

FROM: Sara E. Winslow, Biologist Supervisor

SUBJECT: Bridge Replacement – B-2950 Currituck County – Bridge No. 4 on SSR 1222 over Tulls Creek

DATE: 11 June 11, 1998

The following comments by the North Carolina Division of Marine Fisheries are provided pursuant to General Statute 113-131.

Tulls Bay and Tulls Creek functions as a spawning and nursery area for blueback herring and alewife. These areas are also utilized as a nursery area for spot, croaker, flounder, white perch, yellow perch, blue crabs and other commercially and recreationally important species. The N.C. Wildlife Resources Commission has designated the area as an Inland Primary Nursery Area.

Submerged aquatic vegetation exists throughout the area. This SAV habitat provides protection, nursery area and forage species for finfish listed above.

This agency will request a construction moratorium associated with the bridge replacement. The requested time period is 15 February through 30 September. This will ensure the environmental integrity of the area is protected during critical times of usage.

State of North Carolina
Department of Environment,
Health and Natural Resources
Division of Water Quality

James B. Hunt, Jr., Governor
Jonathan B. Howes, Secretary
A. Preston Howard, Jr., P.E., Director

DEHNR

February 26, 1997

MEMORANDUM

To: Mr. H. Franklin Vick, P.E., Manager, NCDOT, Planning & Environmental Branch

From: Cyndi Bell, NC Division of Water Quality CLB

Subject: Water Quality Checklist for Bridge Replacement Projects

Reference your correspondence dated January 21, 1997, in which you requested scoping comments for five bridge replacement projects. As I will be unable to attend the scoping meeting for these projects on March 11, 1997, I am forwarding these comments to you and the appropriate project engineers in writing. The Division of Water Quality requests that NCDOT consider the following generic environmental commitments for design and construction of bridge replacements:

A. DWQ requests that DOT strictly adhere to North Carolina regulations entitled "Design Standards in Sensitive Watersheds" (15A NCAC 04B .0024) throughout design and construction for this project in the area that drains to streams having WS (Water Supply), ORW (Outstanding Resource Water), HQW (High Quality Water), B (Body Contact), SA (Shellfish Water) or Tr (Trout Water) classifications to protect existing uses.

B. DWQ requests that bridges be replaced on existing location with road closure, when practical. If an on-site detour is necessary, remediation measures in accordance with DWQ requirements for General 401 Certification 2726/Nationwide Permit No. 33 (Temporary Construction, Access and Dewatering) must be followed.

C. DWQ requests that hazardous spill catch basins be installed at any bridge crossing a stream classified as HQW or WS (Water Supply). The number of catch basins installed should be determined by the design of the bridge, so that runoff would enter said basin(s) rather than directly flowing into the stream.

D. To the maximum extent practicable, DOT should not install the bridge bents in the creek.

E. Wetland impacts should be avoided (including sediment and erosion control structures/measures) to the maximum extent practical. If this is not possible, alternatives that minimize wetland impacts should be chosen. Mitigation for unavoidable impacts will be required by DWQ if impacts exceed one acre. Smaller impacts may require mitigation by the U.S. Army Corps of Engineers.

F. Borrow/waste areas should not be located in wetlands. It is likely that compensatory mitigation will be required if wetlands are impacted by waste or borrow.

G. DWQ prefers replacement of bridges with bridges. If the new structure is to be a culvert, it should be countersunk to allow unimpeded fish passage through the crossing.

H. If foundation test borings will be required, this should be noted in the document. Geotechnical work is approved under General 401 Certification Number 3027/Nationwide Permit No. 6 for Survey Activities. Written concurrence from the North Carolina Wildlife Resources Commission and U.S. Army Corps of Engineers is required in designated mountain trout counties.

I. If this project is processed as a Categorical Exclusion, NCDOT is reminded that mitigation will be required if wetland impacts exceed one acre, in accordance with DWQ Wetland Rules {15A NCAC 2H.0506 (h)(2)}.

The attached table has been prepared by DWQ for your assistance in studying the systems involved in these bridge replacements. This information includes the DWQ Index Number, DWQ Stream Classification, river basin, and preliminary comments for each crossing. Please note that National Wetland Inventory (NWI) map references are not to be replaced by onsite wetland determinations by qualified biologists.

Thank you for your request for DWQ input. DOT is reminded that issuance of a 401 Water Quality Certification requires satisfaction of water quality concerns, to ensure that water quality standards are met and designated uses are not lost or degraded. Questions regarding the 401 Certification or other water quality issues should be directed to Cyndi Bell at (919) 733-1786 in DWQ's Water Quality Environmental Sciences Branch.

cc: Michelle Suverkrubbe
Melba McGee
Jeff Ingham
Bill Goodwin
John Williams

B1443.DOC

North Carolina Department of Cultural Resources

James B. Hunt Jr., Governor
Betty Ray McCain, Secretary

Division of Archives and History
Jeffrey J. Crow, Director

June 18, 1998

MEMORANDUM

TO: William D. Gilmore, P.E., Manager
Planning and Environmental Branch
Division of Highways
Department of Transportation

FROM: David Brook
Deputy State Historic Preservation Officer

SUBJECT: Bridge Group XVII, Bridge 4 on SR 1222 over Tull Creek, Currituck County, B-2950, ER 98-9259

Thank you for your memorandum of June 5, 1998, concerning the above project.

On May 28, 1998, members of our staff met with representatives of the North Carolina Department of Transportation to review photographs of properties within the project's area of potential effect. Based upon our review of the photographs, we are aware of no historic structures in the area of potential effect, and recommend that no additional historic architectural survey be conducted for this project.

There are no known archaeological sites within the proposed project area. Based on our present knowledge of the area, it is unlikely that any archaeological resources which may be eligible for inclusion in the National Register of Historic Places will be affected by the project construction. We, therefore, recommend that no archaeological investigation be conducted in connection with this project.

The above comments are made pursuant to Section 106 of the National Historic Preservation Act and the Advisory Council on Historic Preservation's Regulations for Compliance with Section 106 codified at 36 CFR Part 800.

Thank you for your cooperation and consideration. If you have questions concerning the above comment, please contact Renee Gledhill-Earley, environmental review coordinator, at 919/733-4763.

DB:slw

cc: N. Graf
B. Church
T. Padgett

State of North Carolina
Department of Environment
and Natural Resources
Division of Water Quality

James B. Hunt, Jr., Governor
Wayne McDevitt, Secretary
A. Preston Howard, Jr., P.E., Director

June 19, 1998

MEMORANDUM

To: Richard B. Davis, P.E., Assistant Manager
Planning and Environmental Branch

From: Cyndi Bell

Subject: Request for Comments for Group XVII Bridge Replacement Projects

Reference is made to your memorandum of June 5, 1998, in which you requested early scoping comments for ten bridge replacement projects. Of the ten bridges on your list, only five involve streams, while the other five are railroad bridges. Please see the attached Water Quality Checklist for Bridge Replacement Projects for general recommendations. Based upon our records, Standard Sediment and Erosion Control measures will be acceptable for these fiver projects. I do ask that you investigate whether riparian wetlands are located at any of these crossings. The potential for occurrence of riparian wetlands is higher at B-2938, B-2950, and B-2965. Please note that we prefer bridging of riparian wetlands, especially if you are considering replacement of an existing bridge with a culvert.

Thank you for your inquiry. If you have any questions, please contact me at (919) 733-1786 or Cyndi_Bell@dem.ehnr.state.nc.us.

P.O. Box 29535, Raleigh, North Carolina 27626-0535 Telephone 919-733-5083 FAX 919-733-9919
An Equal Opportunity Affirmative Action Employer 50% recycled/ 10% post-consumer paper

State of North Carolina
Department of Environment
and Natural Resources
Division of Marine Fisheries

James B. Hunt, Jr., Governor
Wayne McDevitt, Secretary
Preston P. Pate, Jr., Director

NCDENR
North Carolina Department of
Environment and Natural Resources

MEMORANDUM:

TO: William D. Gilmore, P.E., Manager, NCDOT

FROM: Sara E. Winslow, Biologist Supervisor

SUBJECT: NCDOT Bridge Replacement - B-2950, Currituck County, Replace Bridge No. 4 on SR 1222 over Tull Creek

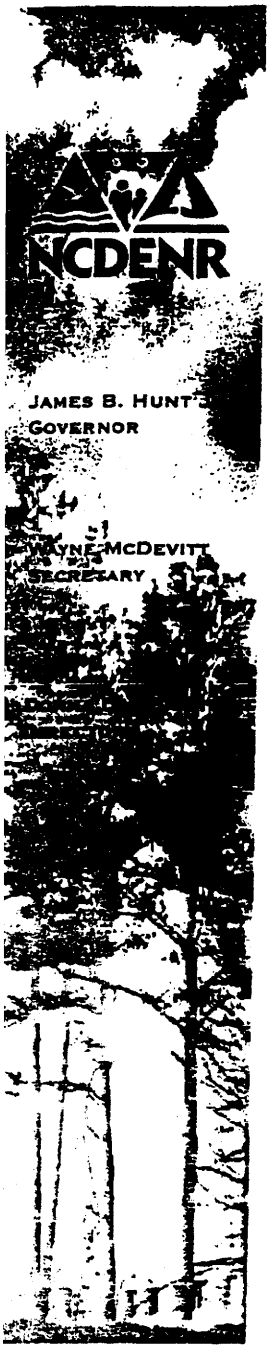
DATE: June 21, 1999

The North Carolina Division of Marine Fisheries submits the following comments relative to the replacement of Bridge No. 4.

Tull Creek and Bay functions as a spawning and nursery area for blueback herring and alewife. The importance of the area as a nursery has resulted in the Wildlife Resources Commission (WRC) designating the area as an Inland Primary Nursery Area (IPNA). Spot, croaker, weakfish, white perch, yellow perch, blue crabs and other commercially and recreationally important species utilize the area.

The Division understands that NCDOT will adhere to no in water work from February 15 through September 30. Will there be impacts to wetlands as a result of this work? Are SAV's found along either shoreline? Will SAV's be impacted. What method will be utilized to remove the bridge pilings?

This agency appreciates the opportunity to provide comments. If you have any questions, please contact me (1-800-338-7805 or 252-264-3911).



NORTH CAROLINA DEPARTMENT OF
ENVIRONMENT AND NATURAL RESOURCES

DIVISION OF COASTAL MANAGEMENT

September 24, 1999

Ms. Stacy Baldwin, P.E.
Project Development and Environmental Analysis Branch
State of North Carolina Department of Transportation
P.O. Box 25201
Raleigh, NC 27611-5201

Dear Ms. Baldwin:

SUBJECT: Request for Comments on NC DOT Bridge Replacement Project B-2950, Replace Bridge No. 4 on SR 1222 over Tulls Creek, Currituck County.

Regulatory staff at the Division of Coastal Management (DCM) have reviewed the Department of Transportation's request for comments on the project referenced above. We have considered the potential impact of the proposed project's alternatives upon Areas of Environmental Concern near the project, and we concur with the recommended Alternate C. DCM staff agree that this project can proceed as a Categorical Exclusion.

In accordance with the Coastal Area Management Act, this project will require a major permit from the Division of Coastal Management prior to construction. During the permitting process, we may have additional comments on the project's environmental impacts, and may place conditions on the permit to minimize any environmental impacts. The concurrence in this letter shall not preclude us from requesting additional information throughout the permitting process, and following normal permitting procedures.

Please call me at (919) 733-2293 x 238 if you have any questions or concerns.

Sincerely,

Cathy Brittingham

Cathy Brittingham
Transportation Project Coordinator

cc: Pam Williams, Wang Engineering Company
Ed Harrell, NC Division of Coastal Management

1638 MAIL SERVICE CENTER, RALEIGH, NC 27699-1638
2728 CAPITAL BLVD., RALEIGH, NC 27604
PHONE 919-733-2293 FAX 919-733-1495

North Carolina Department of Cultural Resources

James B. Hunt Jr., Governor
Betty Ray McCain, Secretary

Division of Archives and History
Jeffrey J. Crow, Director

June 18, 1998

MEMORANDUM

TO: William D. Gilmore, P.E., Manager
Planning and Environmental Branch
Division of Highways
Department of Transportation

FROM: David Brook
Deputy State Historic Preservation Officer

SUBJECT: Bridge Group XVII, Bridge $_4$ on SR 1222 over Tull Creek, Currituck County, B-2950, ER 98-9259

Thank you for your memorandum of June 5, 1998, concerning the above project.

On May 28, 1998, members of our staff met with representatives of the North Carolina Department of Transportation to review photographs of properties within the project's area of potential effect. Based upon our review of the photographs, we are aware of no historic structures in the area of potential effect, and recommend that no additional historic architectural survey be conducted for this project.

There are no known archaeological sites within the proposed project area. Based on our present knowledge of the area, it is unlikely that any archaeological resources which may be eligible for inclusion in the National Register of Historic Places will be affected by the project construction. We, therefore, recommend that no archaeological investigation be conducted in connection with this project.

The above comments are made pursuant to Section 106 of the National Historic Preservation Act and the Advisory Council on Historic Preservation's Regulations for Compliance with Section 106 codified at 36 CFR Part 800.

Thank you for your cooperation and consideration. If you have questions concerning the above comment, please contact Renee Gledhill-Earley, environmental review coordinator, at 919/733-4763.

DB:slw

cc: N. Graf
B. Church
T. Padgett

Federal Aid # BRZ-1222(2) *TIP* # B-2950 *County*: Currituck

CONCURRENCE FORM FOR PROPERTIES NOT ELIGIBLE FOR THE NATIONAL REGISTER OF HISTORIC PLACES

Project Description: Replace Bridge No. 4 on SR 1222 over Tulls Creek (Bridge Group 17)

On May 28, 1998, representatives of the

☒ North Carolina Department of Transportation (NCDOT)
☐ Federal Highway Administration (FHWA)
☒ North Carolina State Historic Preservation Office (SHPO)
☐ Other

reviewed the subject project at

☐ Scoping meeting
☒ Historic architectural resources photograph review session/consultation
☐ Other

All parties present agreed

☐ there are no properties over fifty years old within the project's area of potential effects.

☒ there are no properties less than fifty years old which are considered to meet Criteria Consideration G within the project's area of potential effects.

☒ there are properties over fifty years old within the project's area of potential effects, but based on the historical information available and the photographs of each property, the properties identified as **Properties 1, 2, and 3** are considered not eligible for the National Register and no further evaluation of them is necessary.

☒ there are no National Register-listed properties within the project's area of potential effects.

Signed:

Representative, NCDOT — Date: 5-28-98

FHWA, for the Division Administrator, or other Federal Agency — Date: 6/2/98

Representative, SHPO — Date: 5/28/98

State Historic Preservation Officer — Date: 6/18/98

If a survey report is prepared, a final copy of this form and the attached list will be included.

COUNTY OF CURRITUCK

Post Office Box 39
Currituck, North Carolina 27929-0039
Telephone (919) 232-2075 / FAX (919) 232-3551
State Courier # 10-69-17

June 22, 1998

Mr. Richard B. Davis
Assistant Manager
Planning and Environmental Branch
NCDOT
P. O. Box 25201
Raleigh, NC 27611-5201

RE: NCDOT Bridge Replacement: Bridge No. 4 on SR 1222 over Tulls Creek, Currituck County, TIP No. B-2950

Dear Mr. Davis:

Thank you for the opportunity to provide comment on replacement of the bridge over Tulls Creek on Tulls Creek Road (SR 1222). In this regard the County offers the following comments:

- Over the years Tulls Creek Road has experienced significant increases in traffic as a major alternative to NC 168 in the northern part of the County. As a result, the bridge width needs to recognize the substantial traffic and large number of trucks and buses which utilize this route.

- Tulls Creek is a major waterway of the County providing access to Tulls Bay and Currituck Sound. Therefore, the bridge needs to be designed to accommodate boat traffic.

- The existing bridge is located within a curve. If the decision is to replace the bridge at the existing site, a provision should be made for eliminating the existing curve.

Mr. Davis, I hope my comments have been helpful. If I or the County staff can provide any additional information, please don't hesitate to contact me.

Sincerely,

William S. Richardson
County Manager

WSR:
cc: Board of Commissioners
Jack Simoneau, Planning and Inspections Director

DEPARTMENT OF THE ARMY
WILMINGTON DISTRICT, CORPS OF ENGINEERS
P.O. BOX 1890
WILMINGTON, NORTH CAROLINA 28402-1890

October 12, 1999

IN REPLY REFER TO

Planning Services Section

Mr. William D. Gilmore, P.E., Manager
Project Development and
Environmental Analysis Branch
North Carolina Division of Highways
Post Office Box 25201
Raleigh, North Carolina 27611-5201

Dear Mr. Gilmore:

This is in response to a letter from your office dated June 16, 1999, to Mr. Mike Bell of our Washington Regulatory Field Office, subject: "Request for Comments on NCDOT Bridge Replacement Projects for Bridge Demolition and Removal over Waters of the U.S., Replace Bridge No. 4 on SR 1222 over Tull Creek, TIP No. B-2950, Currituck County" (Regulatory Division Action ID No. 199910208).

Our comments involve impacts to flood plains and jurisdictional resources that include waters, wetlands, and U.S. Army Corps of Engineers projects. The proposed bridge replacement would not cross a Corps-constructed flood control or navigation project. Enclosed are our comments on the other issues.

We appreciate the opportunity to comment on this project. If we can be of further assistance, please contact us.

Sincerely,

W. Coleman Long
Chief, Technical Services Division

Enclosure

U.S. ARMY CORPS OF ENGINEERS, WILMINGTON DISTRICT, COMMENTS ON:

"Request for Comments on NCDOT Bridge Replacement Projects for Bridge Demolition and Removal over Waters of the U.S., Replace Bridge No. 4 on SR 1222 over Tull Creek, TIP No. B-2950, Currituck County" (Regulatory Division Action ID No. 199910208)

1. **FLOOD PLAINS: POC – Bobby L. Willis, Planning Services Section at (910) 25104728**

Currituck County is a participant in the National Flood Insurance Program. Based on a review of Panel 175 of the November 1984 Flood Insurance Rate Map, the site of the proposed bridge replacement is located in the 100-year flood plain, with a 100-year flood elevation of 6 feet N.G.V.D. The source of flooding is coastal storm surge, and no floodway is defined at the site. We suggest that the county be contacted for compliance with their flood plain and other applicable ordinances.

2. **WATERS AND WETLANDS: POC – Michael Bell, Project Manager, Washington Field Office, Regulatory Division, at (252) 975-1616, Extension 26**

Mr. Mike Bell visited the site on July 21, 1999. The bridge is surrounded by Coastal Area Management Act (CAMA) marsh, which is prime wetland area. This office strongly discourages any temporary detours, and instead recommends building the new bridge in place. We recommend the use of existing roads for detour, since it is only a 3-4 mile detour to US 168.

All work restricted to existing high ground will not require prior Federal permit authorization. However, Department of the Army permit authorization pursuant to Section 404 of the Clean Water Act of 1977, as amended, will be required for the discharge of excavated or fill material in waters of the United States or any adjacent and/or isolated wetlands in conjunction with your proposed bridge replacements, including disposal of construction debris. Specific permit requirements will depend on design of the projects, extent of fill work within waters of the United States, including wetlands (dimensions, fill amounts, etc.), construction methods, and other factors.

Although this project may qualify as a Categorical Exclusion, in order for the proposal to be considered for authorization under Nationwide Permit #23, the project planning report should contain sufficient information to document that the proposed activity does not have more than a minimal individual or cumulative impact on the aquatic environment. Our experience has shown that replacing bridges with culverts often results in sufficient adverse impacts to consider the work as having more than minimal impacts on the aquatic environment. Accordingly, the following items need to be addressed in the project planning report:

a. The report should contain the amount of permanent and temporary impacts to waters and wetlands as well as a description of the type of habitat that will be affected.

b. Offsite detours are always preferable to onsite (temporary) detours in wetlands, especially in this case. If an onsite detour is the recommended action, justification must be provided.

2. **WATERS AND WETLANDS: (Continued)**

c. Project commitments should include the removal of all temporary fills from waters and wetlands and "time-of-year" restrictions on in-stream work if recommended by the North Carolina Wildlife Resources Commission. In addition, if undercutting is necessary for temporary detours, the undercut material should be stockpiled to be used to restore the site.

d. All restored areas should be planted with endemic vegetation, including trees, if appropriate.

e. The report should provide an estimate of the linear feet of new impacts to streams resulting from construction of the project.

f. If a bridge is proposed to be replaced with a culvert, NCDOT must demonstrate that the work will not result in more than minimal impacts on the aquatic environment, specifically addressing the passage of aquatic life, including anadromous fish. In addition, the report should address the impacts that the culvert would have on recreational navigation.

g. To be considered for authorization, discharge of demolition material into waters and wetlands and associated impacts must be disclosed and discussed in the project planning report.

At this time, construction plans are not available for review. When final plans are complete, including the extent and location of any work within waters of the United States and wetlands, our Regulatory Division would appreciate the opportunity to review those plans for a project-specific determination of DA permit requirements.

If you have questions or need further information, please contact Mr. Bell.

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Raleigh Field Office
Post Office Box 33726
Raleigh, North Carolina 27636-3726

June 9, 2003

Dr. Gregory J. Thorpe
North Carolina Department of Transportation
Project Development and Environmental Analysis
1548 Mail Service Center
Raleigh, North Carolina 27699-1548

Dear Dr. Thorpe:

This letter is in response to your letter of May 29, 2003, which provided the U.S. Fish and Wildlife Service (Service) with the biological conclusion of the North Carolina Department of Transportation (NCDOT) that the replacement of Bridge No. 4 on SR 1222 over Tulls Creek in Currituck County (B-2950) is not likely to adversely affect the federally-threatened bald eagle (*Haliaeetus leucocephalus*). These comments are provided in accordance with section 7 of the Endangered Species Act (ESA) of 1973, as amended (16 U.S.C. 1531-1543).

According to the information you submitted, a survey was conducted on March 7, 2003 by canoe and by driving accessible roads within the area. The primary zone (1500 feet from the project area) was surveyed both upstream and downstream of the existing bridge. In addition, five aerial sweeps were made over the bridge site and surrounding area on May 21, 2003 from a small plane at an altitude of 300 to 400 feet. No eagles or eagle nests were observed during either survey.

Based on the negative survey results, the Service concurs with your conclusion that the proposed bridge replacement is not likely to adversely affect the bald eagle. We believe that the requirements of section 7 (a)(2) of the ESA have been satisfied. We remind you that obligations under section 7 consultation must be reconsidered if: (1) new information reveals impacts of this identified action that may affect listed species or critical habitat in a manner not previously considered in this review; (2) this action is subsequently modified in a manner that was not considered in this review; or (3) a new species is listed or critical habitat determined that may be affected by this identified action.

The Service appreciates the opportunity to review this project. If you have any questions regarding our response, please contact Mr. Gary Jordan at (919) 856-4520 (Ext. 32).

Sincerely,

Garland B. Pardue

Garland B. Pardue, Ph.D.
Ecological Services Supervisor

cc: Bill Biddlecome, USACE, Washington, NC
Dave Franklin, USACE, Wilmington, NC
John Hennessy, NCDWQ, Raleigh, NC
Travis Wilson, NCWRC, Creedmore, NC
Chris Militscher, USEPA, Raleigh, NC

RELOCATION REPORT

North Carolina Department of Transportation
AREA RELOCATION OFFICE

[X] E.I.S. [ ] CORRIDOR [ ] DESIGN

PROJECT:	8.1290601	COUNTY	Currituck	Alternate	F of	Alternate
I.D. NO.:	B-2950	F.A. PROJECT	N/A			
DESCRIPTION OF PROJECT:	Replace Bridge No. 4 on SR 1222 over Tull's Creek Bridge					

ESTIMATED DISPLACEES

Type of Displacees	Owners	Tenants	Total	Minorities
Residential	1		1	
Businesses	1		1	
Farms				
Non-Profit				

INCOME LEVEL

0-15M	15-25M	25-35M	35-50M	50 UP
		1		

VALUE OF DWELLING			DSS DWELLING AVAILABLE			
Owners		Tenants	For Sale		For Rent	
0-20M	1	$ 0-150	0-20M	*	$ 0-150	*
20-40M		150-250	20-40M	5	150-250	
40-70M		250-400	40-70M	26	250-400	12
70-100M		400-600	70-100M	24	400-600	4
100 UP		600 UP	100 UP	35	600 UP	3
TOTAL	1			90		19

ANSWER ALL QUESTIONS

Yes	No		*Explain all "YES" answers.*
	X	1.	Will special relocation services be necessary?
	X	2.	Will schools or churches be affect by displacement?
	X	3.	Will business services still be available after project?
X		4.	Will any business be displaced? If so, indicate size, type, estimated number of employees, minorities, etc.
	X	5.	Will relocation cause a housing shortage?
X		6.	Source for available housing (list).
	X	7.	Will additional housing programs be needed?
X		8.	Should Last Resort Housing be considered?
	X	9.	Are there large, disabled, elderly, etc. families?
	X	10.	Will public housing be needed for project?
		11.	Is public housing available?
X		12.	Is it felt there will be adequate DSS housing housing available during relocation period?
	X	13.	Will there be a problem of housing within financial means?
X		14.	Are suitable business sites available (list source).
		15.	Number months estimated to complete RELOCATION?

REMARKS (Respond by Number)

4 – 2SF Bus. – Marina – approximately 3,000 SF

6 & 14 Multiple listing services, newspapers, local realtors, etc.

8 – As mandated by State Law

The 1SFD located left of SS 35 + 00 is a lodge.

The HTR with wood siding located left of SS 32 + 80 is a residence.

*NOTE: 0-20m owner is a mobile home. There is ample supply of mobile home lots for rent and sale.

NOTE: Building located left of SS 29 + 20 is a hunting lodge.

Relocation Agent	Date	Approved by	Date
	6-28-01		

Form 15.4 Revised 02/95

Original & 1 Copy State Relocation Agent
2 Copy Area Relocation Office

(YELLOW)

APPENDIX D

DESIGN EXCEPTION

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

MICHAEL F. EASLEY
GOVERNOR

LYNDO TIPPETT
SECRETARY

MEMO TO: Ms. Debbie Barbour, PE
State Design Engineer

FROM: Jay A. Bennett, PE
State Roadway Design Engineer

DATE: July 26, 2002

SUBJECT: Project 8.2040301 (B-2950) Currituck County
F. A. Project BRZ-1222(2)
Bridge No. 4 on SR 1222 (Tulls Creek Rd.)
Over Tulls Creek

Request for Design Exception

This is a request for a design exception to the 2001 AASHTO standards for the horizontal SSD on the -L- line approaches to Bridge No. 4. The posted speed limit is 45 mph. The proposed horizontal SSD meets the AASHTO minimum required for a design speed of 35 mph. See attachment for pertinent information.

If you have any questions, please contact me or Sue Flowers, Project Engineer.

Garfield L. Foster, PE
Project Design Engineer

Dewayne L. Sykes, PE
Asst. State Roadway Engineer

Sue R. Flowers
Project Engineer

Jay A. Bennett, PE
State Roadway Design Engineer

JAB/glf
Attachment
cc: Sue R. Flowers
Haywood Daughtry, PE
D. W. (Chad) Edge, III, PE

APPROVED: D. M Barbour

DATE: 8-06-02

cc: Jay A. Bennett, PE
Sue R. Flowers

MAILING ADDRESS:
1582 MAIL SERVICE CENTER
RALEIGH NC 27699-1582

LOCATION:

NCDOT DESIGN EXCEPTION REQUEST
(Project does not require FHWA design approval)

F.A. Project No.: BRZ-1222(2) State Project No.: 8.2040301

TIP No.: B-2950 County: Currituck

Design Exception Requested for: Horizontal stopping sight distance (HSSD).

Location of Design Feature in Question: Curve on -L- line PI Sta 34+45.12 at the east end of Bridge No. 4.

PROJECT DATA

Current ADT (2003): 3,610 Design ADT (2023): 7,690

% Trucks: 5 Design Speed: 50 mph Posted Speed: 45 mph

Functional Classification: Rural Collector

Min. AASHTO Dimensions: 425' (HSSD) Dimensions Proposed: 270' (HSSD)

Total Estimated Cost of Project: $5,700,000

BASIS FOR EXCEPTION

1. Four (4) accidents were reported in the vicinity of Bridge No. 4 during the period from February 1, 1999 to January 31, 2002. One (1) rear end accident involved alcohol and drugs. One (1) was a sideswipe that occurred at night in the rain. Two (2) ran off the road, one hitting the bridge rail and the other hitting a fixed object. None of the accidents were fatal.

2. There are no known future plans for upgrading this roadway.

3. Existing SR 1222 within the project limits is an 18-ft paved two-lane facility with 6-ft wide grass shoulders. The eastern approach to the bridge is in an 8.5 degree curve. The bridge and western approach within the project limits are in a horizontal tangent. The existing profile is level and is good for the posted speed of 45 mph except at the existing bridge which has crest curve that is not desirable for the posted speed. There are no existing guardrails on the approaches to Bridge No. 4, and there have been reports of over flooding on the western approach during some high tides. Existing right-of-way is 60-ft and bordered by high quality marshlands, primary fish nursery canals, a marina, several residences and cultivated fields. Existing SR 1222 five miles prior to and after the project area is a typical rural collector found in level terrain. The horizontal and vertical alignment provides for safe travel at the posted 45 mph.

BASIS FOR EXCEPTION CONTINUED

4. To meet 425-ft horizontal SSD we would need a 19-ft shoulder on the north side of proposed Bridge No. 4 or flatten the eastern approach curve to a radius of 2300-ft. The proposed structure is 965-ft long which makes it cost prohibitive in having a 19-ft shoulder. The 19-ft shoulder and also a 2300-ft curve would result in additional roadway approach and right-of-way costs, and also additional impacts to the high quality wetlands within the project limits. We are proposing a 4-ft bridge offset, and a 764-ft horizontal curve with a .06 max superelevation on the eastern bridge approach. The AASHTO recommended max superelevation of .08 was not proposed because SR 1222 is located in very level terrain where this super is not typically used on 45 mph posted two-lane facilities.

   The .06 super proposed will be adequate for a 35 mph design speed using the .08 superelevation chart (2001 AASHTO Green Book pg. 161), and will also be adequate for the 45 mph posted speed limit using the .06 superelevation chart (2001 AASHTO Green Book pg.159, Ex 3-22).

5. The recommended mitigation measure is to post an advisory speed limit of 35 mph on the roadway approaches to proposed Bridge No. 4. Division 1 Traffic Engineers have been informed of and concurs with the recommended mitigation measure.

SR 1222

Currituck County

Bridge No. 4 Over Tull Creek

Federal-Aid Project No. BRZ-1222(2)

State Project No. 8.2040301

WBS No. 32773.1.1

T.I.P. No. B-2950

ADDENDUM TO

CATEGORICAL EXCLUSION

UNITED STATES DEPARTMENT OF TRANSPORTATION

FEDERAL HIGHWAY ADMINISTRATION

AND

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

DIVISION OF HIGHWAYS

APPROVED:

9/22/04
DATE

For Gregory J. Thorpe, Ph.D., Environmental Management Director
Project Development and Environmental
Analysis Branch, NCDOT

9/23/04
DATE

for John F. Sullivan, III, P. E.
Division Administrator, FHWA

SR 1222

Currituck County

Bridge No. 4 Over Tull Creek

Federal-Aid Project No. BRZ-1222(2)

State Project No. 8.2040301

WBS No. 32773.1.1

T.I.P. No. B-2950

CATEGORICAL EXCLUSION

September 2004

Document Prepared by:
Wang Engineering Company, Inc.

Greg S. Purvis, P.E.
Project Manager

James Wang, Ph.D., P.E.
Principal – in – Charge

NORTH CAROLINA PROFESSIONAL SEAL 22990 ENGINEER GREG S. PURVIS

9-14-04

For the North Carolina Department of Transportation

John Wadsworth, P.E.
Project Manager
Consultant Engineering Unit

PROJECT COMMITMENTS

Currituck County
SR 1222
Bridge No. 4 Over Tull Creek
Federal-Aid Project No. BRZ-1222(2)
State Project No. 8.2040301
WBS No. 32773.1.1
T.I.P. No. B-2950

In addition to the standard Nationwide Permit No. 23 Conditions, the General Nationwide Permit Conditions, Section 404 Only Conditions, Regional Conditions, State Consistency Conditions, NCDOT's Guidelines for Best Management Practices for Bridge Demolition and Removal, NCDOT's Guidelines for Best Management Practices for the Protection of Surface Waters, Design Standards in Sensitive Watersheds (15A NCAC 04B .0024) General Certification Conditions, and Section 401 Conditions of Certification, the following special commitments have been agreed to by NCDOT:

Division Engineer, Project Development & Environmental Analysis Branch, and Roadway Design Unit

The use of a 1.5:1 rock fill in the southwest quadrant canal will be investigated during the final design phase of the project to minimize aquatic impacts.

Bridge Demolition will be addressed at the time of the permit applications for CAMA, the COE and DWQ.

Tull Creek is designated as an Inland Primary Nursery Area. No in-water work will occur from February 15 to September 30, as requested in the North Carolina Department of Environment and Natural Resources (NCDENR) memorandum dated June 21, 1999.

The Stream Crossing Guidelines for Anadromous Fish Passage will be implemented, as applicable.

If any trees will be removed, bald eagle nest surveys will be performed as requested by the North Carolina Wildlife Resource Commission (NCWRC) in a memorandum dated July 27, 1998.

Construction activities will adhere to the guidelines outlined in the latest edition of Precautions For Construction In Areas Which May Be Used By The West Indian Manatee In North Carolina.

If the loggerhead sea turtle is observed in the project during construction, activities will cease until the turtle leaves.

The bridge will be constructed utilizing top-down construction.

Jetting will not be allowed as a construction method.

3:1 side slopes will be utilized due to the fact that they will be easier to maintain stability of the slope.

Bridge deck drains will not be allowed to discharge directly into the water.

Currituck County
SR 1222
Bridge No. 4 Over Tull Creek
Federal-Aid Project No. BRZ-1222(2)
State Project No. 8.2040301
WBS No. 32773.1.1
T.I.P. No. B-2950

I. BACKGROUND

Categorical Exclusion for the subject project was approved July 7, 2003. The recommended alternate was to replace Bridge No. 4 on new alignment downstream (north) of the existing bridge with a bridge as shown by Alternate F1 in Figure 2. During construction of the structure, traffic would be maintained on the existing structure. During construction of the approaches traffic would be routed off-site. Subsequent to the approval of the Categorical Exclusion local officials requested that a Citizens Informational Workshop be held. A Citizens Informational Workshop was held on October 29, 2003 at Moyock Elementary School where the build alternatives were reviewed and discussed with local officials and concerned citizens. Approximately 26 people attended the Citizen's workshop and 101 comment sheets were received subsequent to the workshop. Among local citizens concerns were loss of driveway access to the Edgar Evans property. Both local citizens and local officials were in favor of closing the road and replacing the existing bridge in the existing location while maintaining driveway access to the Edgar Evans property. Based on the input received from the Citizens Informational Workshop an additional alternate was developed. The revised recommended alternate, Alternative G, is described below.

II. DISCUSSION

Three build alternatives were studied for this project: Alternatives F1, F2 and G.

Alternate F1 involves replacing the bridge on new alignment downstream (north) of the existing bridge with a bridge. The proposed structure is approximately 965 feet in length, tangent, and does not include a vertical crest on the bridge. The approach curve to the bridge from the west is approximately 2,292 feet and from the east is approximately 764 feet. The length of the approach roadway will be approximately 2,233 feet. During construction of the structure, traffic will be maintained on the existing structure. During construction of the approaches, traffic will be routed off-site. Alternate F1 does not provide a driveway access to the marina. See figure 2 for Alternate F1.

Alternate F2 involves replacing the bridge on new alignment downstream (north) of the existing bridge with a bridge. The proposed structure is approximately 965 feet in length, tangent, and does not include a vertical crest on the bridge. The approach curve to the bridge from the west is approximately 2,292 feet and from the east is approximately 764 feet. The length of the approach roadway will be approximately 2,233 feet. During construction of the structure, traffic will be maintained on the existing structure. During construction of the approaches, traffic will be routed off-site. Alternate F2 provides a driveway access to the marina. See figure 2A for Alternate F2.

Alternate G involves replacing the bridge in the existing location. During construction traffic will be maintained on an off-site detour. The proposed structure is approximately 246 feet in length. The approach curve to the bridge from the east has a radius of 610 feet. The length of the approach roadway will be approximately 511 feet to the northwest and 618 feet to the southeast. Alternate G provides a

design speed of 40 mph. Alternate G provides a driveway access to the marina. See figure 2B for Alternate G.

	Alternate F1	Alternate F2	Alternate G (Preferred)
Structure Removal (existing)	$ 52,900	$ 52,900	**$ 52,400**
Structure (proposed)	2,162,000	2,161,600	**619,900**
Roadway Approaches	1,166,400	1,232,600	**379,100**
Miscellaneous and Mobilization	646,700	669,900	**262,600**
Engineering and Contingencies	622,000	633,000	**236,000**
ROW/Const. Easements/Utilities	1,050,000	650,000	**373,500**
	---	---	---
TOTAL	$ 5,700,000	$ 5,400,000	**$ 1,923,500**

III. ANTICIPATED DESIGN EXCEPTION

A design exception for the design speed, horizontal curve radius, sag vertical curve K, crest vertical curve K, horizontal stopping sight distance, and vertical stopping sight distance will be required for the design speed of 40 mph on Alternate G. An advisory speed limit of 35 mph will be posted on the roadway approaches to proposed Bridge No. 4. The use of the design exception minimizes impacts to both the natural and human environments by minimizing the amount of fill in the canals and the length of the road closure.

IV. ANTICIPATED IMPACTS TO BIOTIC COMMUNITIES

Calculated impacts to terrestrial resources reflect the relative abundance of each community present in the study area. Project construction will result in clearing and degradation of portions of these communities. Impacts to terrestrial and aquatic communities are presented in Table 1.

TABLE 1
ANTICIPATED IMPACTS TO
TERRESTRIAL AND AQUATIC COMMUNITIES

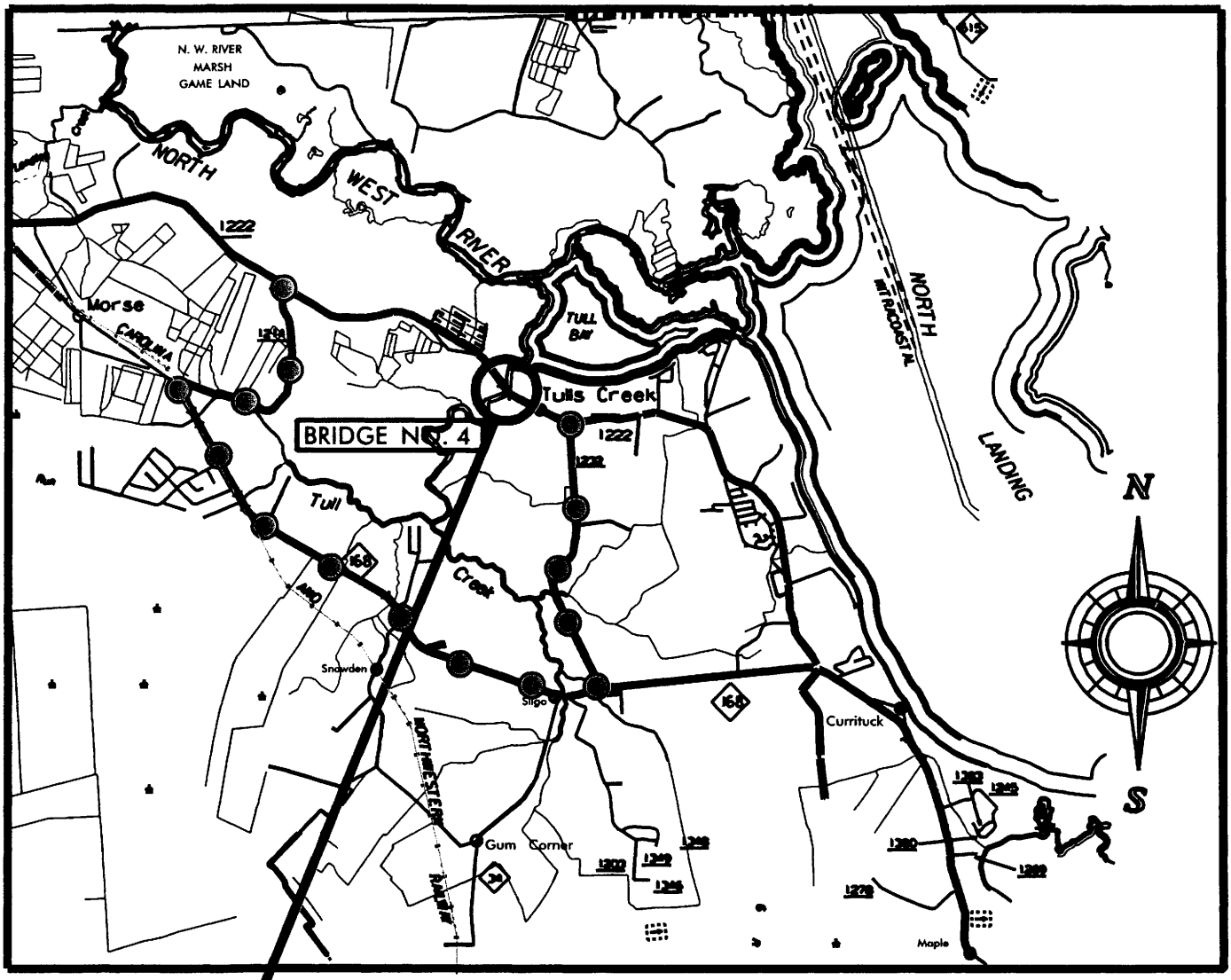
Bridge No. 4 Replacement Alternates	Man-Dominated Community Acres	Tidal Freshwater Marsh Acres	Aquatic Community Acres	Wetland Restoration Acres (ha)
Alternate F1	1.59	1.57	0.05	1.72
Alternate F2	1.59	2.13	0.05	1.67
Alternate G	1.37	0.23	0.26	0

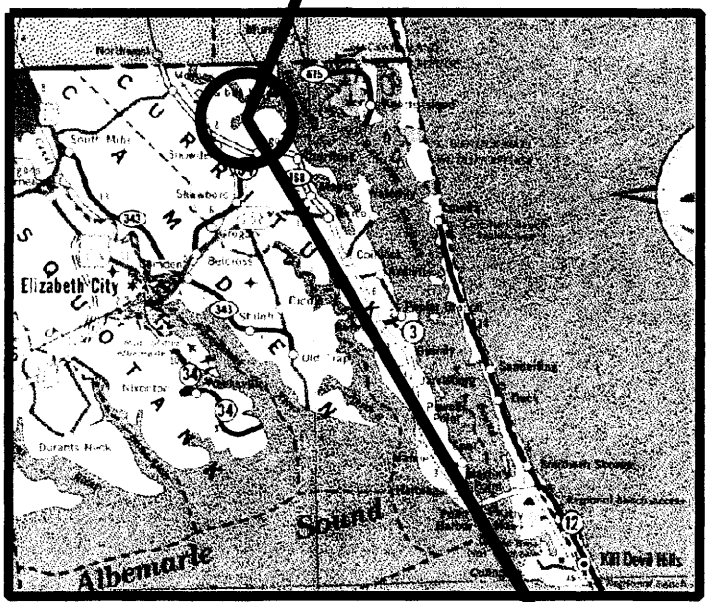
V. PERMITS

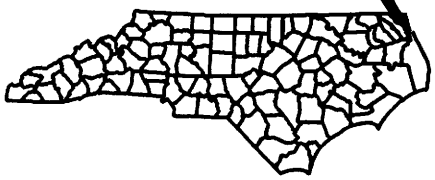
In accordance with the provisions of Section 404 of the Clean Water Act (33 U.S.C. 1344), a permit will be required from the Corps of Engineers for the discharge of dredged or fill material into "Waters of the United States."

A 401 Water Quality Certification, administered through the N.C. Department of Environment, Health and Natural Resources, will also be required. This certificate is issued for any activity that may result in a discharge into waters for which a federal permit is required.

This project is expected to have an overall positive impact. Replacement of an inadequate bridge will result in safer traffic operations.







LEGEND

Studied Detour Route

SCALE

2Km 1Km 0 1Km 2Km

1 MILE 0 1 MILE

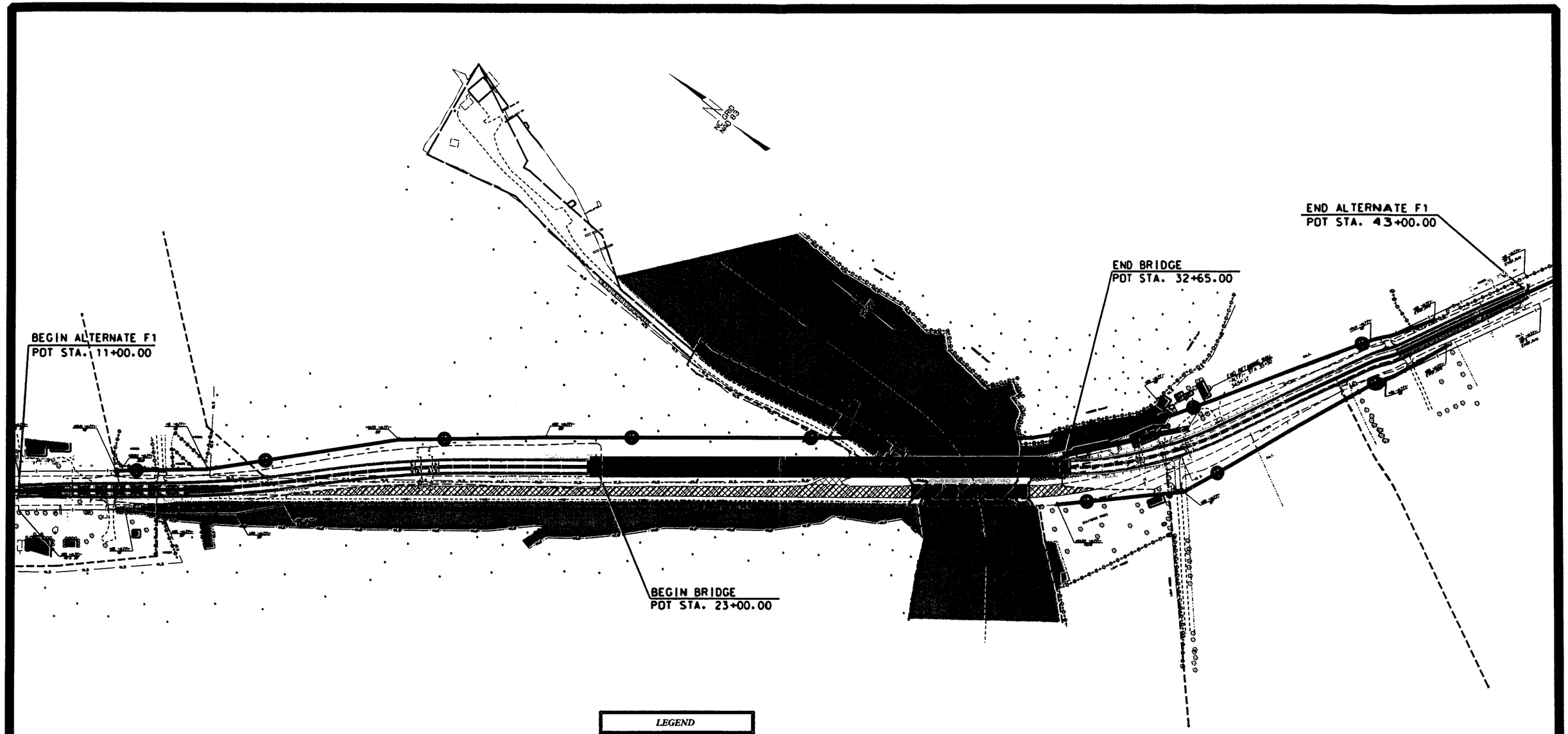
NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
PROJECT DEVELOPMENT AND
ENVIRONMENTAL ANALYSIS BRANCH

CURRITUCK COUNTY

BRIDGE NO. 4 ON SR 1222
OVER TULL CREEK

TIP No. B-2950

FIGURE 1



LEGEND

- EXISTING WATERWAY
- TAKEN WATERWAY
- EXISTING ROADWAY
- EXISTING ROADWAY TO BE RESURFACED
- PROPOSED ROADWAY
- PROPOSED STRUCTURES, ISLAND, CURB AND GUTTER
- BUILDINGS
- EXISTING ROAD TO BE REMOVED
- EXISTING STRUCTURES TO BE REMOVED
- PROPERTY LINES
- SLOPE STAKE LINE

ALTERNATE	CONSTRUCTION COST	RIGHT OF WAY COST	TOTAL COST
F1	$4,650,000	$1,050,000	$5,700,000

B-2950

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
PROJECT DEVELOPMENT &
ENVIROMENTAL ANALYSIS BRANCH

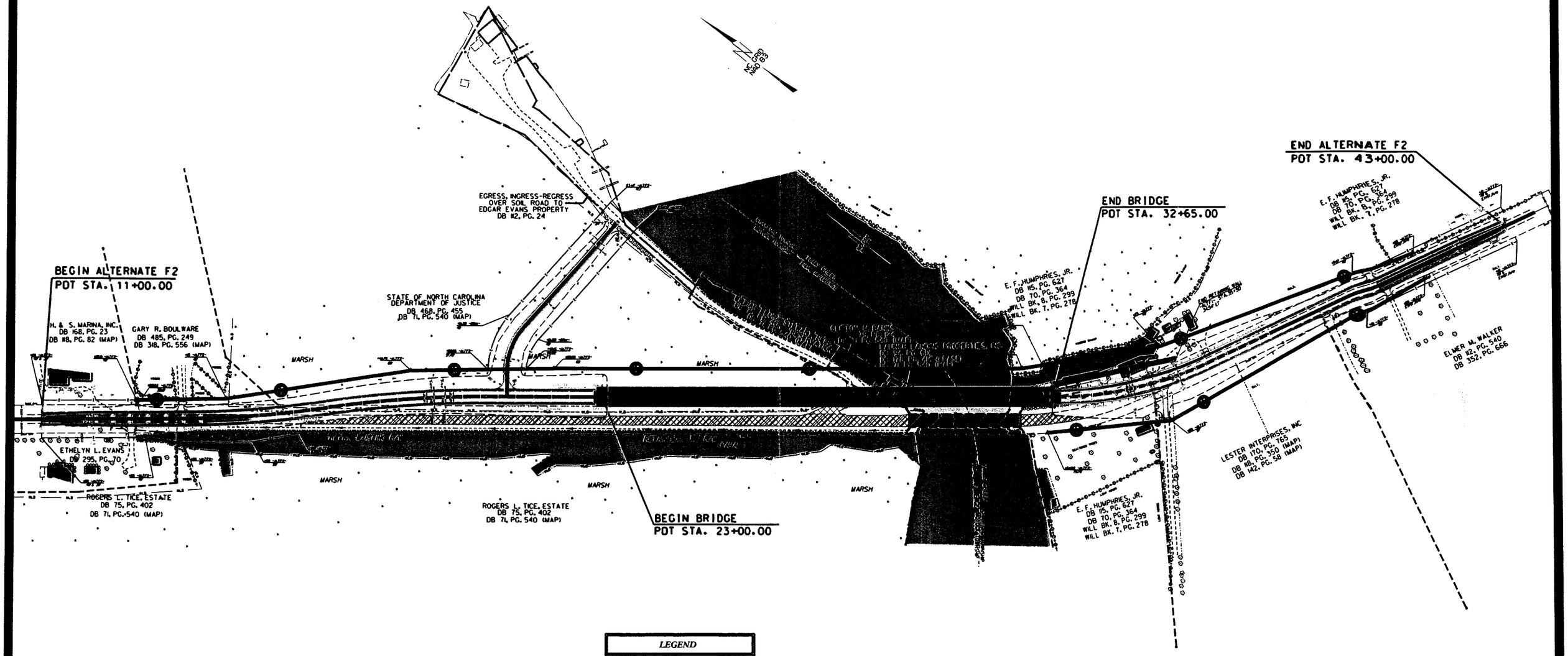
CURRITUCK COUNTY

BRIDGE NO. 4 ON SR 1222
OVER TULL CREEK

TIP NO. B-2950

50 0 100

FIGURE 2
ALTERNATE F1



LEGEND
EXISTING WATERWAY
TAKEN WATERWAY
EXISTING ROADWAY
EXISTING ROADWAY TO BE RESURFACED
PROPOSED ROADWAY
PROPOSED STRUCTURES, ISLAND, CURB AND GUTTER
BUILDINGS
EXISTING ROAD TO BE REMOVED
EXISTING STRUCTURES TO BE REMOVED
PROPERTY LINES
SLOPE STAKE LINE

ALTERNATE	CONSTRUCTION COST	RIGHT OF WAY COST	TOTAL COST
F2	$4,750,000	$650,000	$5,400,000

B–2950

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

NORTH CAROLINA
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OVER TULL CREEK

TIP NO. B–2950

50 0 100

FIGURE 2A
ALTERNATE F2

-L-
PI Sta 32+67.59
Δ = 24°43'35.7" (LT)
D = 9°23'33.9"
L = 263.25'
T = 133.71'
R = 610.00'
DS = 40mph

E. F. HUMPHRIES, JR.
DB 45, PG. 627
DB 70, PG. 364
WILL BK. 8, PG. 299
WILL BK. 7, PG. 238

STATE OF NORTH CAROLINA
DEPARTMENT OF JUSTICE
DB 468, PG. 495
DB 71, PG. 540 (MAP)

STATE OF NORTH CAROLINA
DEPARTMENT OF JUSTICE
DB 468, PG. 495
DB 71, PG. 540 (MAP)

LESTER INTERPRISES, INC
DB 170, PG. 765
DB 48, PG. 350 (MAP)
DB 142, PG. 98 (MAP)

ROGERS L. TICE, ESTATE
DB 73, PG. 402
DB 71, PG. 540 (MAP)

RETAINING WALL
POT Sta. 34+00.00 -L-
28.5' LT.

END APPR. SLAB
POC Sta. 31+57.00 -L-

BEGIN APPR. SLAB
POT Sta. 28+61.00 -L-

END BRIDGE
POT Sta. 31+32.00 -L-

BEGIN B-2950 PROJECT (CONSTRUCTION)
-ALTG- POT STA. 23+75.00

END B-2950 PROJECT (CONSTRUCTION)
-ALTG- POT STA. 37+50.00

100' TAPER RT. & LT. SIDE

SR 1222 TULLS CREEK RD.

MARSH

WOODED SWAMP

SCATTERED TREES

LIGHT WOODS

BOAT RAMP

ALTERNATE	CONSTRUCTION COST	RIGHT OF WAY COST	TOTAL COST
G	$1,550,000	$373,500	$1,923,500

LEGEND

- EXISTING WATERWAY
- TAKEN WATERWAY
- EXISTING ROADWAY
- EXISTING ROADWAY TO BE RESURFACED
- PROPOSED ROADWAY
- PROPOSED STRUCTURES, ISLAND, CURB AND GUTTER
- BUILDINGS
- EXISTING ROAD TO BE REMOVED
- EXISTING STRUCTURES TO BE REMOVED
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PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

B-2950

NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
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ENVIROMENTAL ANALYSIS BRANCH

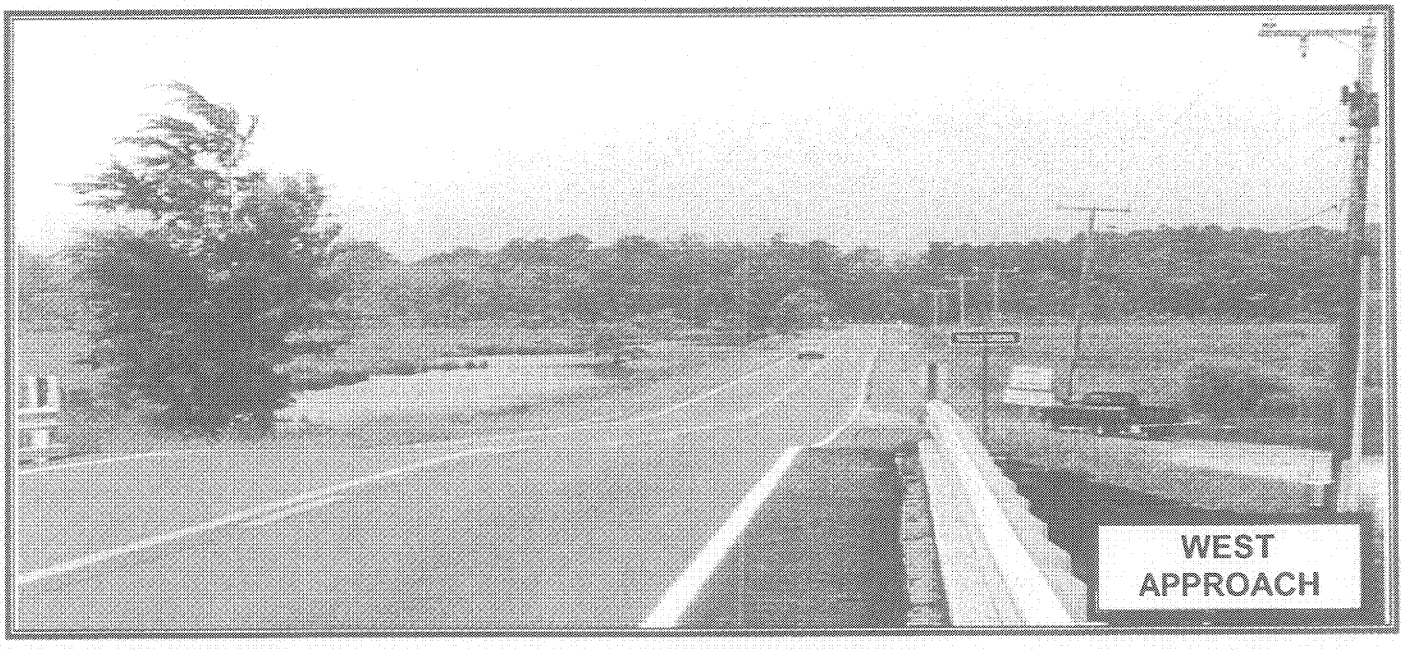
CURRITUCK COUNTY

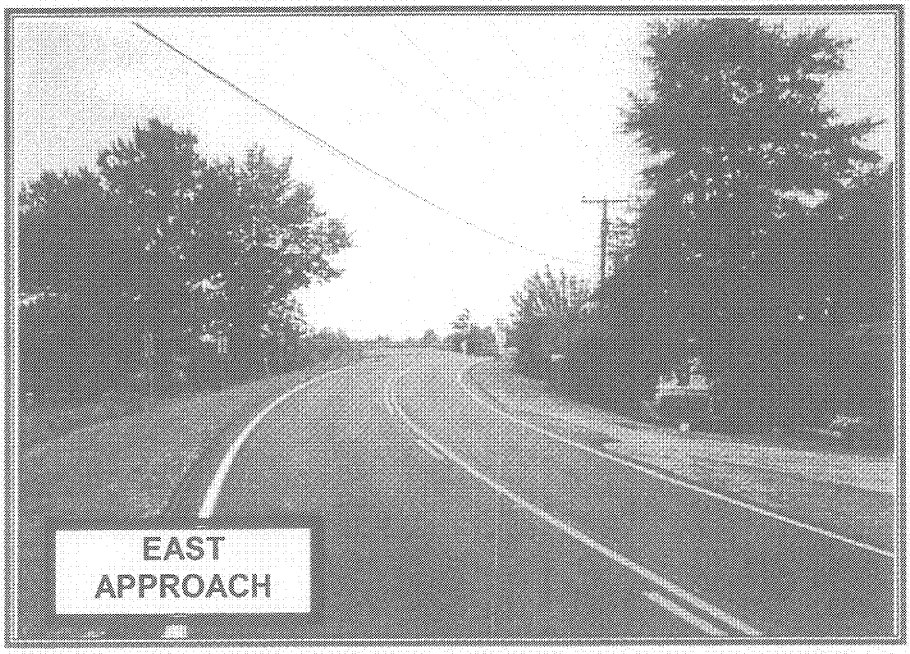
BRIDGE NO. 4 ON SR 1222
OVER TULL CREEK

TIP NO. B-2950

50 0 100

FIGURE 2B
ALTERNATE G
PREFERRED

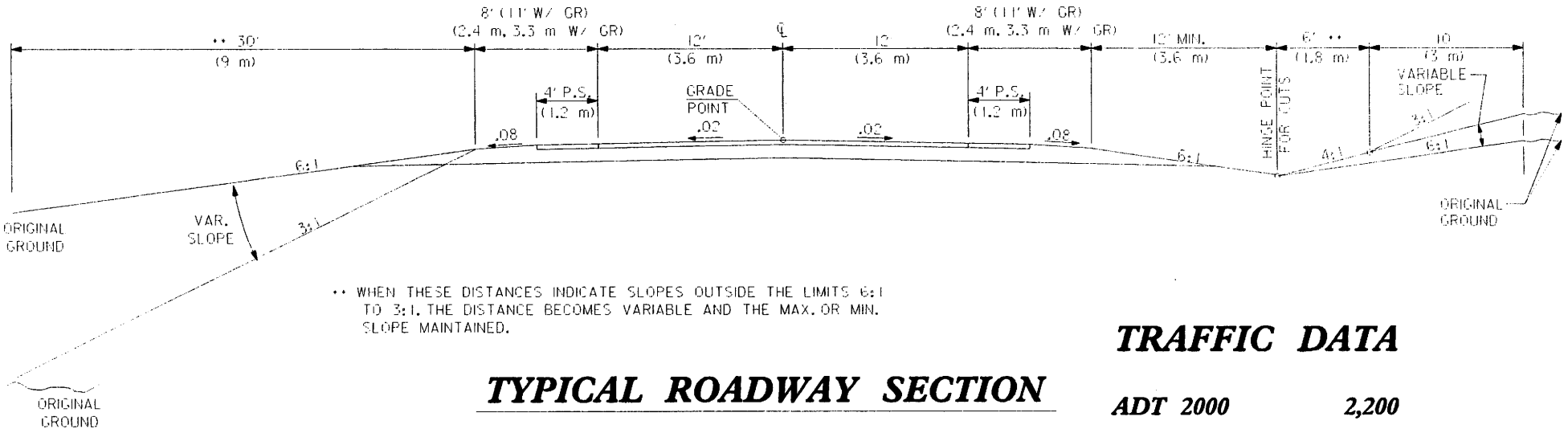




B-2950
Replacement of Bridge No. 4 on SR 1222 Over Tull Creek
Currituck County

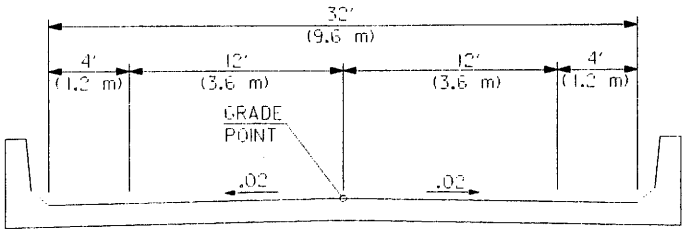
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

FIGURE 3



** WHEN THESE DISTANCES INDICATE SLOPES OUTSIDE THE LIMITS 6:1 TO 3:1, THE DISTANCE BECOMES VARIABLE AND THE MAX. OR MIN. SLOPE MAINTAINED.

TYPICAL ROADWAY SECTION



TYPICAL BRIDGE SECTION

TRAFFIC DATA

ADT 2000	2,200
ADT 2003	2,660
ADT 2025	6,000
DUAL	3%
TTST	2%

FUNCTIONAL CLASSIFICATION: RURAL MINOR COLLECTOR

NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
PLANNING & ENVIRONMENTAL BRANCH

CURRITUCK COUNTY

BRIDGE NO. 4 ON SR 1222 OVER TULL CREEK

TIP B-2950

FIGURE 4