



STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION

MICHAEL F. EASLEY  
GOVERNOR

LYNDO TIPPETT  
SECRETARY

July 16, 2007

Mr. William Wescott  
U. S. Army Corps of Engineers  
Regulatory Field Office  
Post Office Box 1000  
Washington, NC 27889-1000

Mr. Stephen Lane  
Division of Coastal Management  
N. C. Dept. of Env. & Natural Resources  
400 Commerce Avenue  
Morehead City, NC 28557

Dear Sirs:

**Subject: Nationwide 23 Permit Application, CAMA Major Development Permit Application, and Neuse Riparian Buffer Authorization Request for the Replacement of Bridge No. 212 over Bachelor Creek on SR 1005; Craven County; TIP Project B-4085; Federal Aid Project No. BRSTP-1005(7); State Project No.8.2171201; Debit \$400.00 from WBS 33444.1.1.**

Please find enclosed the Preconstruction Notification (PCN), CAMA Major Permit (MP) forms, Adjacent Riparian Landowner return receipts, permit drawings, half-size plans, NRTR, and the Categorical Exclusion (CE) for the above-mentioned project. The North Carolina Department of Transportation proposes to replace existing Bridge No. 212 over Bachelor Creek on SR 1005 in Craven County. The project involves replacement of the existing functionally obsolete and structurally deficient bridge and approaches with a new 115-foot bridge and approaches. The new bridge will feature two 12-foot lanes with 4.5-foot offsets. The west approach will be approximately 330 feet long and the east approach will be approximately 300 feet long. An offsite detour will be utilized. Proposed permanent impacts include 0.09 acre of riverine wetland impacts for fill. Additionally, there will be 0.09 acre of hand clearing in riverine wetlands.

### **Impacts to Water of the United States**

General Description: Bachelor Creek is located in the 03020202 CU of the Neuse River Basin. The Division of Water Quality (DWQ) has assigned Bachelor Creek a Stream Index Number of 27-98. DWQ has assigned a best usage classification of C Sw NSW.

Bachelor Creek is not designated as a North Carolina Natural or Scenic River, or as a national Wild and Scenic River. It is not listed as a 303(d) stream nor are there 303(d) waters within 1 mile of the study area. No designated Outstanding Resource Waters (ORW), High Quality Waters (HQW), Water Supply I (WS-I), or Water Supply II (WS-II) waters occur within 1 mile of the project study area.

**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](http://WWW.NCDOT.ORG)

**LOCATION:**  
TRANSPORTATION BUILDING  
1 SOUTH WILMINGTON STREET  
RALEIGH NC

Permanent Impacts: As stated above, permanent impacts consist of fill in riverine wetlands. The total amount of proposed impacts is 0.09 acre.

Temporary Impacts: There are no temporary impacts proposed for this project

Utility Impacts: There will be no impacts to jurisdictional resources due to utilities. The electrical lines to the north of the project will remain in place. The buried, fiber optic phone line will be relocated using directional bore.

Hand Clearing: There are 0.09 acre of hand clearing proposed for this project.

Neuse Buffer Rules: This project lies within the Neuse River Basin; therefore, the regulations pertaining to the Neuse River Buffer Rules will apply. There are 2,386 square feet of impacts to Zone 1 and 2,260 square feet of impacts to Zone 2. Of these impacts, 2,129 square feet are considered allowable due to bridge construction and 2,517 square feet are allowable with mitigation due to roadway construction.

### **Bridge Demolition**

The superstructure for Bridge No. 212 is a concrete deck on I-beams and will allow removal without dropping components into the water. Likewise, it should be possible to remove the timber piles and timber caps without dropping them into the water. Best Management Practices for Bridge Demolition and Removal will be implemented. Any component of the bridge dropped into the water shall be immediately removed.

### **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 were incorporated as part of the project design. These included:

- To avoid impacts, NCDOT is replacing Bridge No. 212 in place and utilizing an off-site detour.
- The bridge will be lengthened by 22 feet.
- Top down construction will be utilized.
- NCDOT is also minimizing impacts to surface waters by utilizing longer spans with fewer bents than the existing bridge.
- NCDOT will observe an in-stream construction moratorium from February 15 to June 30 and utilize Stream Crossing Guidelines for Anadromous Fish Passage.
- 3:1 slopes were used in jurisdictional areas.

## Mitigation

The proposed project will have permanent impacts to wetlands totaling 0.09 acre due to fill. Due to the minimal amount of permanent impacts to jurisdictional wetlands, and impacts to riparian not exceeding the threshold requiring compensatory mitigation, NCDOT is not proposing mitigation.

## Access

Due to safety concerns, increased costs, and not meeting the threshold of “undue interference”, as it relates to NCDOT’s “Guidelines for Recreational Access at Creeks and Rivers” (attached), NCDOT does not propose access for recreation for this project.

## Federally Protected Species

As of June 28, 2007, the US Fish and Wildlife Service (USFWS) lists five federally protected species for Craven County. The following table lists these species.

Common Name	Scientific Name	Status	Habitat	Conclusion
Leatherback Sea Turtle	<i>Dermochelys coriacea</i>	E	N	No Effect
American Alligator	<i>Alligator mississippiensis</i>	T(S/A)	Y	N/A
Red-cockaded Woodpecker	<i>Picooides borealis</i>	E	N	No Effect
West Indian Manatee	<i>Trichechus manatus</i>	E	N	No Effect
Sensitive Joint-vetch	<i>Aeschynomene virginica</i>	T	N	No Effect

E – endangered; T – threatened; T(S/A) – threatened due to similarity of appearance

The bald eagle was delisted as of June 28, 2007 and is no longer protected by the Endangered Species Act. The most recent survey found no individuals or nests. It is, however, protected under the Bald and Golden Eagle Act and the Migratory Bird Treaty Act.

## Project Schedule

The project has a scheduled let of January 15, 2008 with a review date of December 4, 2007.

## Regulatory Approvals

Section 404 Permit: This project is being processed by the Federal Highway Administration as a “Categorical Exclusion” in accordance with 23 CFR 771.115(b). Therefore, we do not anticipate requesting an individual permit but propose to proceed under a Nationwide 23 as authorized by a Nationwide Permit 23 (67 FR 2020; March 19, 2007).

Section 401 Permit: We anticipate 401 General Certification number 3632 will apply to this project. In accordance with 15A NCAC 2H, Section .0500(a) we are providing two copies of this

application to the North Carolina Department of Environmental and Natural Resources, Division of Water Quality, for their review.

Neuse River Riparian Buffer Authorization: NCDOT requests that the NC Division of Water Quality review this application and issue a written approval for a Neuse River Riparian Buffer Authorization.

CAMA Permit: NCDOT requests that the proposed work be authorized under a Coastal Area Management Act Major Development Permit. The landowner receipts are attached. NCDOT has received a stormwater permit for this project.

A copy of this permit application will be posted on the NCDOT website at: <http://www.ncdot.org/doh/preconstruct/pe/neu/permit.html>.

If you have any questions or need additional information, please contact Chris Underwood at (919) 715-1451.

Sincerely,

  
for

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

W/attachment:

Mr. John Hennessy, NCDWQ (2 copies)  
Mr. Travis Wilson, NCWRC  
Mr. Gary Jordan, USFWS  
Mr. Ron Sechler, NMFS  
Mr. Michael Street, NCDMF  
Mr. Steve Sollod, NCDCM  
Dr. David Chang, P.E., Hydraulics  
Mr. Greg Perfetti, P.E., Structure Design  
Mr. Victor Barbour, P.E., Project Services Unit  
Mr. Mark Staley, Roadside Environmental  
Mr. C. E. Lassiter, P.E., Division 2 Engineer  
Mr. Jay Johnson, Division 2 Environmental Officer

W/o attachment

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  
Mr. John Williams, P.E., Planning Engineer

# APPLICATION for Major Development Permit

(last revised 12/27/06)



North Carolina DIVISION OF COASTAL MANAGEMENT

<b>1. Primary Applicant/ Landowner Information</b>							
Business Name Nc Department Of Transportation				Project Name (if applicable) B-4085			
Applicant 1: First Name Gregory		MI J.	Last Name Thorpe				
Applicant 2: First Name		MI	Last Name				
<i>If additional applicants, please attach an additional page(s) with names listed.</i>							
Mailing Address 1598 Mail Service Center			PO Box	City Raleigh		State NC	
ZIP 27699	Country		Phone No. 919 - 715 - 1334 ext.			FAX No. 919 - 715 - 5501	
Street Address (if different from above)			City	State		ZIP	
Email							

<b>2. Agent/Contractor Information</b>							
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							

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n. Describe existing wastewater treatment facilities. None
o. Describe existing drinking water supply source. None
p. Describe existing storm water management or treatment systems. None

<b>5. Activities and Impacts</b>	
a. Will the project be for commercial, public, or private use?	<input type="checkbox"/> Commercial <input checked="" type="checkbox"/> Public/Government <input type="checkbox"/> Private/Community
b. Give a brief description of purpose, use, and daily operations of the project when complete. New bridge over Bachelor Creek. Used for conveying traffic.	
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. Replace existing bridge using road construction equipment.	
d. List all development activities you propose. Bridge replacement	
e. Are the proposed activities maintenance of an existing project, new work, or both?	New
f. What is the approximate total disturbed land area resulting from the proposed project?	<input type="checkbox"/> Sq.Ft or <input type="checkbox"/> Acres
g. Will the proposed project encroach on any public easement, public accessway or other area that the public has established use of?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
h. Describe location and type of existing and proposed discharges to waters of the state. Surface runoff	
i. Will wastewater or stormwater be discharged into a wetland?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> NA
If yes, will this discharged water be of the same salinity as the receiving water?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
j. Is there any mitigation proposed?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> NA
If yes, attach a mitigation proposal.	

**<Form continues on back>**

<b>6. Additional Information</b>	
<i>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.</i>	
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.	

<b>3. Project Location</b>			
County (can be multiple) Craven	Street Address	State Rd. #	
Subdivision Name	City	State	Zip
Phone No. - - ext.		Lot No.(s) (if many, attach additional page with list)	
a. In which NC river basin is the project located? Neuse		b. Name of body of water nearest to proposed project Bachelor Creek	
c. Is the water body identified in (b) above, natural or manmade? <input checked="" type="checkbox"/> Natural <input type="checkbox"/> Manmade <input type="checkbox"/> Unknown		d. Name the closest major water body to the proposed project site. Neuse River	
e. Is proposed work within city limits or planning jurisdiction? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		f. If applicable, list the planning jurisdiction or city limit the proposed work falls within.	

<b>4. Site Description</b>	
a. Total length of shoreline on the tract (ft.) N/A	b. Size of entire tract (sq.ft.)
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) <input type="checkbox"/> NHW or <input type="checkbox"/> NWL
e. Vegetation on tract Wetland vegetation, roadside grasses	
f. Man-made features and uses now on tract Bridge, railroad and bridge, & guardrail	
g. Identify and describe the existing land uses <u>adjacent</u> to the proposed project site. Forested wetland	
h. How does local government zone the tract? Rural services	i. Is the proposed project consistent with the applicable zoning? (Attach zoning compliance certificate, if applicable) <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
j. Is the proposed activity part of an urban waterfront redevelopment proposal? <span style="float: right;"><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</span>	
k. Has a professional archaeological assessment been done for the tract? If yes, attach a copy. <span style="float: right;"><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA</span> If yes, by whom? <span style="float: right;">SHPO</span>	
l. Is the proposed project located in a National Registered Historic District or does it involve a National Register listed or eligible property? <span style="float: right;"><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> NA</span>	

**<Form continues on next page>**

m. (i) Are there wetlands on the site?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
(ii) Are there coastal wetlands on the site?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
(iii) If yes to either (i) or (ii) above, has a delineation been conducted? (Attach documentation, if available)	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

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 International Paper Company Phone No.  Address 865 John L. Regel Road, Reigelwood, NC 28456  Name Monta Humphrey Betts Phone No.  Address 8421 Two Courts Drive, Raleigh, NC 27613  Name James C. Humphrey Phone No.  Address 607 West Wilson Creek Drive, New Bern, NC 28562
g. A list of previous state or federal permits issued for work on the project tract. Include permit numbers, permittee, and issuing dates. N/A
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. <i>(Must be signed by property owner)</i>
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 \_\_\_\_\_ Print Name \_\_\_\_\_

Signature \_\_\_\_\_

Please indicate application attachments pertaining to your proposed project.

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

# 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: Bachelor Creek
- c. Type of bridge (construction material): 21" cored slab
- d. Water depth at the proposed crossing at NLW or NWL: ~9'
- e. (i) Will proposed bridge replace an existing bridge?  Yes  No
  - If yes,
    - (ii) Length of existing bridge: 83'
    - (iii) Width of existing bridge: 32'
    - (iv) Navigation clearance underneath existing bridge: ~5.5'
    - (v) Will all, or a part of, the existing bridge be removed? (Explain) All (new bridge will be longer)
- 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: 120'
- h. Width of proposed bridge: 33'
- 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:
- k. Navigation clearance underneath proposed bridge: ~6.5'
- l. Have you contacted the U.S. Coast Guard concerning their approval?  Yes  No
  - If yes, explain:
- m. Will the proposed bridge cross wetlands containing no navigable waters?  Yes  No
  - If yes, explain:
- n. Height of proposed bridge above wetlands: ~6'

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

g. Width of proposed culvert:  
 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 \_\_\_\_\_  None

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

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: 70'  
 (iii) Avg. width of area to be excavated: 30'  
 (iv) Avg. depth of area to be excavated:  
 (v) Amount of material to be excavated in cubic yards: 314

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:  
 (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.  
 \_\_\_\_\_

**Form DCM MP-5 (Bridges and Culverts, Page 3 of 4)**

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: see permit drawings

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

(iv) Purpose of fill: Piles driven.

\_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

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: ~400'

(iii) Avg. width of area to be filled: ~12'

(iv) Purpose of fill: Widen shoulders that approach bridges.

\_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

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 \_\_\_\_\_  SAV \_\_\_\_\_  SB

WL \_\_\_\_\_  None

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

\_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

**4. GENERAL**

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

If yes, explain: Telephone line will be directionally bored. See attached Utility Plan sheet No. 4.

\_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

*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

If yes, complete Form DCM-MP-2.

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

Bulldozer, backhoe, & crane.

\_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

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

Silt fence, NCDOT Type B silt basin, diversion ditches, and inlet protection.

\_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

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.

\_\_\_\_\_  
Date

\_\_\_\_\_  
Project Name

\_\_\_\_\_  
Applicant Name Ap

\_\_\_\_\_  
Applicant Signature Ap

USACE Action ID No. \_\_\_\_\_ DWQ No. \_\_\_\_\_

(If any particular item is not applicable to this project, please enter "Not Applicable" or "N/A".)

**I. Processing**

1. Check all of the approval(s) requested for this project:

- Section 404 Permit
- Section 10 Permit
- 401 Water Quality Certification
- Riparian or Watershed Buffer Rules
- Isolated Wetland Permit from DWQ
- Express 401 Water Quality Certification

2. Nationwide, Regional or General Permit Number(s) Requested: NW 23

3. If this notification is solely a courtesy copy because written approval for the 401 Certification is not required, check here:

4. If payment into the North Carolina Ecosystem Enhancement Program (NCEEP) is proposed for mitigation of impacts, attach the acceptance letter from NCEEP, complete section VIII, and check here:

5. If your project is located in any of North Carolina's twenty coastal counties (listed on page 4), and the project is within a North Carolina Division of Coastal Management Area of Environmental Concern (see the top of page 2 for further details), check here:

**II. Applicant Information**

1. Owner/Applicant Information

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

Mailing Address: 1598 Mail Service Center

Telephone Number: (919) 733-3141 Fax Number: (919) 733-9794

E-mail Address: \_\_\_\_\_

2. Agent/Consultant Information (A signed and dated copy of the Agent Authorization letter must be attached if the Agent has signatory authority for the owner/applicant.)

Name: \_\_\_\_\_

Company Affiliation: \_\_\_\_\_

Mailing Address: \_\_\_\_\_

Telephone Number: \_\_\_\_\_ Fax Number: \_\_\_\_\_

E-mail Address: \_\_\_\_\_

### III. Project Information

Attach a **vicinity map** clearly showing the location of the property with respect to local landmarks such as towns, rivers, and roads. Also provide a detailed **site plan** showing property boundaries and development plans in relation to surrounding properties. Both the vicinity map and site plan must include a scale and north arrow. The specific footprints of all buildings, impervious surfaces, or other facilities must be included. If possible, the maps and plans should include the appropriate USGS Topographic Quad Map and NRCS Soil Survey with the property boundaries outlined. Plan drawings, or other maps may be included at the applicant's discretion, so long as the property is clearly defined. For administrative and distribution purposes, the USACE requires information to be submitted on sheets no larger than 11 by 17-inch format; however, DWQ may accept paperwork of any size. DWQ prefers full-size construction drawings rather than a sequential sheet version of the full-size plans. If full-size plans are reduced to a small scale such that the final version is illegible, the applicant will be informed that the project has been placed on hold until decipherable maps are provided.

1. Name of project: Replacement of Bridge No. 212 on SR 1005 over Bachelor Creek
2. T.I.P. Project Number or State Project Number (NCDOT Only): B-4085
3. Property Identification Number (Tax PIN): N/A
4. Location  
County: Craven Nearest Town: New Bern  
Subdivision name (include phase/lot number): N/A  
Directions to site (include road numbers/names, landmarks, etc.): Bridge 212 over Bachelor Creek on SR 1005
5. Site coordinates (For linear projects, such as a road or utility line, attach a sheet that separately lists the coordinates for each crossing of a distinct waterbody.)  
Decimal Degrees (6 digits minimum): 35.1494 °N 77.1739 °W
6. Property size (acres): N/A
7. Name of nearest receiving body of water: Neuse River
8. River Basin: Neuse  
(Note – this must be one of North Carolina's seventeen designated major river basins. The River Basin map is available at <http://h2o.enr.state.nc.us/admin/maps/>.)
9. Describe the existing conditions on the site and general land use in the vicinity of the project at the time of this application: Rural
10. Describe the overall project in detail, including the type of equipment to be used: Replacing a structurally deficient bridge using top-down construction. Standard road building equipment will be used.

11. Explain the purpose of the proposed work: To replace a structurally deficient bridge.

**IV. Prior Project History**

If jurisdictional determinations and/or permits have been requested and/or obtained for this project (including all prior phases of the same subdivision) in the past, please explain. Include the USACE Action ID Number, DWQ Project Number, application date, and date permits and certifications were issued or withdrawn. Provide photocopies of previously issued permits, certifications or other useful information. Describe previously approved wetland, stream and buffer impacts, along with associated mitigation (where applicable). If this is a NCDOT project, list and describe permits issued for prior segments of the same T.I.P. project, along with construction schedules. N/A

**V. Future Project Plans**

Are any future permit requests anticipated for this project? If so, describe the anticipated work, and provide justification for the exclusion of this work from the current application.

No.

**VI. Proposed Impacts to Waters of the United States/Waters of the State**

It is the applicant's (or agent's) responsibility to determine, delineate and map all impacts to wetlands, open water, and stream channels associated with the project. Each impact must be listed separately in the tables below (e.g., culvert installation should be listed separately from riprap dissipater pads). Be sure to indicate if an impact is temporary. All proposed impacts, permanent and temporary, must be listed, and must be labeled and clearly identifiable on an accompanying site plan. All wetlands and waters, and all streams (intermittent and perennial) should be shown on a delineation map, whether or not impacts are proposed to these systems. Wetland and stream evaluation and delineation forms should be included as appropriate. Photographs may be included at the applicant's discretion. If this proposed impact is strictly for wetland or stream mitigation, list and describe the impact in Section VIII below. If additional space is needed for listing or description, please attach a separate sheet.

1. Provide a written description of the proposed impacts: 0.09 acre of wetland impacts.
2. Individually list wetland impacts. Types of impacts include, but are not limited to mechanized clearing, grading, fill, excavation, flooding, ditching/drainage, etc. For dams, separately list impacts due to both structure and flooding.

Wetland Impact Site Number (indicate on map)	Type of Impact	Type of Wetland (e.g., forested, marsh, herbaceous, bog, etc.)	Located within 100-year Floodplain (yes/no)	Distance to Nearest Stream (linear feet)	Area of Impact (acres)
Bridge	Fill	Riverine	Yes	0	0.09
Total Wetland Impact (acres)					0.09

3. List the total acreage (estimated) of all existing wetlands on the property: ~1

4. Individually list all intermittent and perennial stream impacts. Be sure to identify temporary impacts. Stream impacts include, but are not limited to placement of fill or culverts, dam construction, flooding, relocation, stabilization activities (e.g., cement walls, rip-rap, crib walls, gabions, etc.), excavation, ditching/straightening, etc. If stream relocation is proposed, plans and profiles showing the linear footprint for both the original and relocated streams must be included. To calculate acreage, multiply length X width, then divide by 43,560.

Stream Impact Number (indicate on map)	Stream Name	Type of Impact	Perennial or Intermittent?	Average Stream Width Before Impact	Impact Length (linear feet)	Area of Impact (acres)
N/A						
Total Stream Impact (by length and acreage)						

5. Individually list all open water impacts (including lakes, ponds, estuaries, sounds, Atlantic Ocean and any other water of the U.S.). Open water impacts include, but are not limited to fill, excavation, dredging, flooding, drainage, bulkheads, etc.

Open Water Impact Site Number (indicate on map)	Name of Waterbody (if applicable)	Type of Impact	Type of Waterbody (lake, pond, estuary, sound, bay, ocean, etc.)	Area of Impact (acres)
N/A				
Total Open Water Impact (acres)				

6. List the cumulative impact to all Waters of the U.S. resulting from the project:

Stream Impact (acres):	
Wetland Impact (acres):	0.09
Open Water Impact (acres):	
Total Impact to Waters of the U.S. (acres)	0.09
Total Stream Impact (linear feet):	

7. Isolated Waters

Do any isolated waters exist on the property?  Yes  No

Describe all impacts to isolated waters, and include the type of water (wetland or stream) and the size of the proposed impact (acres or linear feet). Please note that this section only applies to waters that have specifically been determined to be isolated by the USACE.

N/A

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8. Pond Creation

If construction of a pond is proposed, associated wetland and stream impacts should be included above in the wetland and stream impact sections. Also, the proposed pond should be described here and illustrated on any maps included with this application.

Pond to be created in (check all that apply):  uplands  stream  wetlands

Describe the method of construction (e.g., dam/embankment, excavation, installation of draw-down valve or spillway, etc.): N/A

Proposed use or purpose of pond (e.g., livestock watering, irrigation, aesthetic, trout pond, local stormwater requirement, etc.): N/A

Current land use in the vicinity of the pond: N/A

Size of watershed draining to pond: \_\_\_\_\_ Expected pond surface area: \_\_\_\_\_

**VII. Impact Justification (Avoidance and Minimization)**

Specifically describe measures taken to avoid the proposed impacts. It may be useful to provide information related to site constraints such as topography, building ordinances, accessibility, and financial viability of the project. The applicant may attach drawings of alternative, lower-impact site layouts, and explain why these design options were not feasible. Also discuss how impacts were minimized once the desired site plan was developed. If applicable, discuss construction techniques to be followed during construction to reduce impacts. Top-down construction, bridge was lengthened, and minimum widths were used for structures and approaches.

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**VIII. Mitigation**

DWQ - In accordance with 15A NCAC 2H .0500, mitigation may be required by the NC Division of Water Quality for projects involving greater than or equal to one acre of impacts to freshwater wetlands or greater than or equal to 150 linear feet of total impacts to perennial streams.

USACE – In accordance with the Final Notice of Issuance and Modification of Nationwide Permits, published in the Federal Register on January 15, 2002, mitigation will be required when necessary to ensure that adverse effects to the aquatic environment are minimal. Factors including size and type of proposed impact and function and relative value of the impacted aquatic resource will be considered in determining acceptability of appropriate and practicable mitigation as proposed. Examples of mitigation that may be appropriate and practicable include, but are not limited to: reducing the size of the project; establishing and maintaining wetland and/or upland vegetated buffers to protect open waters such as streams; and replacing losses of aquatic resource functions and values by creating, restoring, enhancing, or preserving similar functions and values, preferable in the same watershed.

If mitigation is required for this project, a copy of the mitigation plan must be attached in order for USACE or DWQ to consider the application complete for processing. Any application lacking a required mitigation plan or NCEEP concurrence shall be placed on hold as incomplete. An applicant may also choose to review the current guidelines for stream restoration in DWQ's Draft Technical Guide for Stream Work in North Carolina, available at <http://h2o.enr.state.nc.us/ncwetlands/strmgide.html>.

1. Provide a brief description of the proposed mitigation plan. The description should provide as much information as possible, including, but not limited to: site location (attach directions and/or map, if offsite), affected stream and river basin, type and amount (acreage/linear feet) of mitigation proposed (restoration, enhancement, creation, or preservation), a plan view, preservation mechanism (e.g., deed restrictions, conservation easement, etc.), and a description of the current site conditions and proposed method of construction. Please attach a separate sheet if more space is needed.

Due to the limited amount of area impacted, no mitigation is proposed.

2. Mitigation may also be made by payment into the North Carolina Ecosystem Enhancement Program (NCEEP). Please note it is the applicant's responsibility to contact the NCEEP at (919) 715-0476 to determine availability, and written approval from the NCEEP indicating that they are will to accept payment for the mitigation must be attached to this form. For additional information regarding the application process for the NCEEP, check the NCEEP website at <http://h2o.enr.state.nc.us/wrp/index.htm>. If use of the NCEEP is proposed, please check the appropriate box on page five and provide the following information:

Amount of stream mitigation requested (linear feet): N/A

Amount of buffer mitigation requested (square feet): N/A

Amount of Riparian wetland mitigation requested (acres): N/A

Amount of Non-riparian wetland mitigation requested (acres): N/A

Amount of Coastal wetland mitigation requested (acres): N/A

## **IX. Environmental Documentation (required by DWQ)**

1. Does the project involve an expenditure of public (federal/state/local) funds or the use of public (federal/state) land? Yes  No
2. If yes, does the project require preparation of an environmental document pursuant to the requirements of the National or North Carolina Environmental Policy Act (NEPA/SEPA)? Note: If you are not sure whether a NEPA/SEPA document is required, call the SEPA coordinator at (919) 733-5083 to review current thresholds for environmental documentation. Yes  No
3. If yes, has the document review been finalized by the State Clearinghouse? If so, please attach a copy of the NEPA or SEPA final approval letter. Yes  No

**X. Proposed Impacts on Riparian and Watershed Buffers (required by DWQ)**

It is the applicant's (or agent's) responsibility to determine, delineate and map all impacts to required state and local buffers associated with the project. The applicant must also provide justification for these impacts in Section VII above. All proposed impacts must be listed herein, and must be clearly identifiable on the accompanying site plan. All buffers must be shown on a map, whether or not impacts are proposed to the buffers. Correspondence from the DWQ Regional Office may be included as appropriate. Photographs may also be included at the applicant's discretion.

1. Will the project impact protected riparian buffers identified within 15A NCAC 2B .0233 (Neuse), 15A NCAC 2B .0259 (Tar-Pamlico), 15A NCAC 02B .0243 (Catawba) 15A NCAC 2B .0250 (Randleman Rules and Water Supply Buffer Requirements), or other (please identify \_\_\_\_\_)? Yes  No
2. If "yes", identify the square feet and acreage of impact to each zone of the riparian buffers. If buffer mitigation is required calculate the required amount of mitigation by applying the buffer multipliers.

Zone*	Impact (square feet)	Multiplier	Required Mitigation
1	2,386	3 (2 for Catawba)	None
2	2,260	1.5	None
Total	4,646		None

\* Zone 1 extends out 30 feet perpendicular from the top of the near bank of channel; Zone 2 extends an additional 20 feet from the edge of Zone 1.

3. If buffer mitigation is required, please discuss what type of mitigation is proposed (i.e., Donation of Property, Riparian Buffer Restoration / Enhancement, or Payment into the Riparian Buffer Restoration Fund). Please attach all appropriate information as identified within 15A NCAC 2B .0242 or .0244, or .0260. \_\_\_\_\_

**XI. Stormwater (required by DWQ)**

Describe impervious acreage (existing and proposed) versus total acreage on the site. Discuss stormwater controls proposed in order to protect surface waters and wetlands downstream from the property. If percent impervious surface exceeds 20%, please provide calculations demonstrating total proposed impervious level. Impervious acreage will not appreciably increase as a result of the bridge construction.

**XII. Sewage Disposal (required by DWQ)**

Clearly detail the ultimate treatment methods and disposition (non-discharge or discharge) of wastewater generated from the proposed project, or available capacity of the subject facility. No wastewater will be generated from the implementation of the proposed project.

**XIII. Violations (required by DWQ)**

Is this site in violation of DWQ Wetland Rules (15A NCAC 2H .0500) or any Buffer Rules?

Yes  No

Is this an after-the-fact permit application? Yes  No

**XIV. Cumulative Impacts (required by DWQ)**

Will this project (based on past and reasonably anticipated future impacts) result in additional development, which could impact nearby downstream water quality? Yes  No

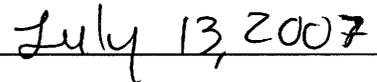
If yes, please submit a qualitative or quantitative cumulative impact analysis in accordance with the most recent North Carolina Division of Water Quality policy posted on our website at <http://h2o.enr.state.nc.us/ncwetlands>. If no, please provide a short narrative description: \_\_\_\_\_

N/A

**XV. Other Circumstances (Optional):**

It is the applicant's responsibility to submit the application sufficiently in advance of desired construction dates to allow processing time for these permits. However, an applicant may choose to list constraints associated with construction or sequencing that may impose limits on work schedules (e.g., draw-down schedules for lakes, dates associated with Endangered and Threatened Species, accessibility problems, or other issues outside of the applicant's control).





**Applicant/Agent's Signature**

**Date**

(Agent's signature is valid only if an authorization letter from the applicant is provided.)

## GUIDELINES FOR RECREATIONAL ACCESS AT CREEKS AND RIVERS

Public interest in recreational access along various creeks and rivers in North Carolina has been increasing in recent years. The North Carolina Department of Transportation (NCDOT) fully acknowledges the value of recreational access but has not been given the mission to fund, provide, or manage such facilities. The Department will lend support (as legal, design, and funding constraints allow) by coordinating with other agencies that have been charged with such a mission.

In order to delineate more clearly how NCDOT will participate in providing recreational access, NCDOT has developed the guidelines to direct the decision making process. These guidelines should be used during the planning process. The decision regarding whether an access will be provided should be made before the final planning document is completed so the access can be addressed within the document.

If there is an existing publicly owned formal facility managed for recreational access (fishing, canoeing, or otherwise), the Department will replace the facility as part of the project construction. This is in accordance with the Federal Highway Administration's (FHWA) Section 4(f) procedures.

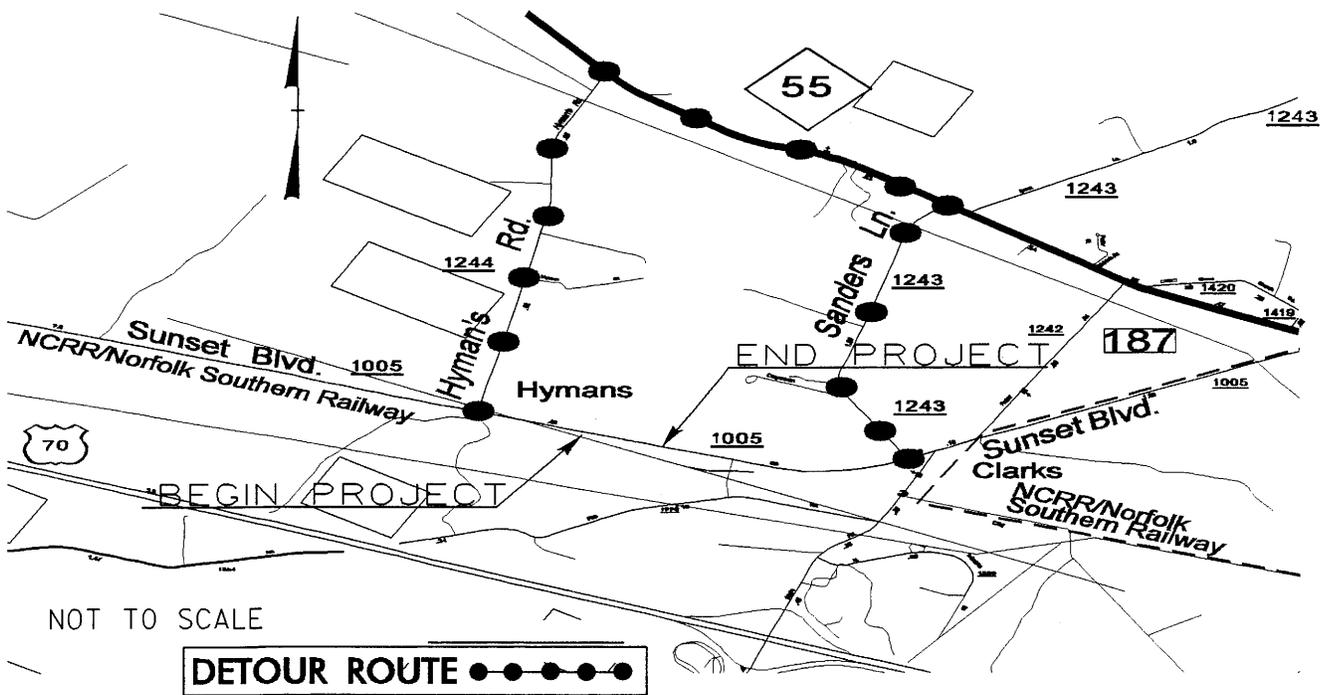
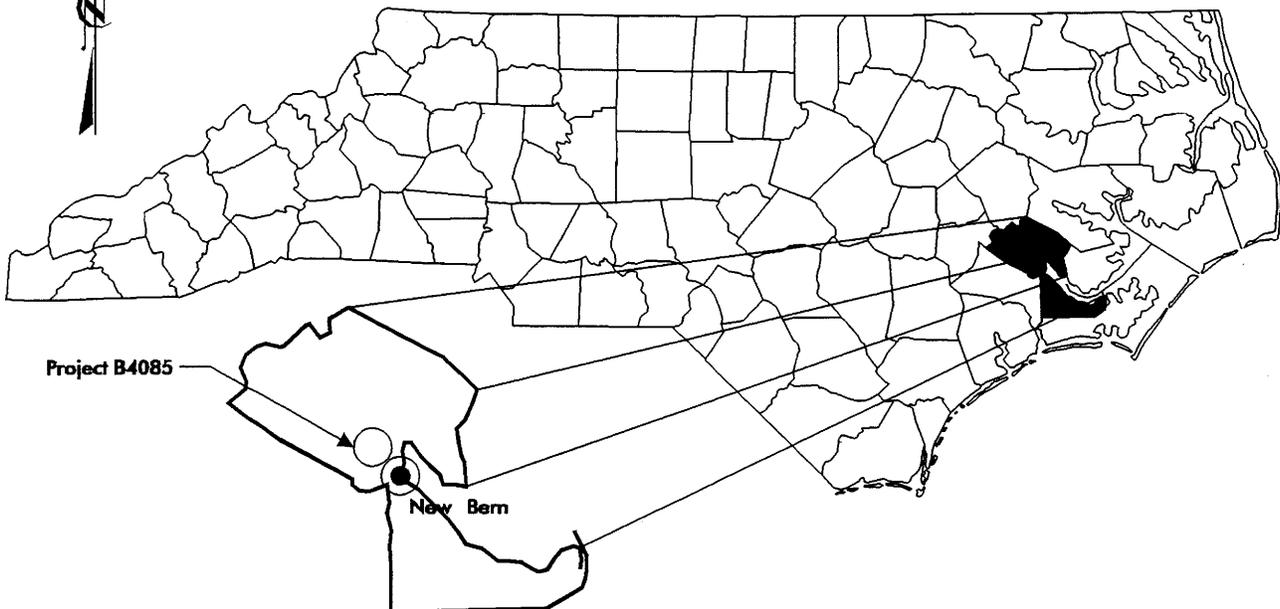
If there is an existing privately owned formal facility managed for recreational access (fishing, canoeing, or otherwise) NCDOT will address any project impacts to the facility through the right of way acquisition process. NCDOT will not, however, replace impacted parts of the facility as part of the project construction.

If formal access is desired where there is an informal recreational access (no formal facilities but site is used to access fishing, canoeing, and otherwise) or no existing access at all, NCDOT will include new access as part of the project construction under either of the following two conditions:

- 1) If, in the judgement of NCDOT, there is a strong transportation safety related need to include an access then NCDOT will improve the location as appropriate to resolve the safety concern. NCDOT will coordinate with local agencies on the long term management of the site. A separate government agency must agree to provide the long term maintenance and management of the site.
- 2) If all of the following five criteria is met, then NCDOT will as part of planning, design and construction, include a recreational access facility:
  - If there is a separate funding source outside of the North Carolina Department of Transportation
  - If there is a partnering government agency willing to maintain, fund, and manage the site
  - If there is a willing seller or provider of land needed for the facility
  - If there are not unacceptable impacts associated with developing the new recreational access facility (wetland impacts for example)
  - If the adjacent property owners and the majority of the public comments favor the addition of the recreational access facility

Any project constructed by NCDOT will be consistent with the Americans with Disabilities Act (ADA). Any exceptions to the guidelines will require the approval of the NCDOT State Highway Administrator and the FHWA Division Administrator.

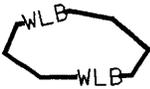
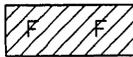
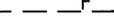
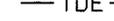
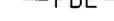
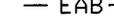
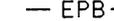
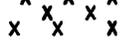
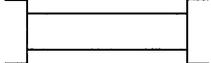
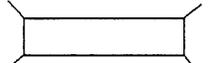
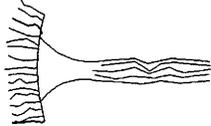
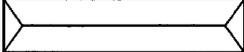
# NORTH CAROLINA



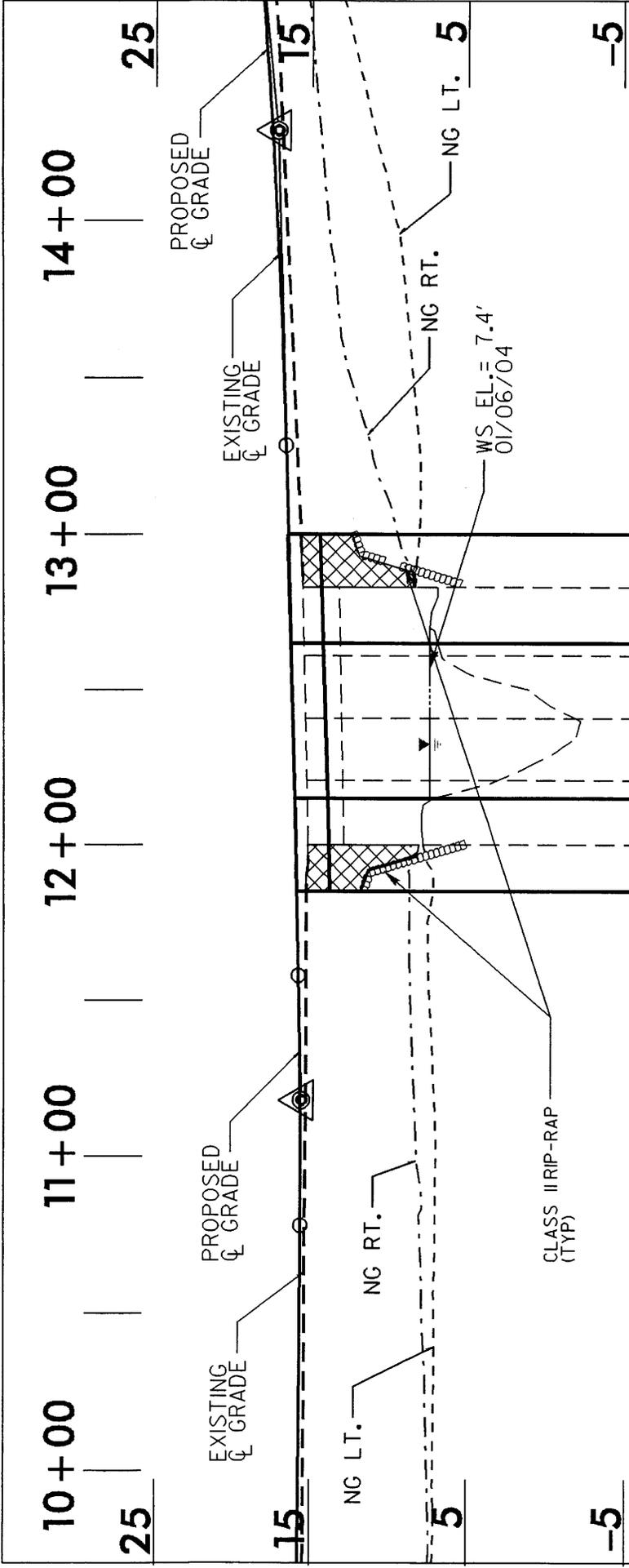
## VICINITY MAPS

NCDOT  
DIVISION OF HIGHWAYS  
CRAVEN COUNTY  
PROJECT: 3347011.2 (B-1111)  
REPLACEMENT OF BRIDGE #212  
ON SR 1005 OVER BACHELOR CREEK

# WETLAND LEGEND

- |  |  |
|--|--|
| <p>  WETLAND BOUNDARY<br/>  WETLAND<br/>  DENOTES FILL IN WETLAND<br/>  DENOTES FILL IN SURFACE WATER<br/>  DENOTES FILL IN SURFACE WATER (POND)<br/>  DENOTES TEMPORARY FILL IN WETLAND<br/>  DENOTES EXCAVATION IN WETLAND<br/>  DENOTES TEMPORARY FILL IN SURFACE WATER<br/>  DENOTES MECHANIZED CLEARING<br/>  FLOW DIRECTION<br/>  TOP OF BANK<br/>  EDGE OF WATER<br/>  PROP. LIMIT OF CUT<br/>  PROP. LIMIT OF FILL<br/>  PROP. RIGHT OF WAY<br/>  NATURAL GROUND<br/>  PROPERTY LINE<br/>  TEMP. DRAINAGE EASEMENT<br/>  PERMANENT DRAINAGE EASEMENT<br/>  EXIST. ENDANGERED ANIMAL BOUNDARY<br/>  EXIST. ENDANGERED PLANT BOUNDARY<br/>  WATER SURFACE<br/>  LIVE STAKES<br/>  BOULDER<br/>  COIR FIBER ROLLS         </p> | <p>  PROPOSED BRIDGE<br/>  PROPOSED BOX CULVERT<br/>  PROPOSED PIPE CULVERT<br/>             (DASHED LINES DENOTE EXISTING STRUCTURES)<br/>             12"-48" PIPES<br/>             54" PIPES &amp; ABOVE<br/>  SINGLE TREE<br/>  WOODS LINE<br/>  DRAINAGE INLET<br/>  ROOTWAD<br/>  RIP RAP<br/>  ADJACENT PROPERTY OWNER OR PARCEL NUMBER IF AVAILABLE<br/>  PREFORMED SCOUR HOLE<br/>  LEVEL SPREADER (LS)<br/>  DITCH / GRASS SWALE         </p> |
|--|--|

**NCDOT**  
**DIVISION OF HIGHWAYS**  
**CRAVEN COUNTY**  
**PROJECT: 33444.1.1.2 (B-4085)**  
**REPLACEMENT OF BRIDGE #212**  
**ON SR 1005 OVER BACHELOR CREEK**



PROFILE

NCDOT  
 DIVISION OF HIGHWAYS  
 CRAVEN COUNTY  
 PROJECT: 33444.1.1.2 (B-4085)  
 REPLACEMENT OF BRIDGE #212  
 ON SR 1005 OVER BACHELOR CREEK

SCALE: H= 50' HORIZ.  
 V= 10' VERT.

# PROPERTY OWNERS

NAMES AND ADDRESSES

PARCEL NO.	NAMES	ADDRESSES
①	INTERNATIONAL PAPER REALTY CORP.	865 John L. Regel Rd. Riegelwood, NC 28456
②	MONTA HUMPHREY BETTS	8421 Two Courts Dr. Raleigh, NC 27613
③	JAMES C. HUMPHREY, et ux	607 W. Wilson Creek Dr. New Bern, NC 28562
④	INTERNATIONAL PAPER REALTY CORP.	865 John L. Regel Rd. Riegelwood, NC 28456

## NCDOT

DIVISION OF HIGHWAYS

Craven County

PROJECT: 3344.1.1.2 (B-4005)

REPLACEMENT OF BRIDGE #212  
ON SR 1006 OVER BACHELOR CREEK

SHEET 4 OF 5

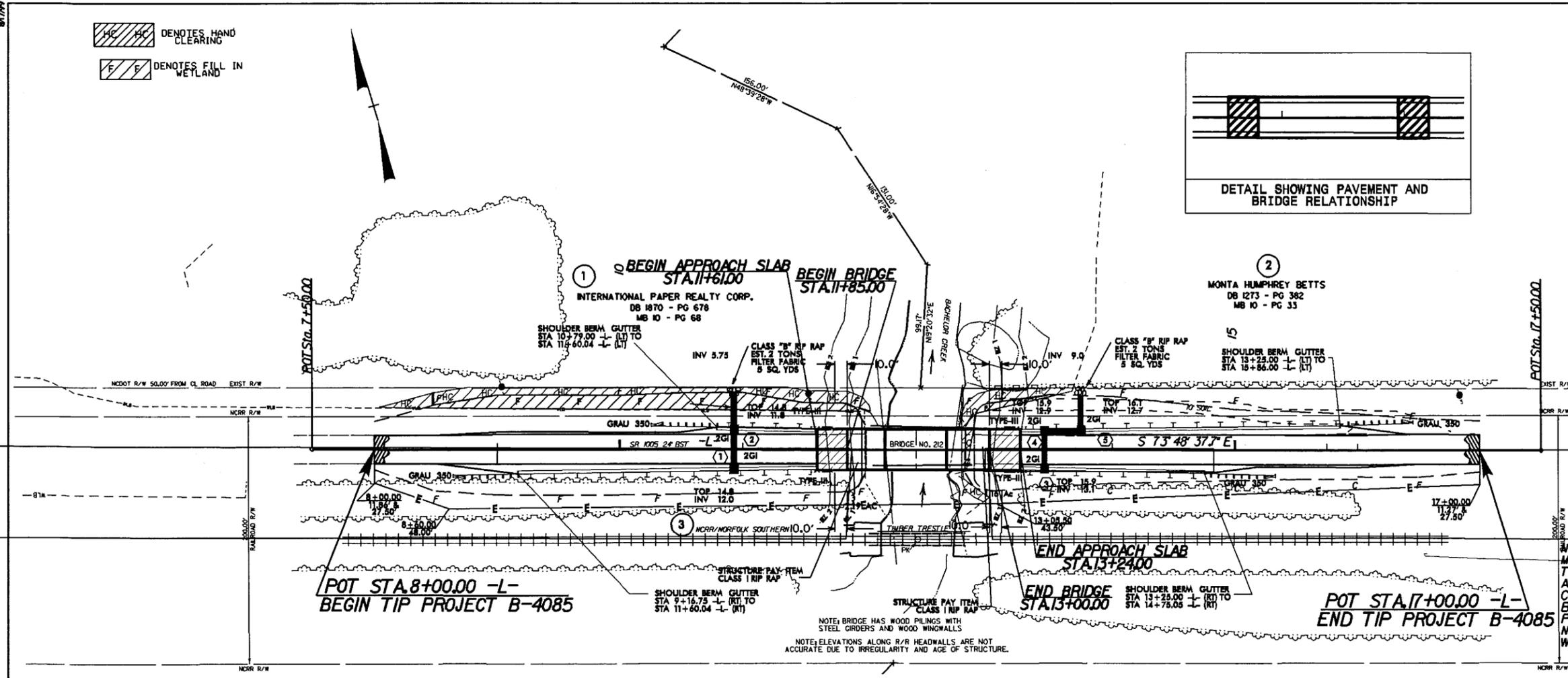
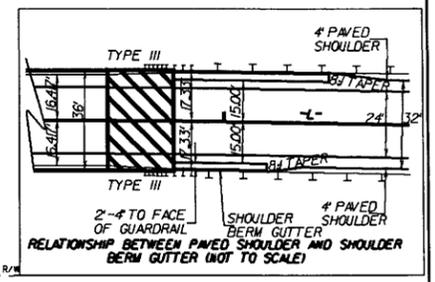
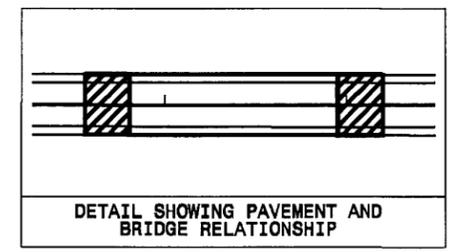
1/31/05

Permit Drawing  
Sheet 4 of 7



 DENOTES HAND CLEARING  
 DENOTES FILL IN WETLAND

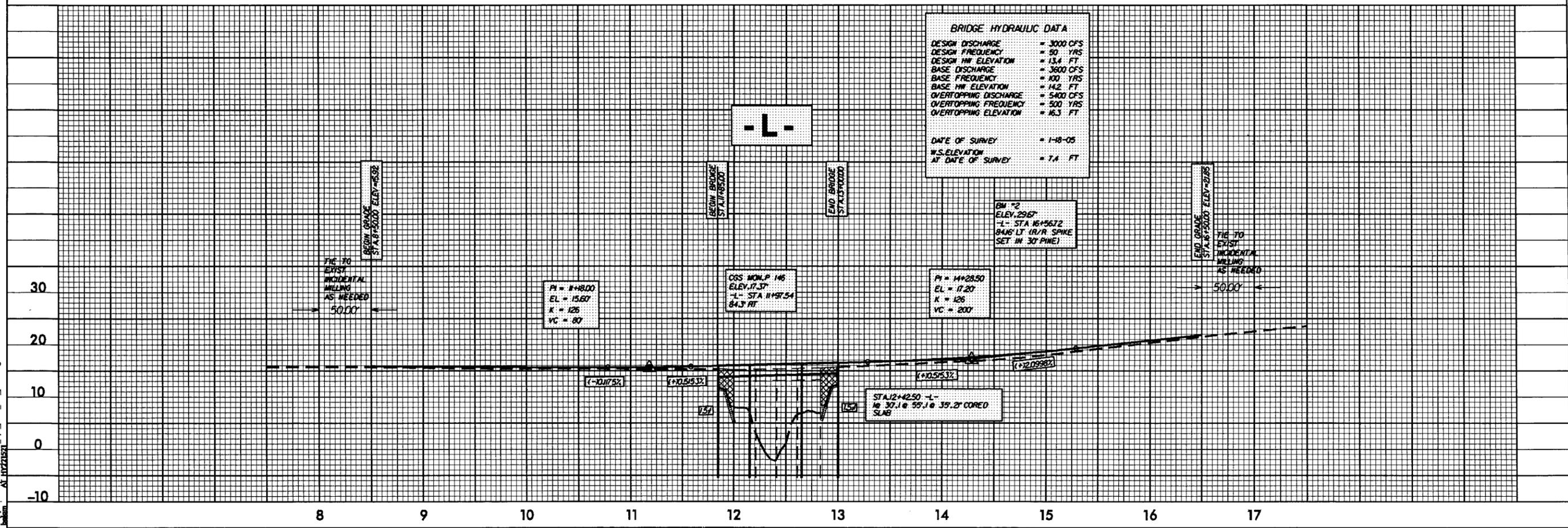
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R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
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<b>Sheet 6 of 7</b>	
<b>PRELIMINARY PLANS</b>	
DO NOT USE FOR CONSTRUCTION	



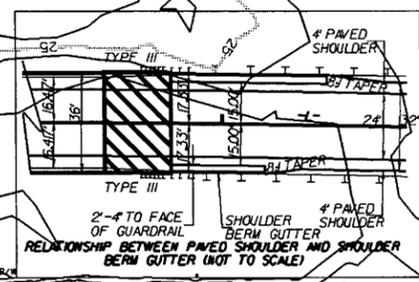
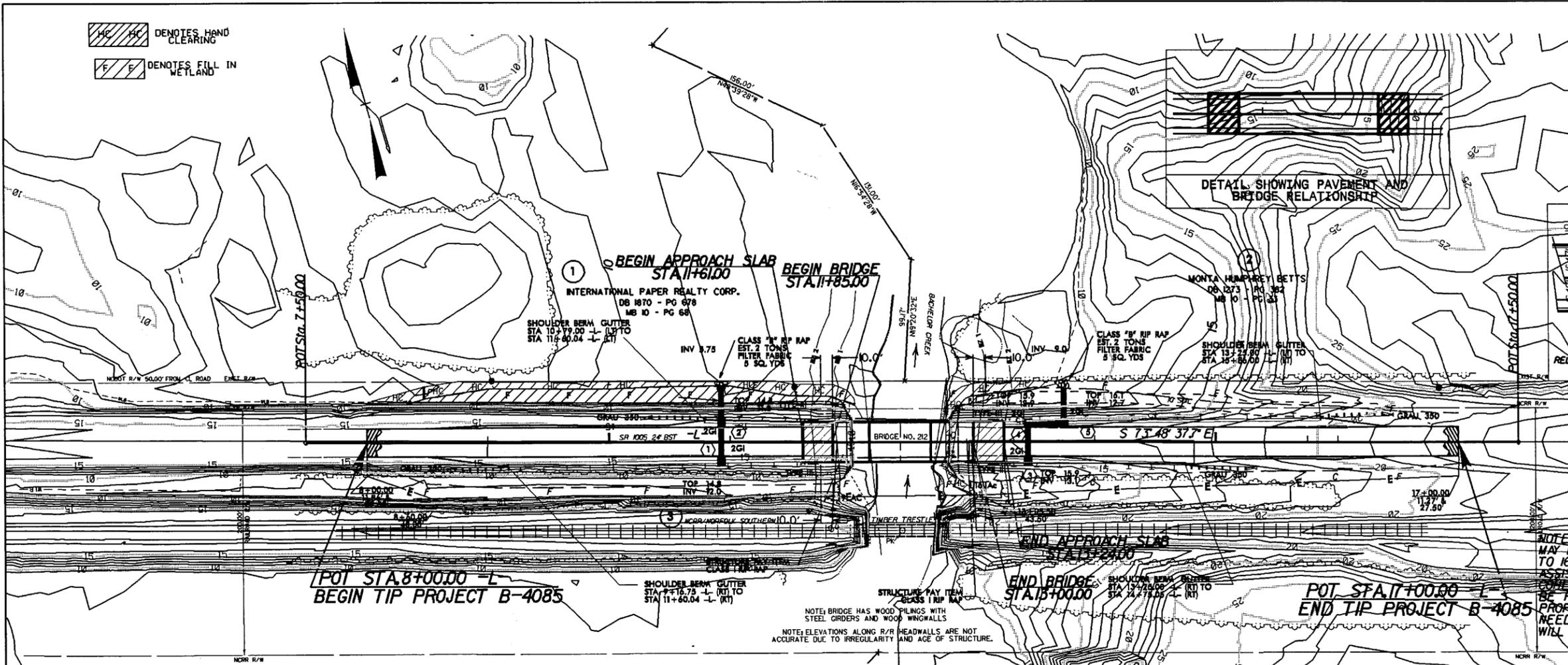
NOTE: FABRIC FOR SOIL STABILIZATION MAY BE USED FROM -L- STATION 15+30 +/- TO 16+60 +/- ALONG THE RIGHT SIDE TO ASSIST IN STABILIZING POTENTIALLY WEAK COHESIVE DEPOSITS. THE FABRIC SHOULD BE PLACED FROM EXISTING TOE OF FILL TO PROPOSED TOE OF FILL ALONG -L-. THE NEED FOR FABRIC FOR SOIL STABILIZATION WILL BE DETERMINED BY THE ENGINEER.

**BRIDGE HYDRAULIC DATA**

DESIGN DISCHARGE	= 3000 CFS
DESIGN FREQUENCY	= 50 YRS
DESIGN HW ELEVATION	= 13.4 FT
BASE DISCHARGE	= 3600 CFS
BASE FREQUENCY	= 100 YRS
BASE HW ELEVATION	= 14.2 FT
OVERTOPPING DISCHARGE	= 5400 CFS
OVERTOPPING FREQUENCY	= 500 YRS
OVERTOPPING ELEVATION	= 16.3 FT
DATE OF SURVEY	= 1-18-05
W.S. ELEVATION AT DATE OF SURVEY	= 7.4 FT



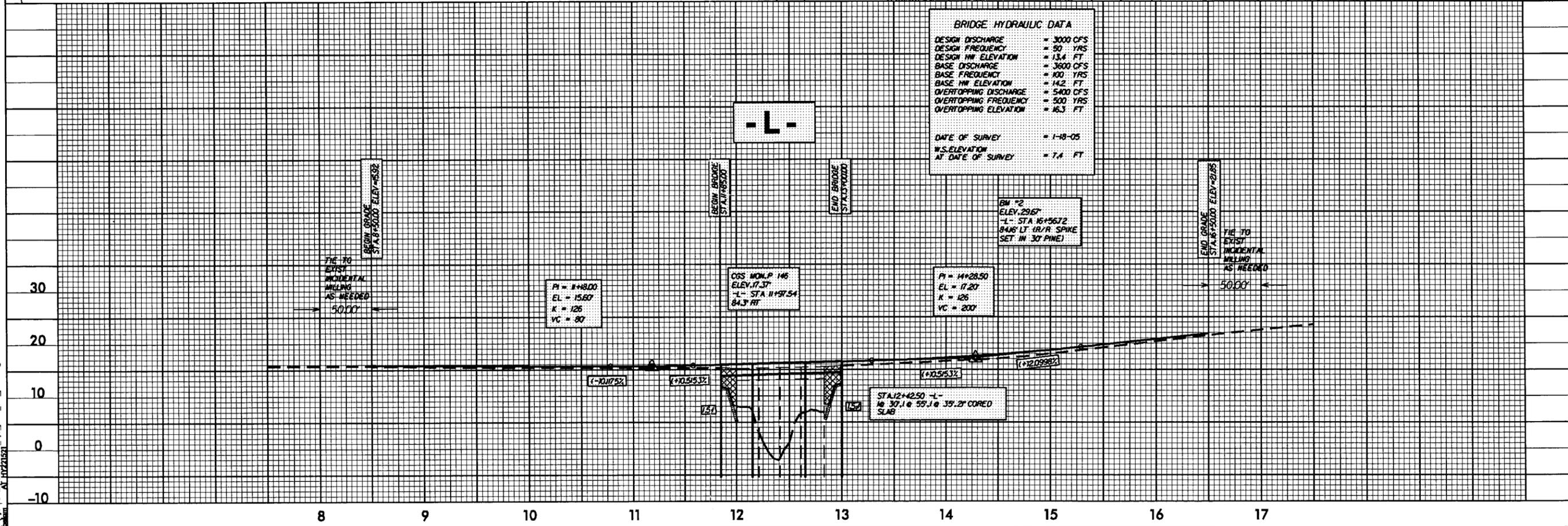
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 11/21/07



NOTE: FABRIC FOR SOIL STABILIZATION MAY BE USED FROM STA 15+30+/- TO 16+60+/- ALONG THE RIGHT SIDE TO ASSIST IN STABILIZING POTENTIALLY WEAK COLLAPSE DEPOSITS. THE FABRIC SHOULD BE PLACED FROM EXISTING TOE OF FILL TO PROPOSED TOE OF FILL ALONG -L-. THE NEED FOR FABRIC FOR SOIL STABILIZATION WILL BE DETERMINED BY THE ENGINEER.

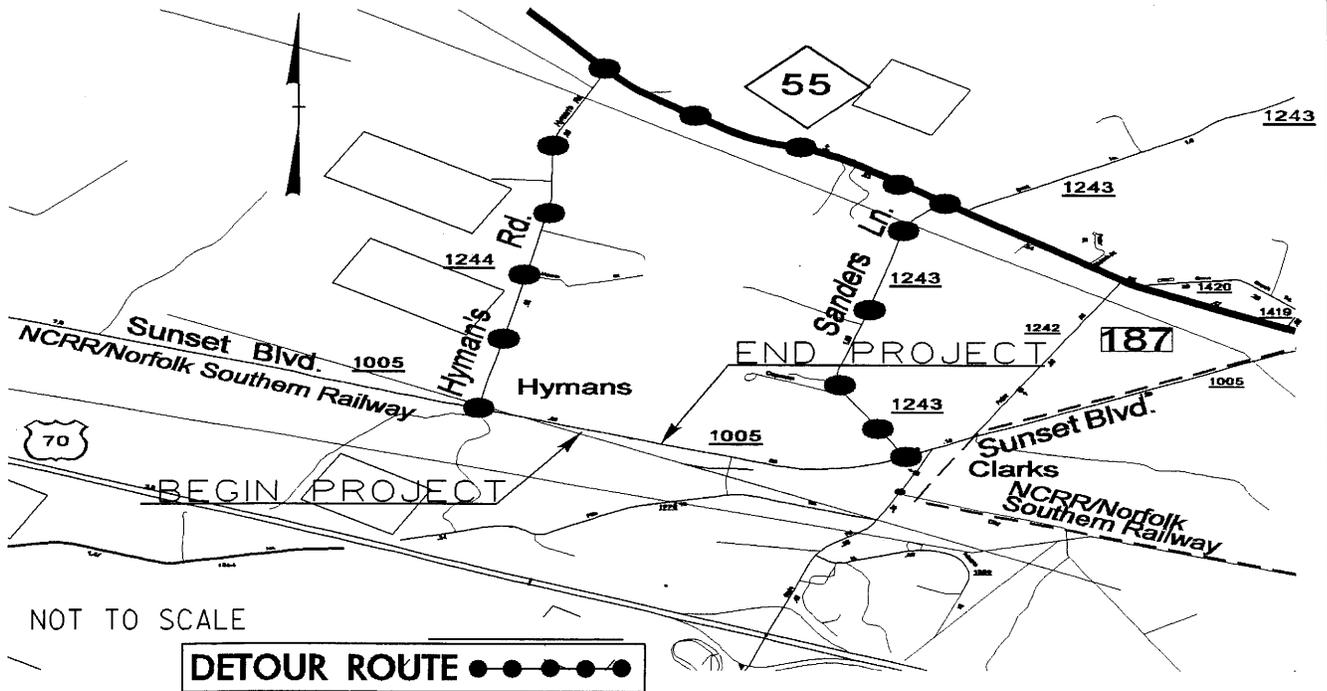
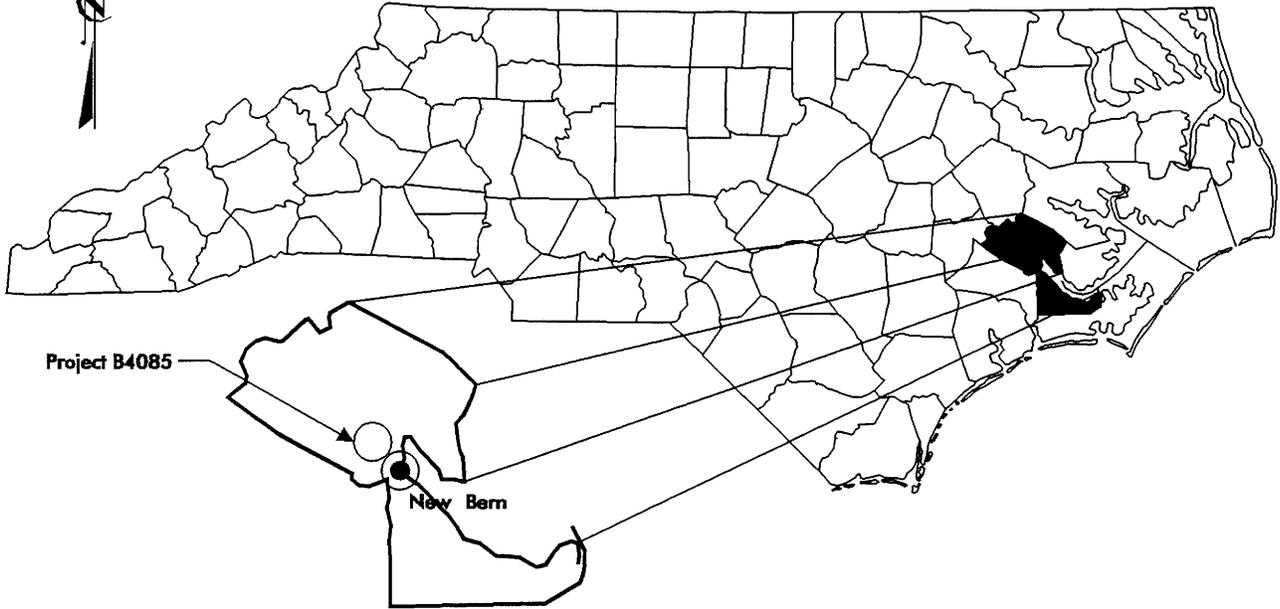
NOTE: BRIDGE HAS WOOD PILING WITH STEEL GIRDERS AND WOOD WINGWALLS  
NOTE: ELEVATIONS ALONG R/R HEADWALLS ARE NOT ACCURATE DUE TO IRREGULARITY AND AGE OF STRUCTURE.

BRIDGE HYDRAULIC DATA	
DESIGN DISCHARGE	= 3000 CFS
DESIGN FREQUENCY	= 50 YRS
DESIGN HW ELEVATION	= 13.4 FT
BASE DISCHARGE	= 3600 CFS
BASE FREQUENCY	= 100 YRS
BASE HW ELEVATION	= 14.2 FT
OVERTOPPING DISCHARGE	= 5400 CFS
OVERTOPPING FREQUENCY	= 500 YRS
OVERTOPPING ELEVATION	= 16.3 FT
DATE OF SURVEY	= 1-18-05
W.S. ELEVATION AT DATE OF SURVEY	= 7.1 FT



13-JUL-2007 10:54 C:\temp\p1005\_hyd\_perm\_well\_per04.dgn

# NORTH CAROLINA



## NEUSE RIVER BUFFER VICINITY MAPS

NCDOT

DIVISION OF HIGHWAYS

CRAVEN COUNTY

PROJECT: 33444.1.1.2 (B-4085)

REPLACEMENT OF BRIDGE #212  
ON SR 1005 OVER BACHELOR CREEK

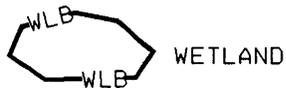
SHEET 1 OF 5

1 / 31 / 05

Buffer Drawing  
Sheet 1 of 4

# BUFFER LEGEND

—WLB— WETLAND BOUNDARY



—BZ— RIPARIAN BUFFER ZONE

—BZ1— RIPARIAN BUFFER ZONE 1  
30 ft (9.2m)

—BZ2— RIPARIAN BUFFER ZONE 2  
20 ft (6.1m)

→ → FLOW DIRECTION

—TB— TOP OF BANK

—WE— EDGE OF WATER

—C— PROP. LIMIT OF CUT

—F— PROP. LIMIT OF FILL

▲ PROP. RIGHT OF WAY

—NG— NATURAL GROUND

—PL— PROPERTY LINE

—TDE— TEMP. DRAINAGE EASEMENT

—PDE— PERMANENT DRAINAGE EASEMENT

—EAB— EXIST. ENDANGERED ANIMAL BOUNDARY

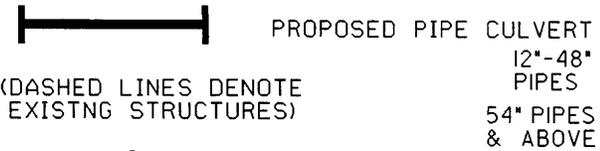
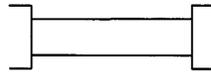
—EPB— EXIST. ENDANGERED PLANT BOUNDARY

—▽— WATER SURFACE

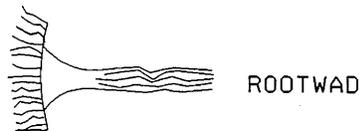
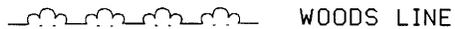
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LIVE STAKES

~ ~ BOULDER

— — COIR FIBER ROLLS



(DASHED LINES DENOTE EXISTING STRUCTURES)



## NCDOT

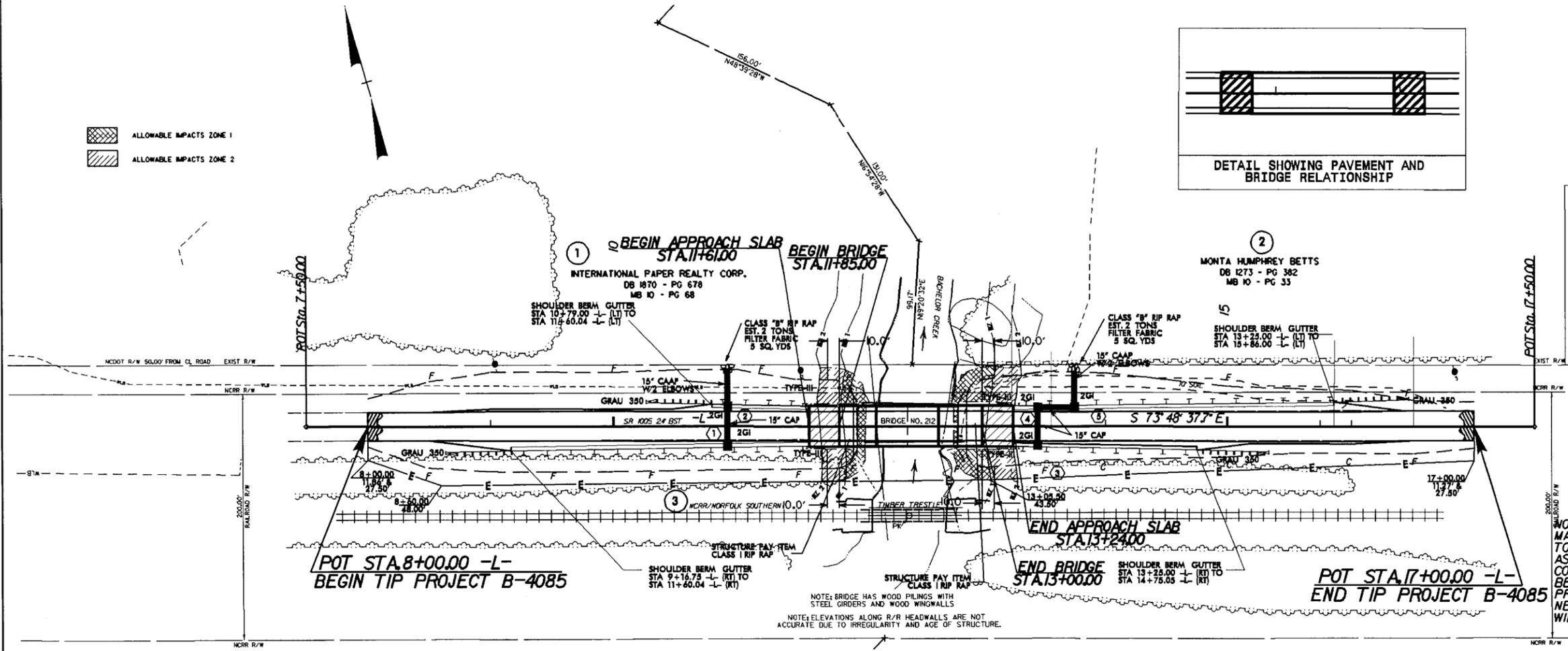
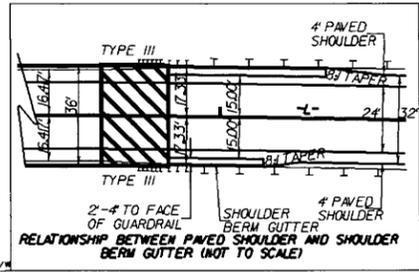
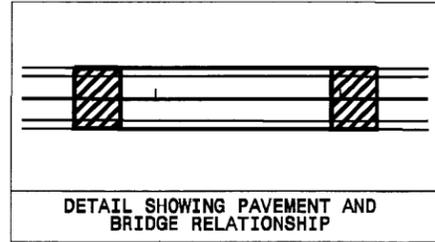
DIVISION OF HIGHWAYS  
CRAVEN COUNTY

PROJECT: 33444.1.1.2 (B-4085)

REPLACEMENT OF BRIDGE #212  
ON SR 1005 OVER BACHELOR CREEK



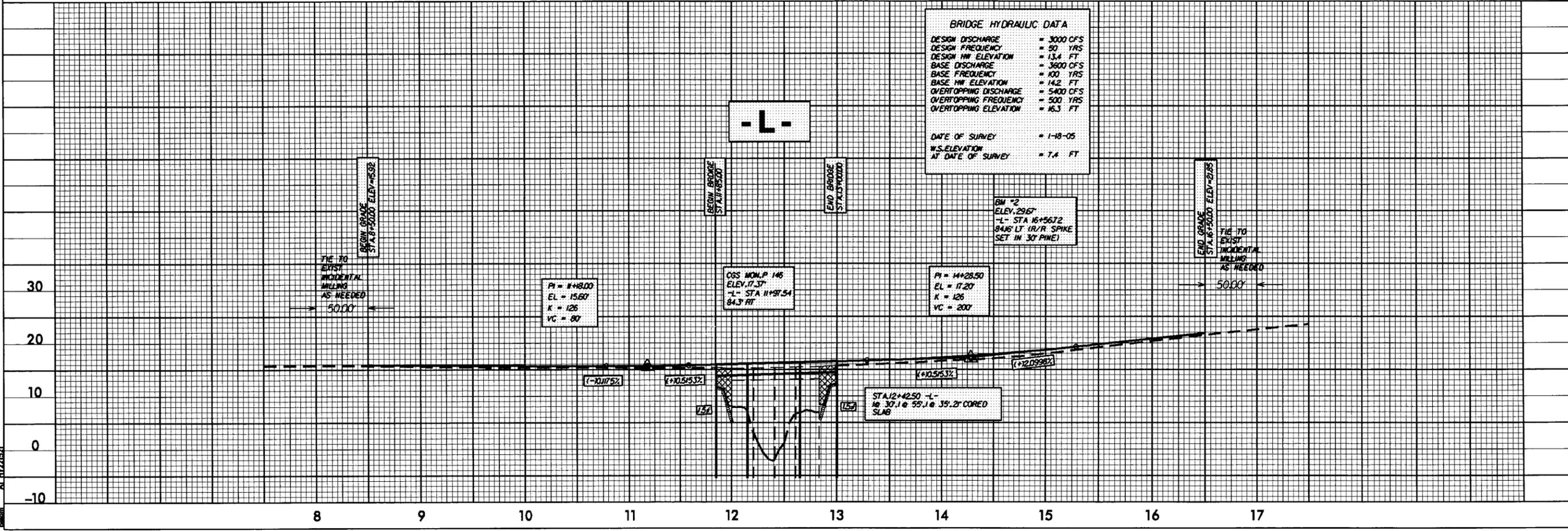
 ALLOWABLE IMPACTS ZONE 1  
 ALLOWABLE IMPACTS ZONE 2



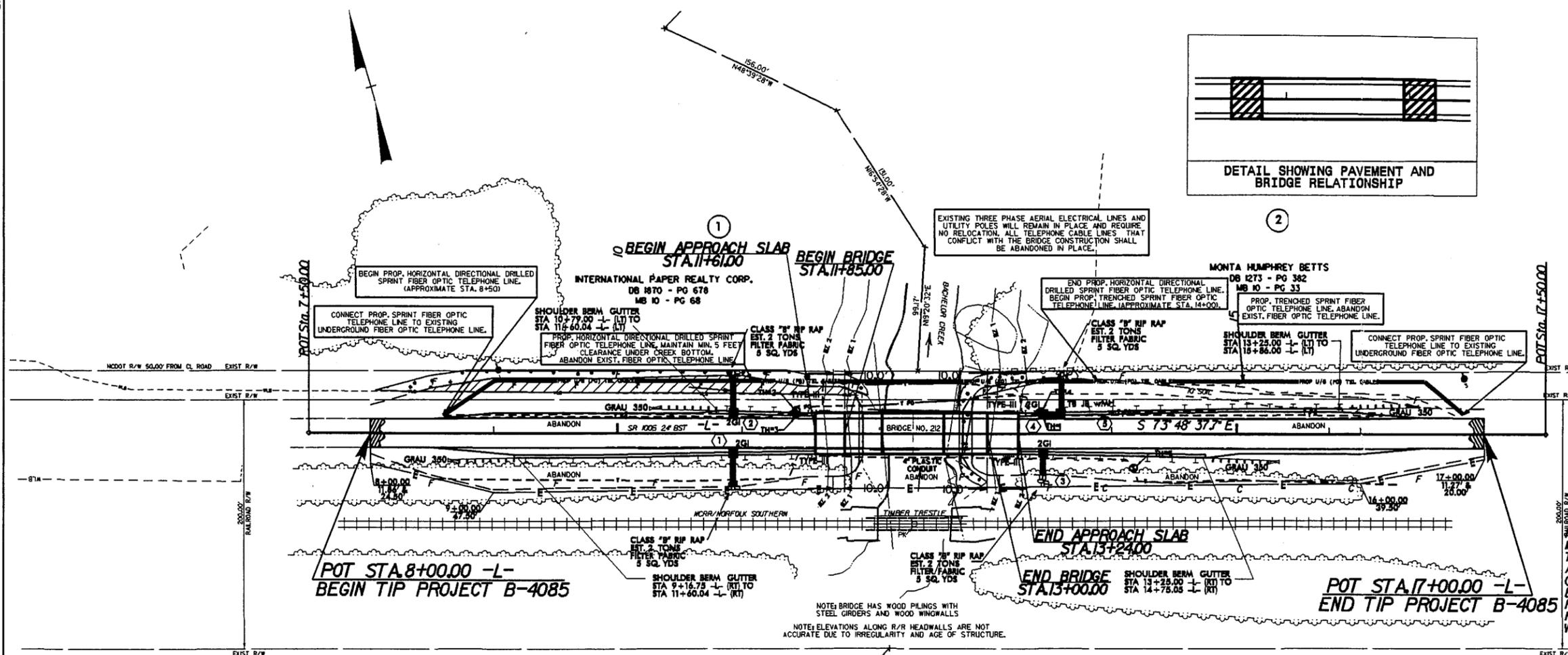
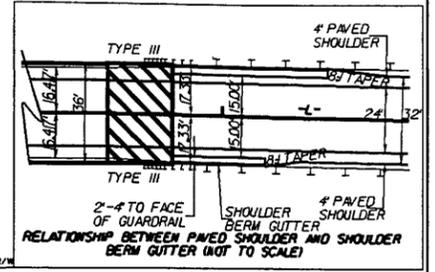
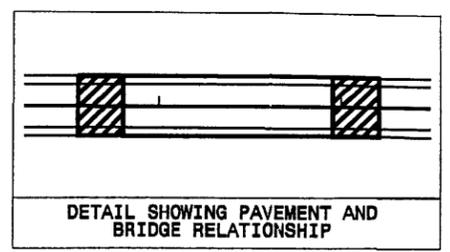
NOTE: FABRIC FOR SOIL STABILIZATION MAY BE USED FROM -L- STATION 15+30+/- TO 16+60+/- ALONG THE RIGHT SIDE TO ASSIST IN STABILIZING POTENTIALLY WEAK COHESIVE DEPOSITS. THE FABRIC SHOULD BE PLACED FROM EXISTING TOE OF FILL TO PROPOSED TOE OF FILL ALONG -L-. THE NEED FOR FABRIC FOR SOIL STABILIZATION WILL BE DETERMINED BY THE ENGINEER.

NOTE: BRIDGE HAS WOOD PILING WITH STEEL GIRDERS AND WOOD WINGWALLS  
 NOTE: ELEVATIONS ALONG R/R HEADWALLS ARE NOT ACCURATE DUE TO IRREGULARITY AND AGE OF STRUCTURE.

BRIDGE HYDRAULIC DATA	
DESIGN DISCHARGE	= 3000 CFS
DESIGN FREQUENCY	= 50 YRS
DESIGN HW ELEVATION	= 13.4 FT
BASE DISCHARGE	= 3600 CFS
BASE FREQUENCY	= 100 YRS
BASE HW ELEVATION	= 14.2 FT
OVERTOPPING DISCHARGE	= 5400 CFS
OVERTOPPING FREQUENCY	= 500 YRS
OVERTOPPING ELEVATION	= 16.3 FT
DATE OF SURVEY	= 1-18-05
W.S. ELEVATION AT DATE OF SURVEY	= 7.6 FT



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 AT 11721531



EXISTING THREE PHASE AERIAL ELECTRICAL LINES AND UTILITY POLES WILL REMAIN IN PLACE AND REQUIRE NO RELOCATION. ALL TELEPHONE CABLE LINES THAT CONFLICT WITH THE BRIDGE CONSTRUCTION SHALL BE ABANDONED IN PLACE.

END PROP. HORIZONTAL DIRECTIONAL DRILLED SPRINT FIBER OPTIC TELEPHONE LINE. BEGIN PROP. TRENCHED SPRINT FIBER OPTIC TELEPHONE LINE. (APPROXIMATE STA. 14+00.00)

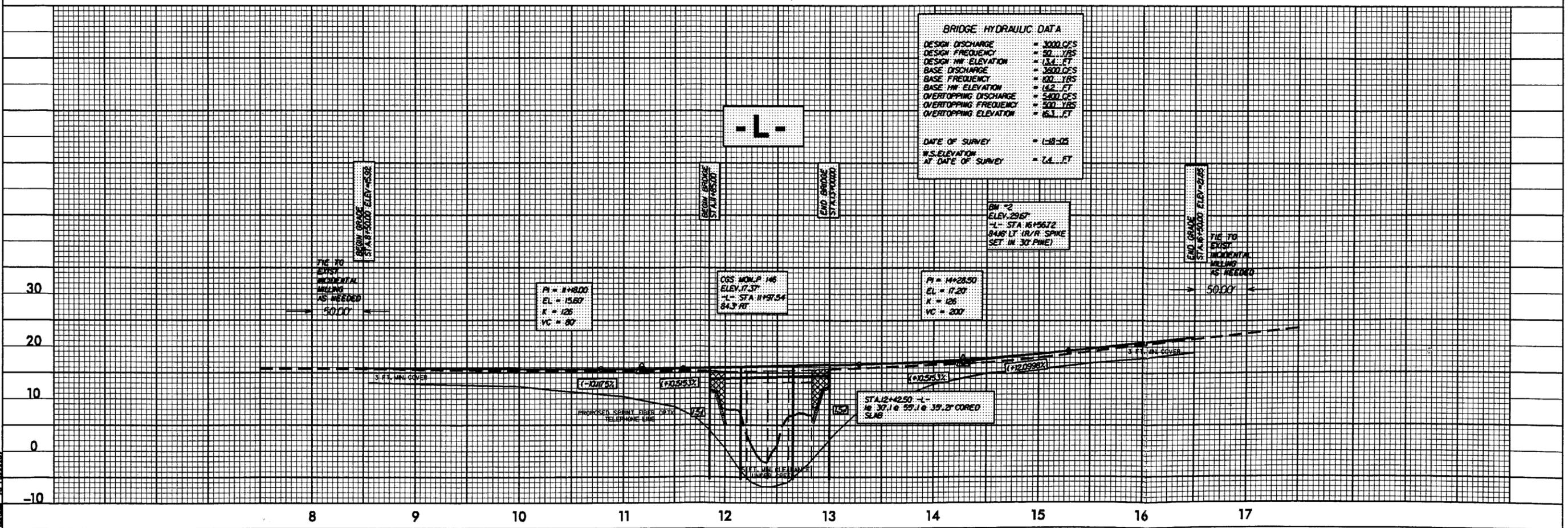
MONTA HUMPHREY BETTS  
DB 1273 - PG 382  
MB 10 - PG 33

PROP. TRENCHED SPRINT FIBER OPTIC TELEPHONE LINE. ABANDON EXIST. FIBER OPTIC TELEPHONE LINE.

NOTE: FABRIC FOR SOIL STABILIZATION MAY BE USED FROM -L- STATION 15+30+/- TO 16+60+/- ALONG THE RIGHT SIDE TO ASSIST IN STABILIZING POTENTIALLY WEAK COHESIVE DEPOSITS. THE FABRIC SHOULD BE PLACED FROM EXISTING TOE OF FILL TO PROPOSED TOE OF FILL ALONG -L-. THE NEED FOR FABRIC FOR SOIL STABILIZATION WILL BE DETERMINED BY THE ENGINEER.

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OVERTOPPING ELEVATION	= 16.3 FT
DATE OF SURVEY	= 1-18-05
N.S. ELEVATION AT DATE OF SURVEY	= 7.6 FT



PI = 11+88.00  
EL = 15.60  
K = 125  
VC = 80

CGS MON. P. 146  
ELEV. 17.37  
-L- STA. 11+91.54  
84.3 FT

BM #2  
ELEV. 29.67  
-L- STA. 16+56.72  
848' LT. (R/R SPINE  
SET IN 30' PINE)

PI = 14+28.50  
EL = 11.20  
K = 125  
VC = 200

END GRADE  
STA. 16+30.00  
ELEV. 21.25

THE 70  
EXIST.  
INCIDENTAL  
MILLING  
IS NEEDED  
50.00'

STA. 12+42.50 -L-  
16.30' x 59.1' x 39.2' CORED  
SLAB

See Sheet 1-A For Index of Sheets

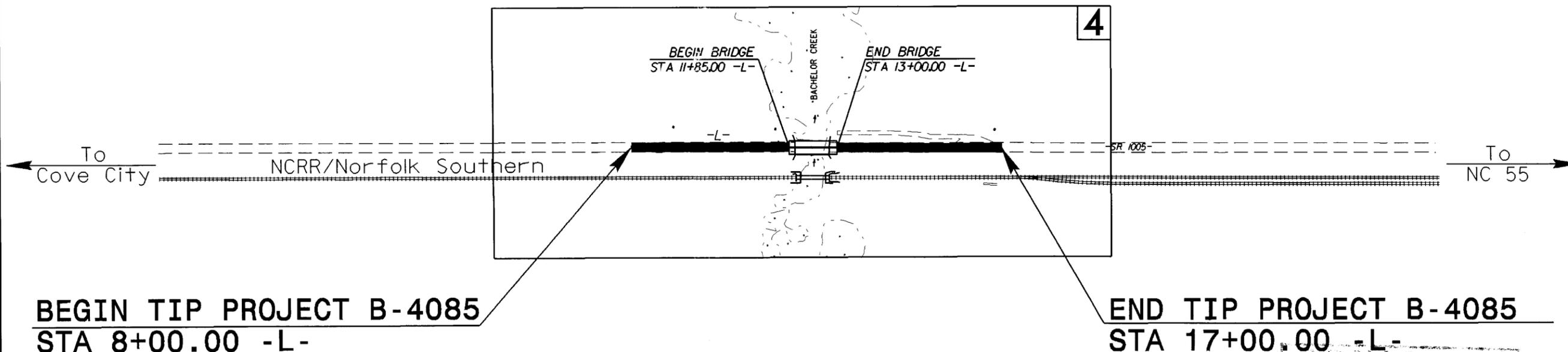
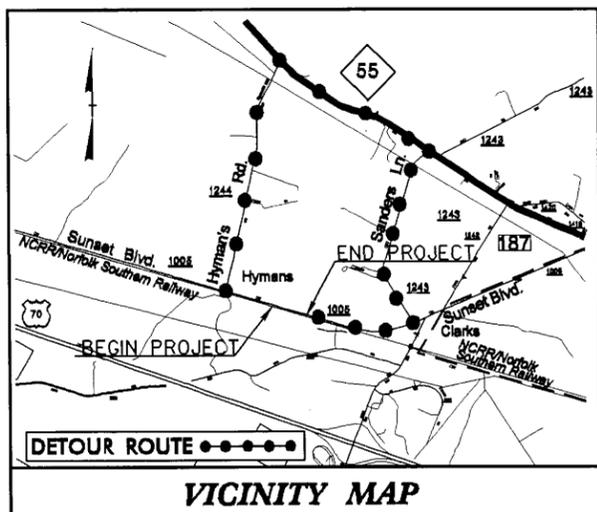
STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

**CRAVEN COUNTY**

LOCATION: BRIDGE NO. 212 OVER BACHELOR CREEK ON SR 1005

TYPE OF WORK: SIGNALS, STRUCTURE, GRADING, DRAINAGE, PAVING

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4085	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
33444.1.1	BRSTP-1005 (7)	PE	
33444.2.1	BRSTP-1005(7)	RW/UTL	
33444.3.1	BRSTP-1005(7)	CONST	

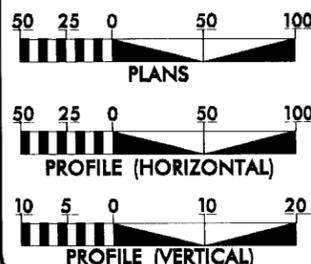


BEGIN TIP PROJECT B-4085  
STA 8+00.00 -L-

END TIP PROJECT B-4085  
STA 17+00.00 -L-

THERE IS NO CONTROL OF ACCESS ON THIS PROJECT.

GRAPHIC SCALES



DESIGN DATA

ADT 2007 = 3622  
ADT 2025 = 5500  
DHV = 10 %  
D = 60 %  
T = 6 % \*  
V = 60 MPH  
FUNC CLASS = COLLECTOR  
\* TTST 3% DUAL 3%

PROJECT LENGTH

Length of Roadway TIP Project B-4085 = 0.148 miles  
Length of Structure TIP Project B-4085 = 0.022 miles  
Total Length of TIP Project B-4085 = 0.170 miles

Prepared in the Office of:  
**DIVISION OF HIGHWAYS**

1000 Birch Ridge Dr., Raleigh NC, 27610

2006 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:  
MAY 24, 2005

LETTING DATE:  
JANUARY 16, 2007

TONY HOUSER, PE  
PROJECT ENGINEER

BRUCE B. PAYNE, PE  
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

SIGNATURE:

ROADWAY DESIGN ENGINEER

SIGNATURE:

DIVISION OF HIGHWAYS  
STATE OF NORTH CAROLINA



STATE HIGHWAY DESIGN ENGINEER

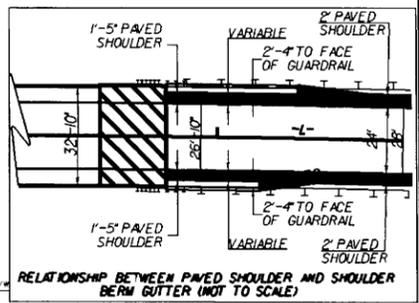
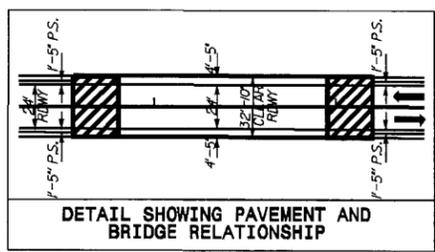
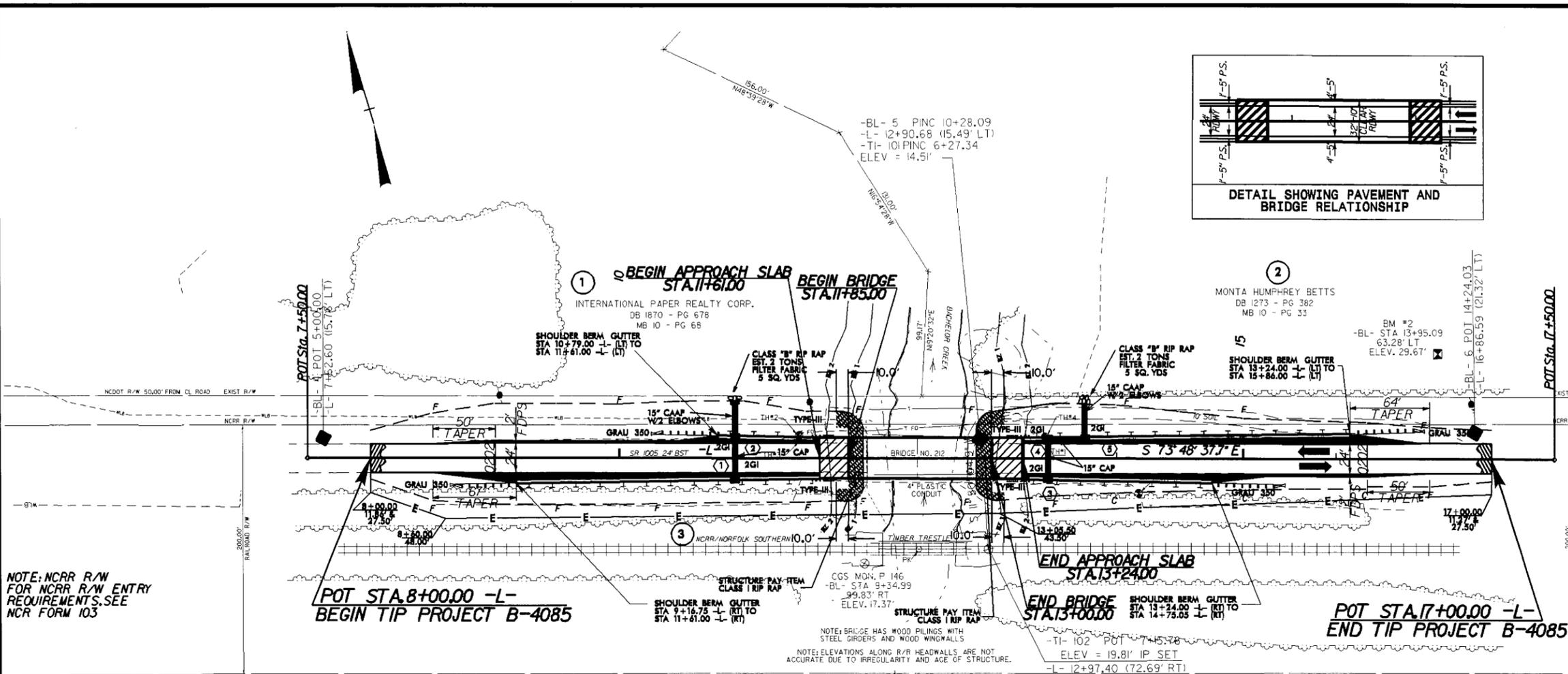
TIP PROJECT: B-4085

CONTRACT: C201428

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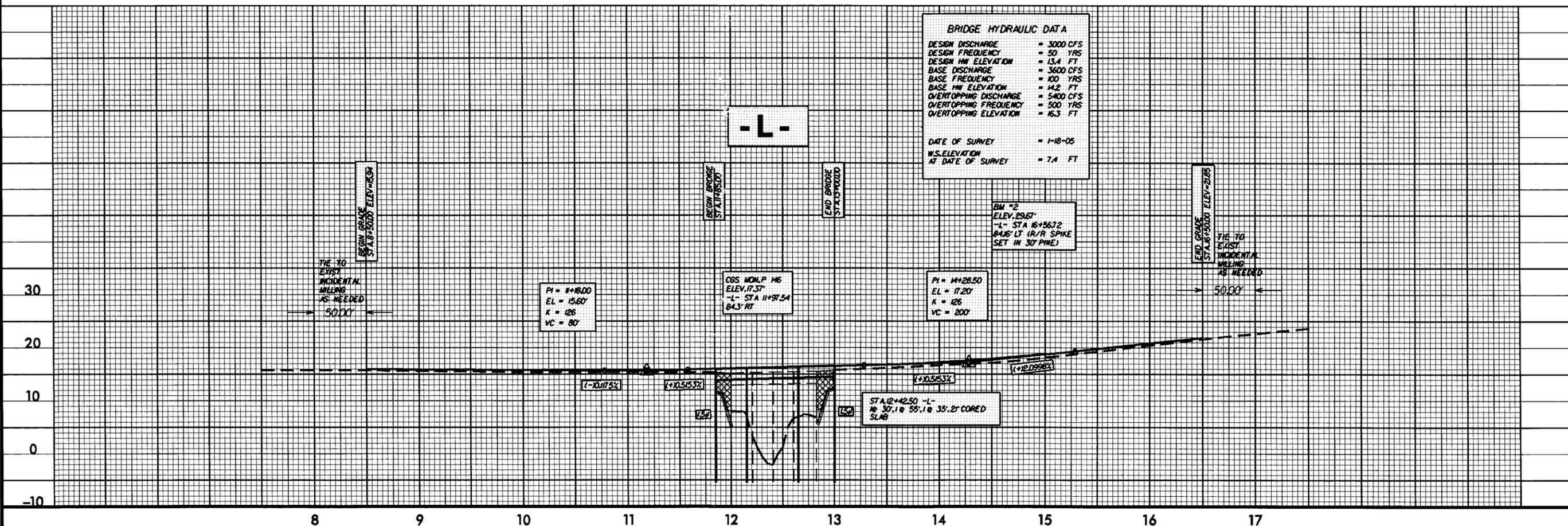


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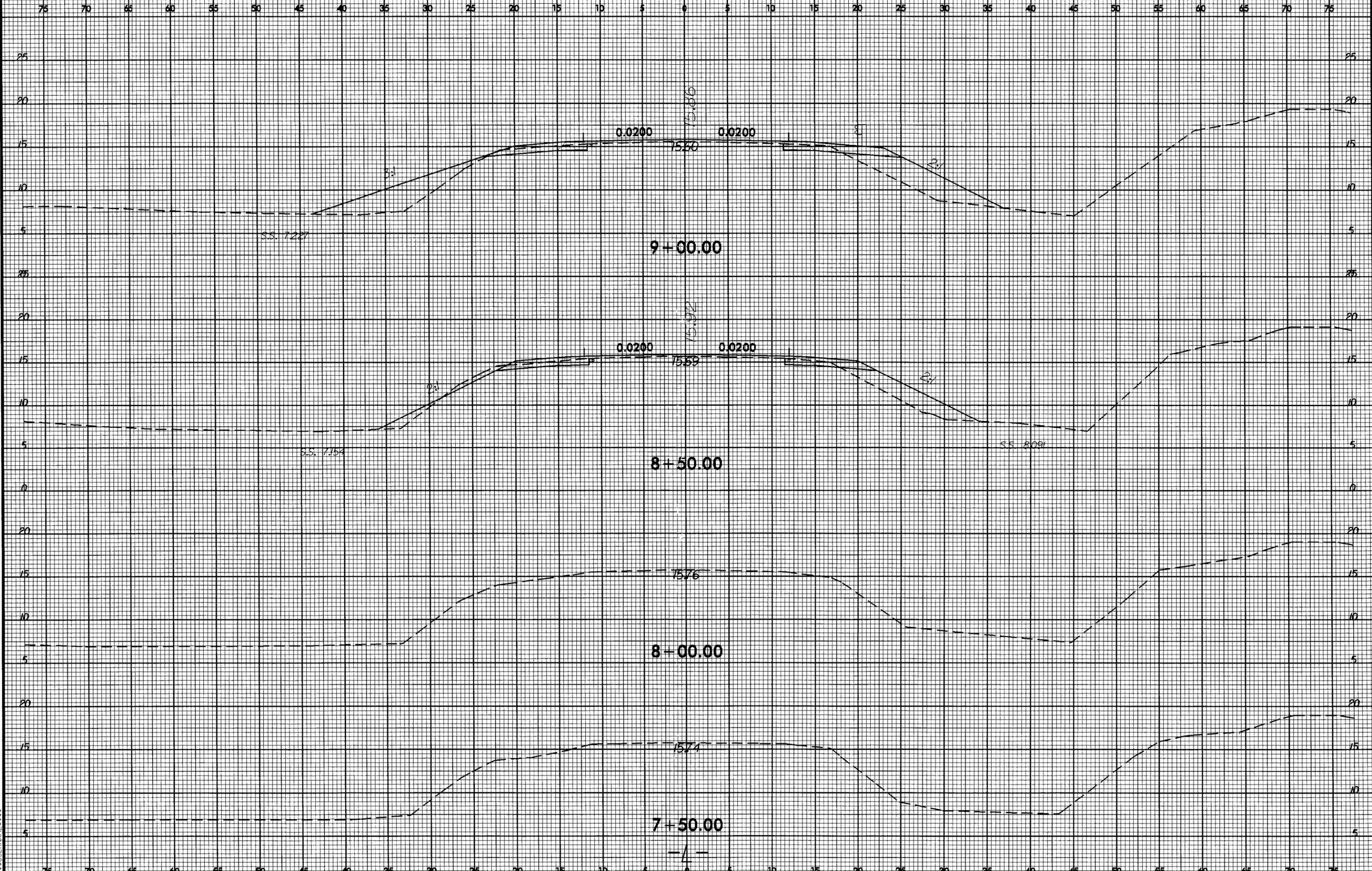


NOTE: NCRR R/W FOR NCRR R/W ENTRY REQUIREMENTS SEE NCR FORM 103

NOTE: FABRIC FOR SOIL STABILIZATION MAY BE USED FROM -L- STATION 15+30+/- TO 16+60+/- ALONG THE RIGHT SIDE TO ASSIST IN STABILIZING POTENTIALLY WEAK COHESIVE DEPOSITS. THE FABRIC SHOULD BE PLACED FROM EXISTING TOE OF FILL TO PROPOSED TOE OF FILL ALONG -L-. THE NEED FOR FABRIC FOR SOIL STABILIZATION WILL BE DETERMINED BY THE ENGINEER.

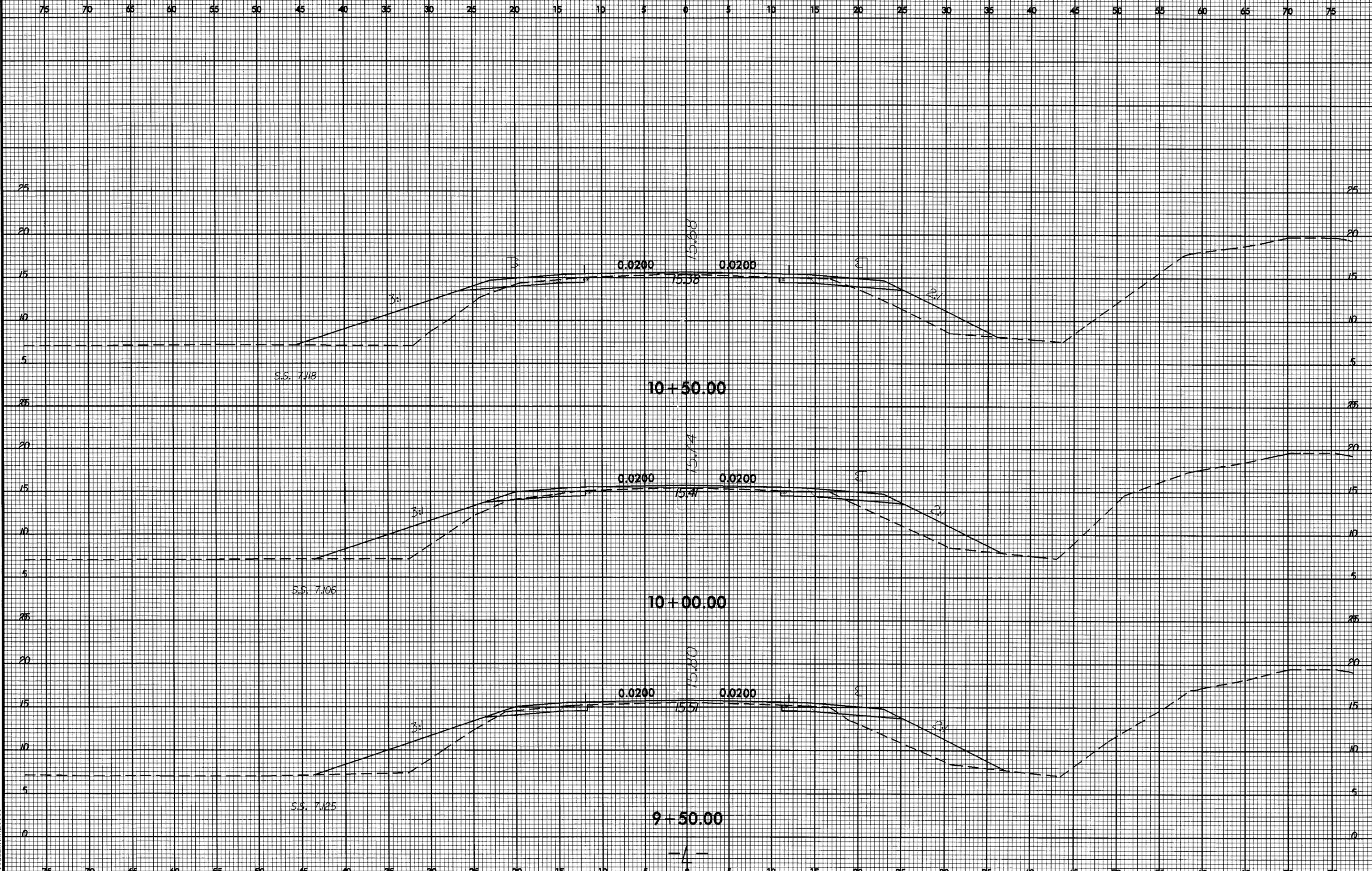


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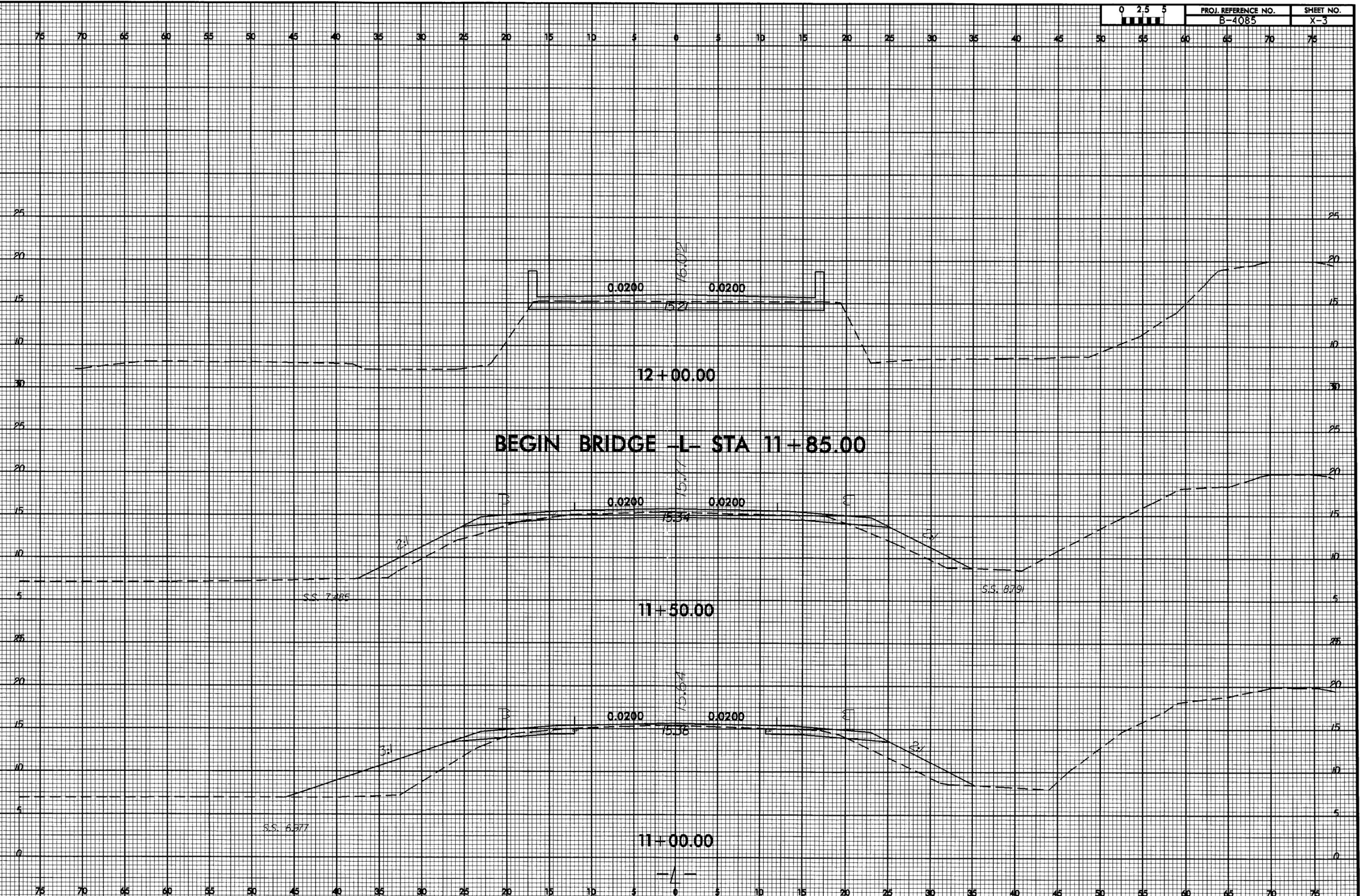
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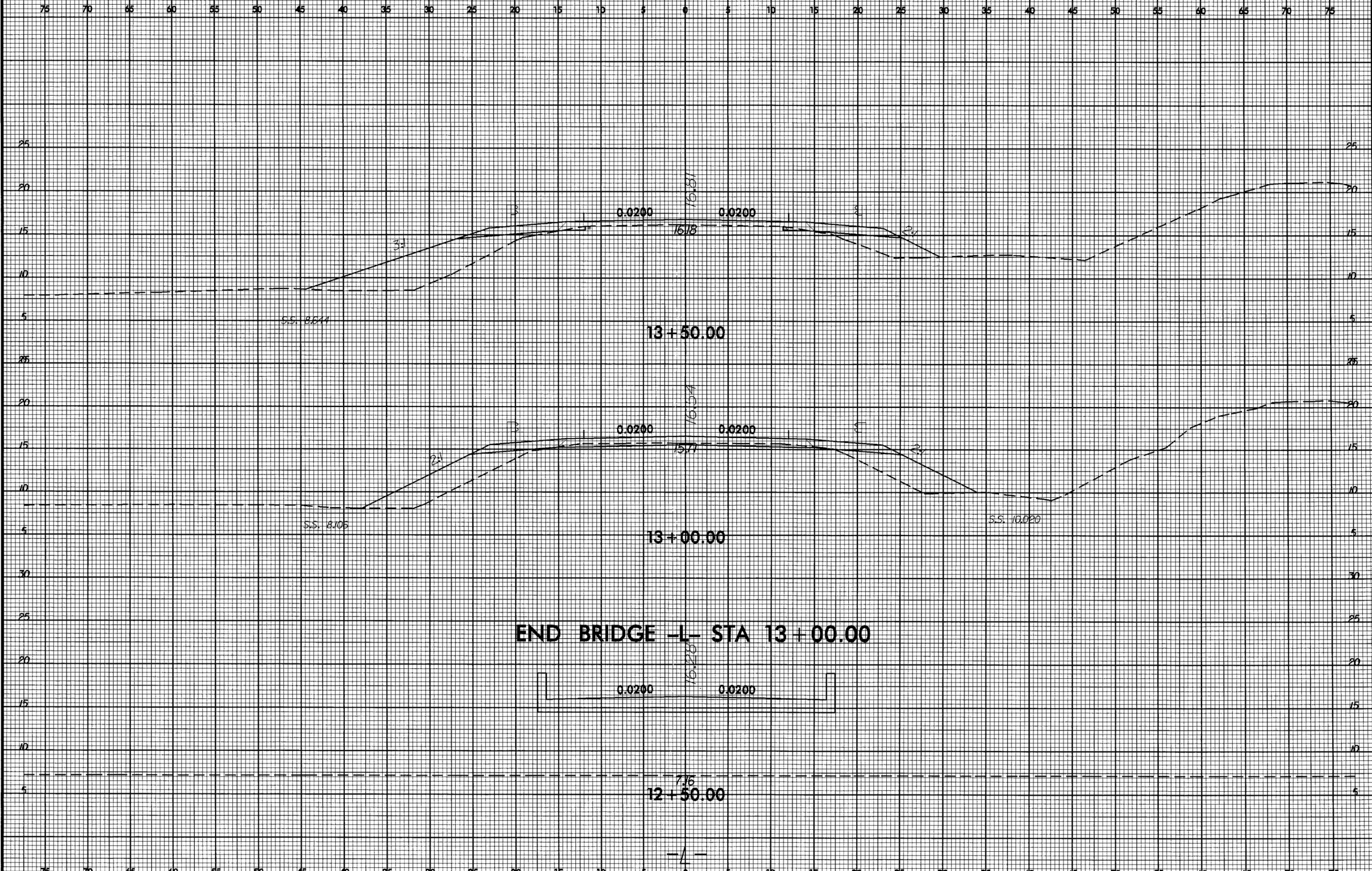
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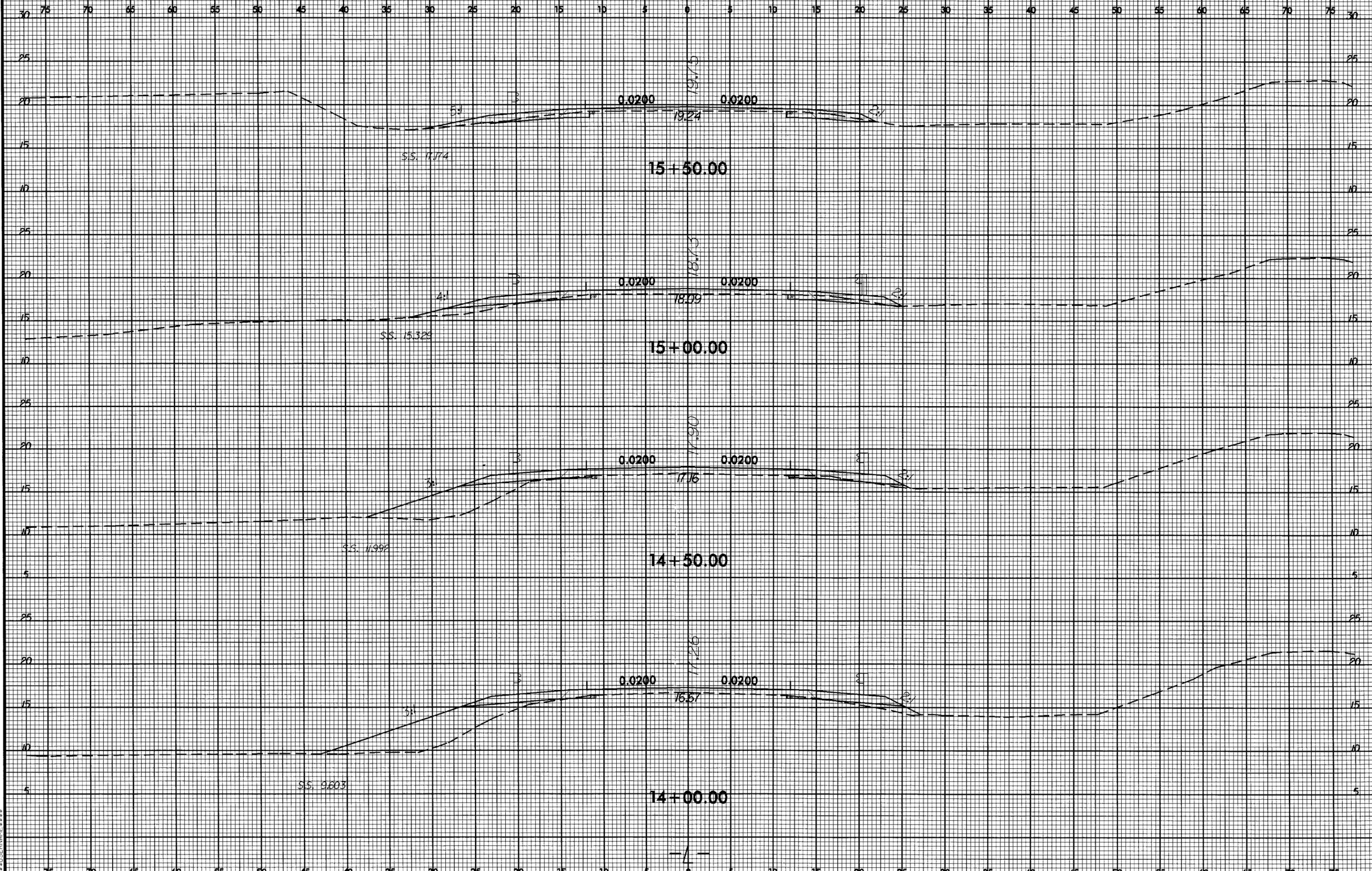
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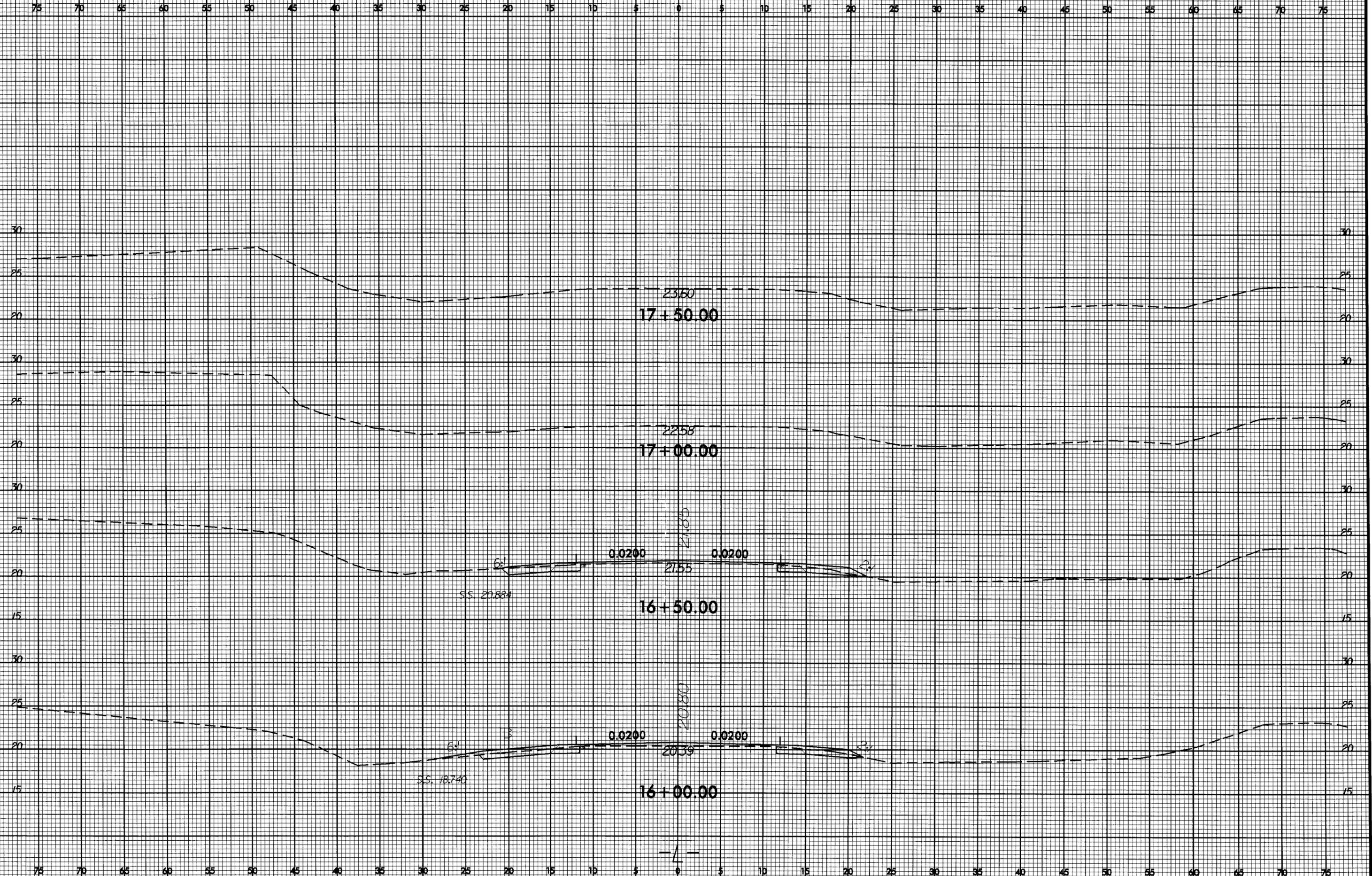
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CATEGORICAL EXCLUSION ACTION CLASSIFICATION FORM

TIP Project No.	<u>B-4085</u>
State Project No.	<u>8.2171201</u>
W.B.S. No.	<u>33444.1.1</u>
Federal Project No.	<u>BRSTP-1005</u>

A. Project Description:

**The purpose of this project is to replace Craven County Bridge No. 212 on SR 1005 over Bachelor Creek. The replacement structure will be a bridge 115 feet long and 30 feet wide. The cross section will include two 12-foot lanes and 3-foot offsets. The west approach will be approximately 330 feet and east approach will be approximately 300 feet long. The approach cross section will include two 12-foot lanes and 8-foot shoulders. Traffic will be detoured offsite during construction (see Figure 1). The roadway will be designed as a Major Collector with a 60 mile per hour design speed.**

B. Purpose and Need:

**Bridge Maintenance Records indicate the bridge has a sufficiency rating of 35.2 out of 100. The bridge's four-span superstructure is composed of a concrete deck on continuous I-beams. The substructure is composed of timber caps on timber piles. The bridge's deck width (32 feet wide) and low structural appraisal (2 out of 10) qualify the bridge as both functionally obsolete and structurally deficient and therefore eligible for FHWA's Highway Bridge Replacement Program.**

C. Proposed Improvements:

Circle one or more of the following Type II improvements that apply to the project:

1. Modernization of a highway by resurfacing, restoration, rehabilitation, reconstruction, adding shoulders, or adding auxiliary lanes (e.g., parking, weaving, turning, climbing).
  - a. Restoring, Resurfacing, Rehabilitating, and Reconstructing pavement (3R and 4R improvements)
  - b. Widening roadway and shoulders without adding through lanes
  - c. Modernizing gore treatments
  - d. Constructing lane improvements (merge, auxiliary, and turn lanes)
  - e. Adding shoulder drains
  - f. Replacing and rehabilitating culverts, inlets, and drainage pipes, including safety treatments
  - g. Providing driveway pipes
  - h. Performing minor bridge widening (less than one through lane)
  - i. Slide Stabilization
  - j. Structural BMP's for water quality improvement
2. Highway safety or traffic operations improvement projects including the installation of ramp metering control devices and lighting.

- a. Installing ramp metering devices
  - b. Installing lights
  - c. Adding or upgrading guardrail
  - d. Installing safety barriers including Jersey type barriers and pier protection
  - e. Installing or replacing impact attenuators
  - f. Upgrading medians including adding or upgrading median barriers
  - g. Improving intersections including relocation and/or realignment
  - h. Making minor roadway realignment
  - i. Channelizing traffic
  - j. Performing clear zone safety improvements including removing hazards and flattening slopes
  - k. Implementing traffic aid systems, signals, and motorist aid
  - l. Installing bridge safety hardware including bridge rail retrofit
3. Bridge rehabilitation, reconstruction, or replacement or the construction of grade separation to replace existing at-grade railroad crossings.
    - a. Rehabilitating, reconstructing, or replacing bridge approach slabs
    - b. Rehabilitating or replacing bridge decks
    - c. Rehabilitating bridges including painting (no red lead paint), scour repair, fender systems, and minor structural improvements
    - d. Replacing a bridge (structure and/or fill)
  4. Transportation corridor fringe parking facilities.
  5. Construction of new truck weigh stations or rest areas.
  6. Approvals for disposal of excess right-of-way or for joint or limited use of right-of-way, where the proposed use does not have significant adverse impacts.
  7. Approvals for changes in access control.
  8. Construction of new bus storage and maintenance facilities in areas used predominantly for industrial or transportation purposes where such construction is not inconsistent with existing zoning and located on or near a street with adequate capacity to handle anticipated bus and support vehicle traffic.
  9. Rehabilitation or reconstruction of existing rail and bus buildings and ancillary facilities where only minor amounts of additional land are required and there is not a substantial increase in the number of users.
  10. Construction of bus transfer facilities (an open area consisting of passenger shelters, boarding areas, kiosks and related street improvements) when located in a commercial area or other high activity center in which there is adequate street capacity for projected bus traffic.
  11. Construction of rail storage and maintenance facilities in areas used predominantly for industrial or transportation purposes where such construction is not inconsistent with existing zoning and where there is no significant noise impact on the surrounding community.

12. Acquisition of land for hardship or protective purposes, advance land acquisition loans under section 3(b) of the UMT Act. Hardship and protective buying will be permitted only for a particular parcel or a limited number of parcels. These types of land acquisition qualify for a CE only where the acquisition will not limit the evaluation of alternatives, including shifts in alignment for planned construction projects, which may be required in the NEPA process. No project development on such land may proceed until the NEPA process has been completed.
13. Acquisition and construction of wetland, stream and endangered species mitigation sites.
14. Remedial activities involving the removal, treatment or monitoring of soil or groundwater contamination pursuant to state or federal remediation guidelines.

D. Special Project Information: (Include Environmental Commitments and Permits Required.)

**Estimated Costs:**

Total Construction	\$ 700,000
Right of Way	\$ 50,000
Total	\$ 740,000

**Estimated Traffic:**

Current	-	3100 vpd
Year 2025	-	5500 vpd
TTST	-	3%
Dual	-	3%

**Design Exceptions:** There are no design exceptions anticipated for this project.

**Functional Classification:** Rural Major Collector

**Bridge Demolition:** There will be no appreciable fill associated with debris from demolition of the bridge.

**Alternatives Discussion:** An offsite detour will be utilized during construction including SR 1244, NC 55, SR 1243 and back to SR 1005. The delay for the average road user would be approximately 4 minutes over 2.2 miles additional travel. The Division, the School Bus Transportation Director for Craven County, and the Emergency Services Coordinator for Craven County have no objection to an offsite detour at this location. The School Bus Director did indicate that a turn-around would need to be provided and asked that NCDOT provide one prior to road closure.

E. Threshold Criteria

The following evaluation of threshold criteria must be completed for Type II actions

<u>ECOLOGICAL</u>	<u>YES</u>	<u>NO</u>
(1) Will the project have a substantial impact on any unique or important natural resource?	<input type="checkbox"/>	<u>X</u>
(2) Does the project involve habitat where federally listed endangered or threatened species may occur?	<input type="checkbox"/>	<u>X</u>
(3) Will the project affect anadromous fish?	<input checked="" type="checkbox"/>	_____
(4) If the project involves wetlands, is the amount of permanent and/or temporary wetland taking less than one-tenth (1/10) of an acre and have all practicable measures to avoid and minimize wetland takings been evaluated?	<u>X</u>	<input type="checkbox"/>
(5) Will the project require the use of U. S. Forest Service lands?	<input type="checkbox"/>	<u>X</u>
(6) Will the quality of adjacent water resources be adversely impacted by proposed construction activities?	<input type="checkbox"/>	<u>X</u>
(7) Does the project involve waters classified as Outstanding Water Resources (OWR) and/or High Quality Waters (HQW)?	<input type="checkbox"/>	<u>X</u>
(8) Will the project require fill in waters of the United States in any of the designated mountain trout counties?	<input type="checkbox"/>	<u>X</u>
(9) Does the project involve any known underground storage tanks (UST's) or hazardous materials sites?	<input type="checkbox"/>	<u>X</u>
<u>PERMITS AND COORDINATION</u>	<u>YES</u>	<u>NO</u>
(10) If the project is located within a CAMA county, will the project significantly affect the coastal zone and/or any "Area of Environmental Concern" (AEC)?	<input type="checkbox"/>	<u>X</u>
(11) Does the project involve Coastal Barrier Resources Act resources?	<input type="checkbox"/>	<u>X</u>
(12) Will a U. S. Coast Guard permit be required?	<input type="checkbox"/>	<u>X</u>
(13) Will the project result in the modification of any existing regulatory floodway?	<input type="checkbox"/>	<u>X</u>

(14) Will the project require any stream relocations or channel changes?   X

SOCIAL, ECONOMIC, AND CULTURAL RESOURCES

YES      NO

(15) Will the project induce substantial impacts to planned growth or land use for the area?   X

(16) Will the project require the relocation of any family or business?   X

(17) Will the project have a disproportionately high and adverse human health and environmental effect on any minority or low-income population?   X

(18) If the project involves the acquisition of right of way, is the amount of right of way acquisition considered minor?  X

(19) Will the project involve any changes in access control?   X

(20) Will the project substantially alter the usefulness and/or land use of adjacent property?   X

(21) Will the project have an adverse effect on permanent local traffic patterns or community cohesiveness?   X

(22) Is the project included in an approved thoroughfare plan and/or Transportation Improvement Program (and is, therefore, in conformance with the Clean Air Act of 1990)?  X

(23) Is the project anticipated to cause an increase in traffic volumes?   X

(24) Will traffic be maintained during construction using existing roads, staged construction, or on-site detours?  X

(25) If the project is a bridge replacement project, will the bridge be replaced at its existing location (along the existing facility) and will all construction proposed in association with the bridge replacement project be contained on the existing facility?  X

(26) Is there substantial controversy on social, economic, or environmental grounds concerning the project?   X

(27) Is the project consistent with all Federal, State, and local laws relating to the environmental aspects of the project?  X

(28) Will the project have an "effect" on structures/properties eligible for or listed on the National Register of Historic Places?   X

- |      |   |                          |              |
|------|---|--------------------------|--------------|
| (29) | Will the project affect any archaeological remains which are important to history or pre-history?   | <input type="checkbox"/> | <u>  X  </u> |
| (30) | Will the project require the use of Section 4(f) resources (public parks, recreation lands, wildlife and waterfowl refuges, historic sites, or historic bridges, as defined in Section 4(f) of the U. S. Department of Transportation Act of 1966)? | <input type="checkbox"/> | <u>  X  </u> |
| (31) | Will the project result in any conversion of assisted public recreation sites or facilities to non-recreation uses, as defined by Section 6(f) of the Land and Water Conservation Act of 1965, as amended?  | <input type="checkbox"/> | <u>  X  </u> |
| (32) | Will the project involve construction in, across, or adjacent to a river designated as a component of or proposed for inclusion in the National System of Wild and Scenic Rivers?   | <input type="checkbox"/> | <u>  X  </u> |

F. Additional Documentation Required for Unfavorable Responses in Part E

Question 3. Will the project affect anadromous fish?

The stream is habitat for anadromous fish. Impact from the project will be minimized by the use of the measures included below which are repeated in the Project Commitments Green Sheet of this document.

- NCDOT will implement Stream Crossing Guidelines for Anadromous Fish
- The North Carolina Division of Marine Fisheries has indicated that a moratorium on in-water construction will be in place from February 1 to September 30 of any given year.
- To the extent practical, construction should be accomplished without the use of construction pads.
- To the extent practical, bridge demolition should occur without getting into the water.

G. CE Approval

TIP Project No.	<u>B-4085</u>
State Project No.	<u>8.2171201</u>
W.B.S. No.	<u>33444.1.1</u>
Federal Project No.	<u>BRSTP-1005</u>

Project Description: (Include project scope and location. Attach location map.)

The purpose of this project is to replace Craven County Bridge No. 212 on SR 1005 over Bachelor Creek. The replacement structure will be a bridge 115 feet long and 30 feet wide. The cross section will include two 12-foot lanes and 3-foot offsets. The west approach will be approximately 330 feet and east approach will be approximately 300 feet long. The approach cross section will include two 12-foot lanes and 8-foot shoulders. Traffic will be detoured offsite during construction (see Figure 1). The roadway will be designed as a Major Collector with a 60 mile per hour design speed.

Categorical Exclusion Action Classification: (Check one)

           TYPE II(A)  
  X   TYPE II(B)

Approved:

3-31-04 *Deresa Hart*  
Date Assistant Manager  
Project Development & Environmental Analysis Branch

3-31-04 *William T. Goodin*  
Date Project Planning Unit Head  
Project Development & Environmental Analysis Branch

3-31-04 *John F. Williams*  
Date Project Planning Engineer  
Project Development & Environmental Analysis Branch

For Type II(B) projects only:

3-31-04 *John F. Sullivan, III*  
Date John F. Sullivan, III, Division Administrator  
Federal Highway Administration

## **PROJECT COMMITMENTS:**

**Craven County  
Bridge No. 212 on SR 1005  
Over Bachelor  
Federal Aid Project No. BRZ-1179(1)  
State Project No. 8.2171201  
W.B.S. No. 33444.1.1  
T.I.P. No. B-4085**

### **Hydraulics – Anadramous Fish**

NCDOT will implement Stream Crossing Guidelines for Anadramous Fish

### **All Design Groups/ Division Resident Engineer – Anadramous Fish**

The North Carolina Division of Marine Fisheries has indicated that a moratorium on in-water construction will be in place from February 15 to June 30 of any given year.

To the extent practical, construction should be accomplished without the use of construction pads.

To the extent practical, bridge demolition should occur without getting into the water.

### **Office of Natural Environment – Bridge Demolition**

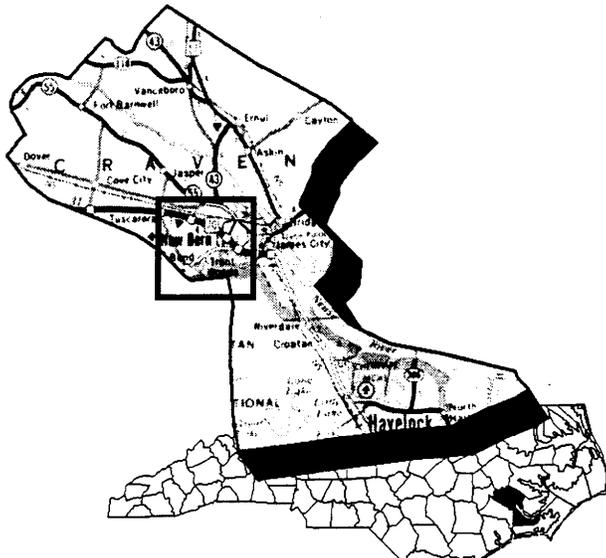
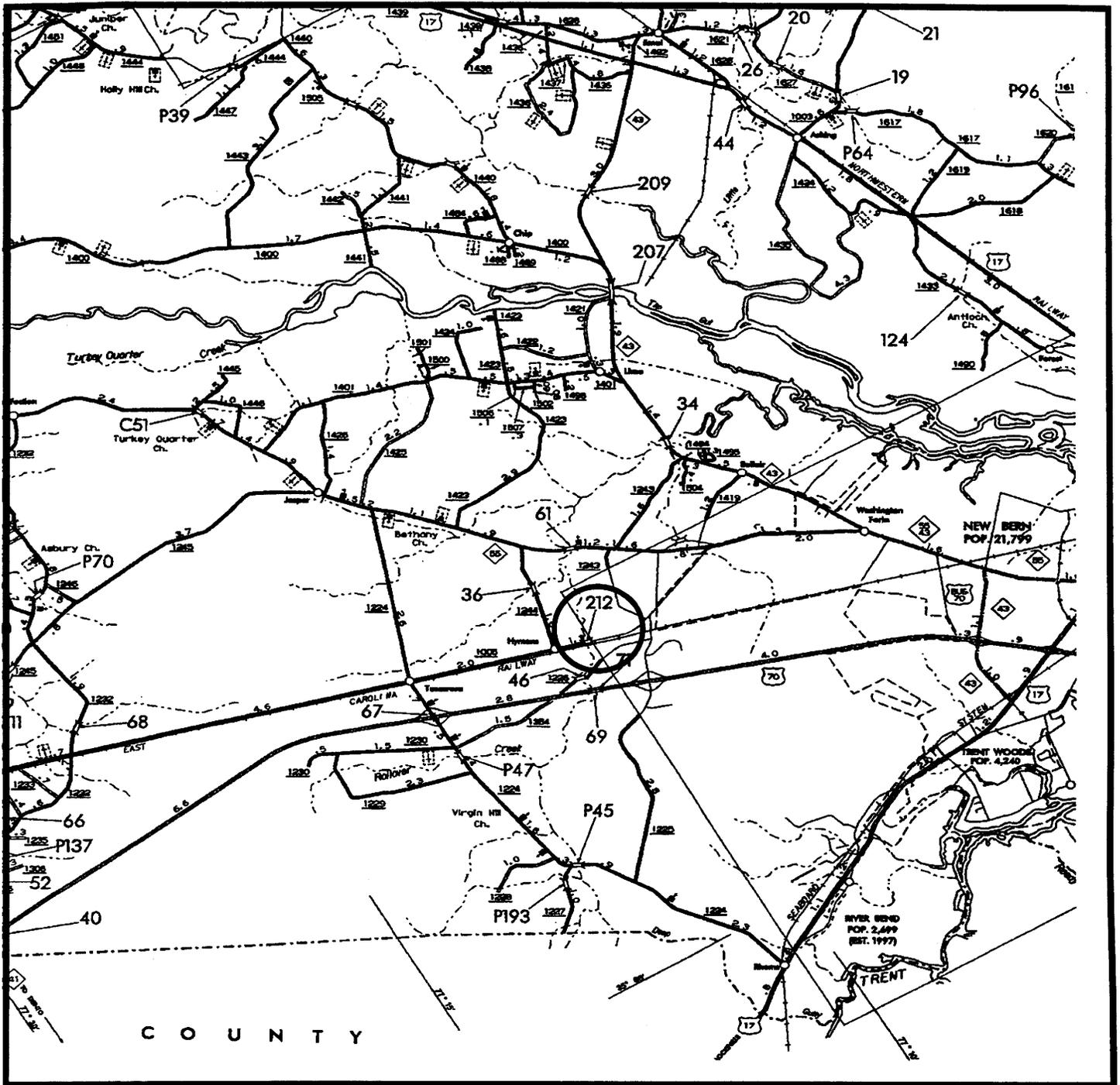
The entire bridge is constructed of timber and steel. Therefore, it is unlikely that there will be any temporary fill resulting from bridge demolition.

### **Contract Specifications - Length of Construction**

In order to address specific requests from the Craven County Emergency Services Coordinator, NCDOT will set the **minimum** reasonable contract time to reduce the period of road closure.

### **Resident Engineer – School Bus Turnaround**

Prior to the Construction Letting, the Division will coordinate with school bus officials to establish a turnaround for busses during the period of construction.



	<p>NORTH CAROLINA DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS PROJECT DEVELOPMENT &amp; ENVIRONMENTAL ANALYSIS BRANCH</p>
<p><b>CRAVEN COUNTY</b>  <b>REPLACE BRIDGE NO. 212 ON SR 1005</b>  <b>OVER BACHELOR CREEK</b>  <b>B-4085</b></p>	

Figure 1



**North Carolina Department of Cultural Resources  
State Historic Preservation Office**

David L. S. Brook, Administrator

Michael F. Easley, Governor  
Lisbeth C. Evans, Secretary  
Jeffrey J. Crow, Deputy Secretary

Division of Historical Resources  
David J. Olson, Director

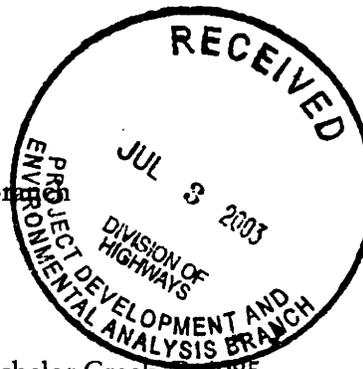
June 27, 2003

MEMORANDUM

TO: Greg Thorpe, Manager  
Project Development and Environmental Analysis Branch  
NCDOT Division of Highways

FROM: David Brook *DLB for David Brook*

SUBJECT: Replacement of Bridge No. 212 on SR 1005 over Bachelor Creek, D-4085,  
Craven County, ER03-0928



Thank you for your memorandum of April 7, 2003, concerning the above project.

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

We have conducted a search of our maps and files and located the following structure of historical or architectural importance within the general area of this project:

Bridge No. 212 on SR 1005 over Bachelor Creek

We recommend that a Department of Transportation architectural historian identify and evaluate any structures over fifty years of age within the project area and report the findings to us.

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, contact Renee Gledhill-Earley, environmental review coordinator, at 919/733-4763. In all future communication concerning this project, please cite the above referenced tracking number.

cc: Mary Pope Furr, NCDOT  
Matt Wilkerson, NCDOT

[www.hpo.dcr.state.nc.us](http://www.hpo.dcr.state.nc.us)

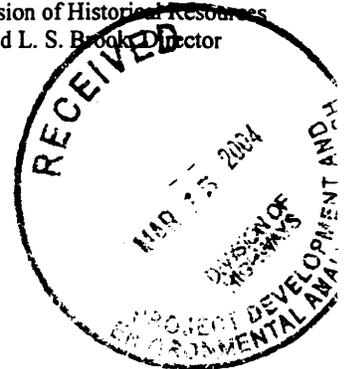
	Location	Mailing Address	Telephone/Fax
ADMINISTRATION	507 N. Blount St., Raleigh NC	4617 Mail Service Center, Raleigh NC 27699-4617	(919) 733-4763 • 733-8653
RESTORATION	515 N. Blount St., Raleigh NC	4613 Mail Service Center, Raleigh NC 27699-4613	(919) 733-6547 • 715-4801
SURVEY & PLANNING	515 N. Blount St., Raleigh NC	4618 Mail Service Center, Raleigh NC 27699-4618	(919) 733-6545 • 715-4801



North Carolina Department of Cultural Resources  
State Historic Preservation Office

Michael F. Easley, Governor  
Lisbeth C. Evans, Secretary  
Jeffrey J. Crow, Deputy Secretary  
Office of Archives and History

Division of Historical Resources  
David L. S. Brooks, Director



March 5, 2004

MEMORANDUM

TO: Greg Thorpe, Ph.D., Director  
Project Development and Environmental Analysis Branch  
NCDOT Division of Highways

FROM: David Brook *Greg for David Brook*

SUBJECT: Replace Bridge No. 212 on SR 1005 over Bachelor Creek, B-4085,  
Craven County, ER03-0928

Thank you for your letter of December 30, 2003, concerning the above project.

We have reviewed the additional research you provided in your letter concerning the eligibility of Bridge No. 212 over Bachelor Creek.

For purposes of compliance with Section 106 of the National Historic Preservation Act, we concur that the following structure is not eligible for the National Register of Historic Places:

Bridge No. 212 on SR 1005 over Bachelor Creek is not eligible for the National Register because it is not one among the state's technologically significant examples of the continuous stringer bridge types.

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, contact Renee Gledhill-Earley, environmental review coordinator, at 919/733-4763. In all future communication concerning this project, please cite the above referenced tracking number.

cc: Mary Pope Furr, NCDOT  
Matt Wilkerson, NCDOT

[www.hpo.dcr.state.nc.us](http://www.hpo.dcr.state.nc.us)

	Location	Mailing Address	Telephone/Fax
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SURVEY & PLANNING	515 N. Blount St, Raleigh, NC	4617 Mail Service Center, Raleigh, NC 27699-4617	(919) 733-4763 • 715-4801

JW



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

Michael F. Easley, Governor  
William G. Ross, Jr., Secretary

Preston P. Pate, Jr., Director

**MEMORANDUM**

**TO:** William T. Goodwin, Jr., PE  
NCDOT  
Bridge Replacement Planning Unit

**FROM:** Mike Street

**DATE:** July 8, 2003

**SUBJECT:** Bridge Replacement for: # B-4168, # B-4088, # B-4085

Attached is the Divisions' reply for the above referenced project. If you have any questions, please do not hesitate to contact me.

MS/sw

**NATURAL SYSTEMS REPORT**

**Replacement of Bridge No. 212  
SR 1005 (Old US Highway 70 West) over Bachelor Creek**

**Craven County, North Carolina  
(B-4085)  
(State Project No. 8.2171201)  
(Federal Aid No. BRSTP-1005[7])**

**Prepared for:**



**The North Carolina Department of Transportation  
Raleigh, North Carolina**

**March 2003**

**NATURAL SYSTEMS REPORT**

**Replacement of Bridge No. 212  
SR 1005 (Old US Highway 70 West) over Bachelor Creek**

**Craven County, North Carolina  
(B-4085)  
(State Project No. 8.2171201)  
(Federal Aid No. BRSTP-1005[7])**

**Prepared for:**



**The North Carolina Department of Transportation  
Raleigh, North Carolina**

**Prepared by:**



**EcoScience**

**EcoScience Corporation  
1101 Haynes Street, Suite 101  
Raleigh, North Carolina 27604  
Tel (919) 828-3433 Fax (919) 828-3518**

**January 2003**

## EXECUTIVE SUMMARY

Proposed replacement of Bridge No. 212 at SR 1005 (Old US Highway 70 West) over Bachelor Creek, Craven County, North Carolina, TIP No. B-4085.

### INTRODUCTION

The project proposes replacement of Bridge No. 212 on SR 1005 (Old US Highway 70 West) over Bachelor Creek and associated floodplain. The project area is approximately 30.2 acres (12.2 hectares) in size, and includes the channel, banks, and associated floodplain swamps of Bachelor Creek. Land use consists of undeveloped forested land, disturbed land, and sparse rural residential and commercial development. The project area is within the Lower Coastal Plain physiographic province, approximately 5.0 to 25.0 feet (1.5 to 7.6 meters) above mean sea level. Approximately 14.4 acres (5.8 hectares) (38 percent) of the project area is underlain by hydric soils, consisting of Masontown mucky fine sandy loam and Muckalee sandy loam, frequently flooded, and Tomotley fine sandy loam.

### PHYSICAL CHARACTERISTICS

#### Water Resources

The project area is located within sub-basin 03-04-08 of the Neuse River Basin (DWQ 2002a). This area is part of USGS Hydrologic Unit 03020202 of the South Atlantic/Gulf Region. The structure targeted for replacement spans Bachelor Creek and the Bachelor Creek floodplain. This section of Bachelor Creek has been assigned Stream Index Number 27-98 by the N.C. Division of Water Quality (DWQ 2002b).

The Best Usage Classification for Bachelor Creek is **C Sw NSW** (DWQ 2002b). No Watershed Critical Areas or water resources classified as High Quality Waters, Water Supplies (WS-I or WS-II), or Outstanding Resource Waters are located within 1.0 mile (1.6 kilometers) of the project area. No §303(d) listed streams exist in or within 5 miles (8 kilometers) of the project area.

#### Biotic Resources

Five distinct plant communities were identified within the project area: Mesic Mixed Hardwood Forest (Coastal Plain Subtype), shrub/scrub assemblage, Coastal Plain Bottomland Hardwoods (Blackwater Subtype), disturbed/maintained land, and Cypress-Gum Swamp (Blackwater Subtype). A summary of plant community areas is presented in the following table.

Plant community coverage within the project area. Coverage is given in acres, with hectares in parentheses.

<b>Plant Community</b>	<b>Area</b>
Mesic Mixed Hardwood Forest (Coastal Plain Subtype)	8.2 (3.3)
Shrub/scrub assemblage	5.8 (2.3)
Coastal Plain Bottomland Hardwoods (Blackwater Subtype)	5.5 (2.2)
Disturbed/maintained land	5.7 (2.3)
Cypress-Gum Swamp (Blackwater Subtype)	2.5 (1.0)

## **JURISDICTIONAL TOPICS**

### **Surface Waters and Wetlands**

Bachelor Creek is considered jurisdictional surface waters under Section 404 of the Clean Water Act. The replacement bridge will span Bachelor Creek. No impacts to surface waters are anticipated. Based on field investigations, the project area also contains jurisdictional wetlands. Areas of these systems within the project area are summarized in the following table. Coverage is given in acres, with hectares in parentheses.

<b>Cowardin Classification</b>	<b>Area</b>	<b>DWQ Rating</b>
PFO1A (Coastal Plain Bottomland Hardwoods, Blackwater Subtype)	1.8 (0.7)	60
PFO1C (Coastal Plain Bottomland Hardwoods, Blackwater Subtype)	3.0 (1.2)	60
PFO6C (Coastal Plain Bottomland Hardwoods, Blackwater Subtype)	1.3 (0.5)	60
PFO6F (Cypress-Gum Swamp, Blackwater Subtype)	0.9 (0.4)	71
PSS1/3C (Scrub-shrub assemblage)	0.3 (0.1)	27
Total	8.3 (3.3)	

In addition to vegetated wetlands, there are 860 feet (262 meters) and 1.0 acre (0.4 hectare) of Neuse River riparian buffer within the project area. Of this acreage, 0.6 acre (0.2 hectare) is in Zone 1 and 0.4 acre (0.2 hectare) is in Zone 2.

During project construction, Bridge No. 212 will be dismantled without dropping portions of the structure into Bachelor Creek. Therefore, no temporary fill from bridge demolition is expected to be placed in waters of the United States. As this reach of Bachelor Creek is in the Coastal Plain, and has potential as a travel corridor and breeding area for migratory fish, this project can be classified as Case 2, where in-water work will be avoided during moratorium periods (February 15 through June 15) associated with fish migration, spawning, and nursery areas.

To minimize fishing and non-fishing activities that adversely affect marine fisheries, areas of Essential Fish Habitat (EFH) afford limited protection under the Magnuson-Stevens Act

of 1996 (16 U.S.C. 1801 *et seq.*). EFH has been broadly defined by congress as “those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity.” Fishing and non-fishing related activities that can adversely affect fisheries include fishing gear, dredging, filling, agricultural and urban runoff, and point-source pollution discharge. No marine, estuarine, or tidally influenced waters are located within the project region. Based on the latest directive from the National Marine Fisheries Service (NMFS 2000), the nearest designated EFH is associated with tidal waters of the Neuse River, approximately 12.7 river miles (20.4 river kilometers) downstream of the project area.

### **Permits**

The project area may contain Public Trust Waters AECs. If replacement of the bridge avoids impacts to AECs, the DCM will review the permit application for CAMA consistency. If an AEC is proposed to be impacted, a CAMA Major Permit or General Permit for bridge replacement (15A NCAC 07H.2300) may be applicable.

This project may be processed as a Categorical Exclusion (CE) under Federal Highway Administration (FHWA) guidelines. The USACE has made available Nationwide Permit (NWP) No. 23 (67 FR 2020, 2082; January 15, 2002) for CEs due to minimal impacts to waters of the U.S. expected with bridge construction. DWQ has made available a General 401 Water Quality Certification for NWP No. 23 (GC 3361). However, authorization for jurisdictional area impacts through use of this permit will require written notice to DWQ. If temporary construction is required that is not described in the CE, a NWP No. 33, for temporary construction, access, and dewatering (67 FR 2020, 2084; January 15, 2002) and associated DWQ General Water Quality Certification (GC 3366) may be required. In the event that NWP No. 23 will not suffice, impacts attributed to bridge replacement and associated approach improvements may qualify under General Bridge Permit (GP) 031 issued by the Wilmington USACE District. DWQ has made available a General 401 Water Quality Certification for GP 031 (GP 3375). Notification to the USACE Wilmington district office is required if this general permit is utilized. The USACE may exert discretionary authority and require an Individual Permit if avoidance and minimization have not been adequately addressed, or if mitigation is inadequate (assuming mitigation may be required).

The Neuse River Basin Rule applies to 50-foot (15-meter) wide riparian buffers directly adjacent to surface waters of the Neuse River Basin. Neuse Buffer Certification will be needed in addition to a USACE permit and DWQ Water Quality Certification.

### **Federally Protected Species**

Species with the federal classification of Endangered, Threatened, or officially Proposed for such listing are protected under the Endangered Species Act (ESA) of 1973, as amended (16 U.S.C. 1531 *et seq.*). One federally protected species is listed for Craven County (May 31, 2002 FWS list), and is presented in the following table.

<b>Common Name</b>	<b>Scientific Name</b>	<b>Status</b>
American alligator	<i>Alligator mississippiensis</i>	T(S/A)*
Bald eagle	<i>Haliaeetus leucocephalus</i>	T
Leatherback sea turtle	<i>Dermochelys coriacea</i>	E
West Indian manatee	<i>Trichechus manatus</i>	E
Red-cockaded woodpecker	<i>Picooides borealis</i>	E
Sensitive jointvetch**	<i>Aeschynomene virginica</i>	T

\* Threatened due to Similarity of Appearance: resembles in appearance a threatened species that enforcement personnel would have substantial difficulty in differentiating between the listed and unlisted species. The American alligator has this designation due to similarity of appearance to other rare crocodylians.

\*\* Historic record – last seen within Craven County more than 20 years ago.

### ***Alligator mississippiensis* (American alligator)**

T S/A species are not subject to Section 7 consultation and a biological conclusion is not required. However, this project is not expected to affect the American alligator.

### ***Haliaeetus leucocephalus* (Bald eagle)**

**BIOLOGICAL CONCLUSION: MAY AFFECT, NOT LIKELY TO ADVERSELY AFFECT**

Potential habitat for bald exists within the project area. The open water swamp of this section of Bachelor Creek contains numerous emergent bald cypress, gum and green ash suitable for perching. Areas of open water for foraging are also present. No bald eagles were observed during the site visit. The nearest NHP record of a bald eagle is approximately 9.0 miles (14.5 kilometers) southeast, at Brice Creek near the Trent River. No long-term impact to bald eagle is anticipated as a result of this project.

### ***Dermochelys coriacea* (Leatherback sea turtle)**

**BIOLOGICAL CONCLUSION: NO EFFECT**

Bachelor Creek, in the project area, is a non-tidal, freshwater stream. Therefore, no habitat for leatherback sea turtle exists in or near the project area. No leatherback sea turtles were observed during the site visit, and NHP documents no leatherback sea turtle occurrences within 5.0 miles (8.0 kilometers) of the project area.

### ***Trichechus manatus* (West Indian manatee)**

**BIOLOGICAL CONCLUSION: NO EFFECT**

Potential habitat for West Indian manatee does not exist within or near the project area. The dimensions of the Bachelor Creek channel preclude access for an animal as large as a



Cypress-Gum Swamp, a High Quality Resource, occurs within the project area. The National Marine Fisheries will be consulted as to the timing of construction activities to minimize impacts to fisheries resources.

Construction of a replacement bridge within the footprint of the existing Bridge No. 212 is recommended to minimize impacts to wetlands, plant communities, and fisheries resources.

## TABLE OF CONTENTS

	<u>Page</u>
1.0 INTRODUCTION.....	1
1.1 Project Description .....	1
1.2 Purpose .....	1
1.4 Qualifications.....	4
1.5 Definitions of Area Terminology.....	5
2.0 PHYSICAL RESOURCES .....	5
2.1 Physiography and Soils .....	5
2.2 Water Resources.....	6
3.0 BIOTIC RESOURCES.....	9
3.1 Terrestrial Communities.....	9
3.1.1 Vegetation Communities .....	9
3.1.2 Faunal Communities .....	11
3.2 Aquatic Communities.....	12
3.3 Summary of Anticipated Impacts .....	13
4.0 JURISDICTIONAL TOPICS.....	14
4.1 Waters of the United States .....	14
4.2 CAMA Areas of Environmental Concern .....	16
4.3 Permit Issues.....	16
4.3.1 Permits.....	16
4.3.2 Mitigation.....	16
4.4 Protected Species .....	18
5.0 REFERENCES.....	24

## LIST OF TABLES

Table 1: Plant community coverage within the project area .....	13
Table 2: Wetland areas within the project area.....	15
Table 3. Federally Protected Species listed for Craven County. ....	18
Table 4. Federal Species of Concern listed for Craven County .....	23

## LIST OF FIGURES

Figure 1: Location .....	2
Figure 2: Plant Communities .....	3

**Replacement of Bridge No. 212  
SR 1005 (Old US Highway 70 West) over Bachelor Creek  
Craven County, North Carolina  
(B-4085)**

## **1.0 INTRODUCTION**

### **1.1 Project Description**

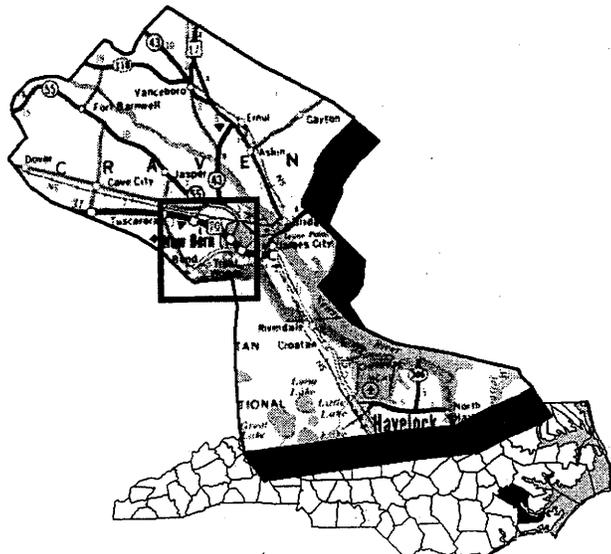
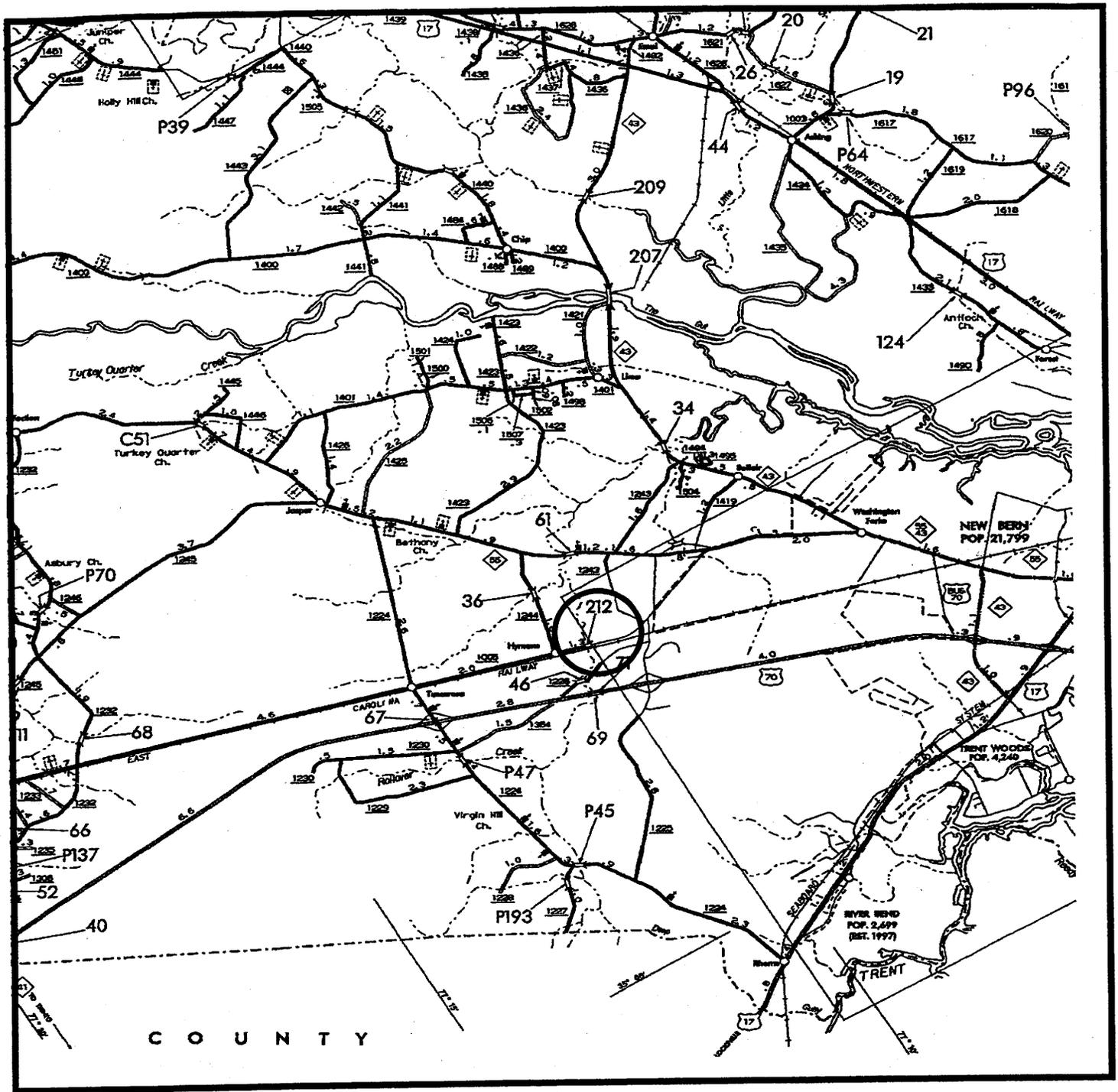
The North Carolina Department of Transportation (NCDOT) proposes replacement of Bridge No. 212 on SR 1005 (Old US Highway 70 West) over Bachelor Creek and the associated floodplain (Figure 1). Bridge No. 212 spans Bachelor Creek and adjacent banks for a distance of approximately 82.0 feet (25.0 meters). The existing roadway is approximately 28.0 feet (8.5 meters) wide with a total, maintained right-of-way width of approximately 52.0 feet (15.8 meters) (Figure 2).

The project area is located at the crossing of SR 1005 (Old US Highway 70 West) over Bachelor Creek approximately 7 miles (11 kilometers) northwest of downtown New Bern, NC (Figure 1). Included within the project area are Bachelor Creek, the associated floodplain, and adjacent terraces. Also included is a railroad track that parallels SR 1005 approximately 55 feet (16.8 meters) to the south.

Bridge No. 212 was built in 1937 of timber piles and caps, with a superstructure of continuous I-beams. The NCDOT project engineer will complete bridge materials and fill data at a later time. During project construction, Bridge No. 212 will be dismantled without dropping portions of the structure into Bachelor Creek. Therefore, no temporary fill from bridge demolition is expected to be placed in waters of the United States. NCDOT will coordinate with various resource agencies during project planning to ensure that all concerns regarding bridge demolition are resolved.

### **1.2 Purpose**

The purpose of this study is to provide an evaluation of biological resources in the project area. Specific tasks performed for this study include 1) an assessment of biological features within the project area including descriptions of vegetation, wildlife, protected species, jurisdictional wetlands, and water quality, 2) a delineation of Section 404 jurisdictional areas and subsequent survey of jurisdictional boundaries (utilizing Trimble XRS Differential Global Positioning System technology), 3) an evaluation of plant communities and their areas within the project area, and 4) a preliminary determination of permit needs.



NORTH CAROLINA DEPARTMENT OF  
TRANSPORTATION  
DIVISION OF HIGHWAYS  
PROJECT DEVELOPMENT &  
ENVIRONMENTAL ANALYSIS BRANCH

**CRAVEN COUNTY**  
**REPLACE BRIDGE NO. 212 ON SR 1005**  
**OVER BACHELOR CREEK**  
**B-4085**

Figure 1



Scale: 1" = 250'

Drawn By: ES

Date: March 2003

Project: 02-113.08

Client: NCDOT

Prepared for:  
The North Carolina  
Department of  
Transportation  
Raleigh, North Carolina

Federal Aid No.  
BRSTP-1005[7]

8.2171201

State Project No.

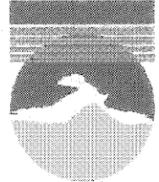
Bachelor Creek  
SR 1005 over

Bridge No. 212  
Replacement of

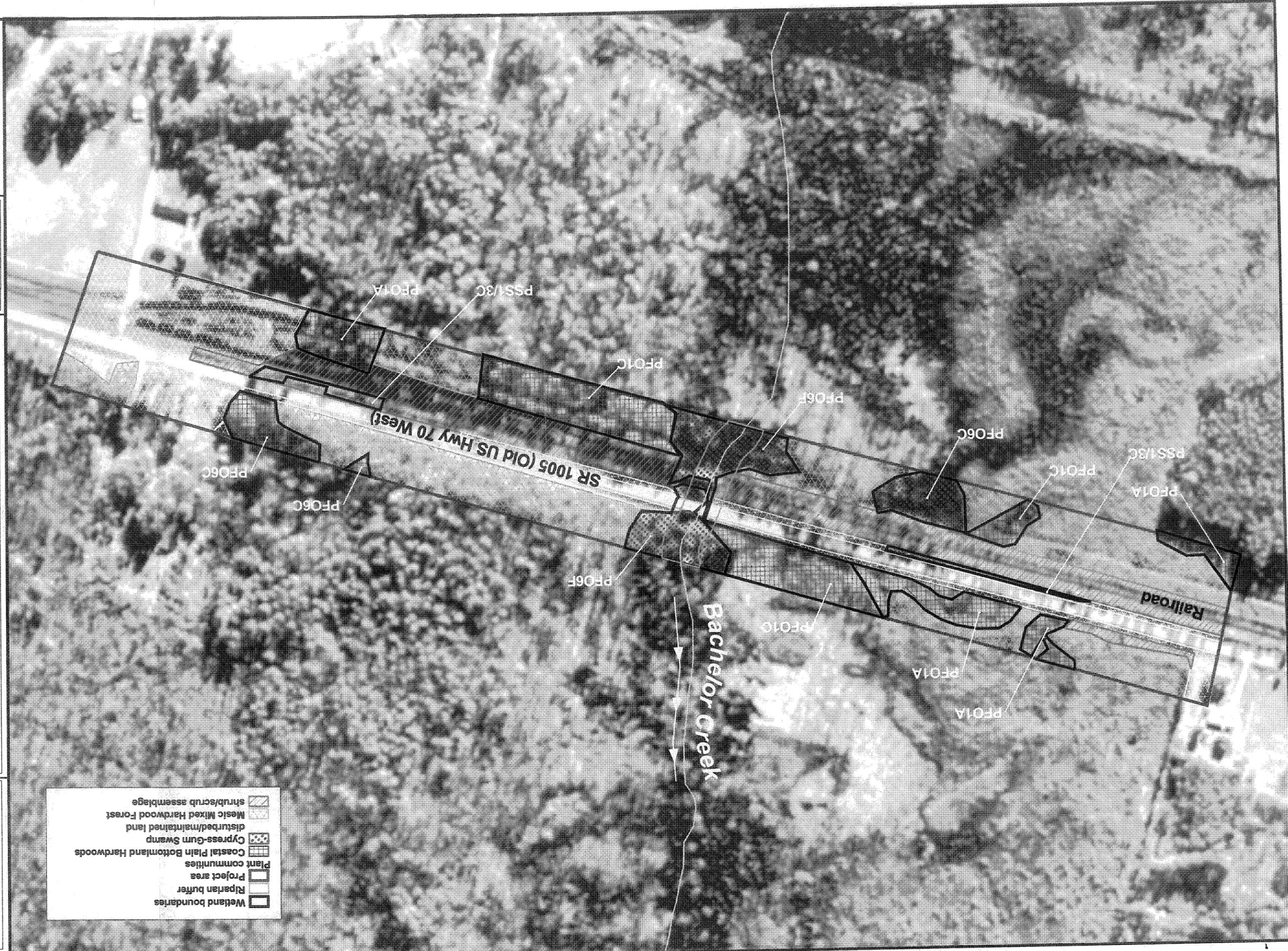
## Figure 2 B-4085 Craven County

1101 Haynes Street, Suite 101  
Raleigh, North Carolina 27604

**EcoScience**



Ph: 919 828 3433  
Fax: 919 828 3518



- Wetland boundaries
- Riparian buffer
- Project area
- Plant communities
- Coastal Plain Bottomland Hardwoods
- Cypress-Gum Swamp
- disturbed/maintained land
- Mesic Mixed Hardwood Forest
- shrub/scrub assemblage

### 1.3 Methods

Materials and literature supporting this investigation have been derived from a number of sources including U.S. Geological Survey (USGS) topographic mapping (Jasper, NC 7.5 minute quadrangle), U.S. Fish and Wildlife Service (FWS) National Wetlands Inventory (NWI) mapping (Jasper, NC 7.5 minute quadrangle), NC Division of Coastal Management (DCM) wetlands mapping, Natural Resources Conservation Service (NRCS; formerly the Soils Conservation Service) soils mapping (SCS 1989), and recent aerial photography (scale 1:200) furnished by NCDOT.

The most current FWS listing of federally protected species with ranges extending into Craven County (February 11, 2003 FWS list) was addressed in this report. In addition, NHP records documenting the presence of federally or state listed species were consulted before commencing field investigations. Significant Aquatic Endangered Species Habitats proposed by the North Carolina Wildlife Resources Commission (WRC; June 13, 1995 listing) were consulted to determine the presence of Proposed Critical Habitats for aquatic species.

Plant community descriptions are based on a classification system utilized by N.C. Natural Heritage Program (NHP) (Schafale and Weakley 1990). When appropriate, community classifications were modified to better reflect field observations. Vascular plant names follow nomenclature found in Radford *et al.* (1968) with adjustments for updated nomenclature (Kartesz 1998). Jurisdictional areas were evaluated using the three-parameter approach following U.S. Army Corps of Engineers (USACE) delineation guidelines (DOA 1987). Jurisdictional areas were characterized according to a classification scheme established by Cowardin *et al.* (1979). Aquatic and terrestrial wildlife habitat requirements and distributions were determined by supportive literature (Martof *et al.* 1980, Potter *et al.* 1980, Webster *et al.* 1985, Menhinick 1991, Hamel 1992, Palmer and Braswell 1995, and Rohde *et al.* 1994). Water quality information for area streams and tributaries was derived from available sources (DWQ 2002a, 2002b). Quantitative sampling was not undertaken to support existing data.

The project area was walked and visually surveyed for significant features. For purposes of this evaluation, the project area has been delineated by the NCDOT (Figure 2). Special concerns evaluated in the field include 1) potential protected species habitat and 2) wetlands and water quality protection in Bachelor Creek.

### 1.4 Qualifications

The field work for this investigation was conducted on December 18, 2002 by EcoScience Corporation biologists Elizabeth Scherrer and Sandy Smith. Ms. Scherrer is a Project Scientist with 5 years of experience in the environmental field. She holds an M.S. in forestry from North Carolina State University, with minors in botany and ecology. Her research involved the restoration of farmed wetlands on the North Carolina Coastal Plain, with emphasis on the influence of microtopography on hydrology and plant communities. At Tall Timbers Research

Station in Tallahassee, FL, she designed and implemented a study of red-cockaded woodpecker habitats in the Apalachicola National Forest. Professional expertise includes wetland and jurisdictional area delineations, plant and wildlife identification and community mapping, plant community parameter analysis, protected species surveys, and environmental document preparation.

Mr. Smith is a Senior Scientist with 14 years of experience in the environmental field. Mr. Smith has a bachelor's degree in biology from Davidson College and a master's degree in marine/coastal biology from the University of North Carolina at Wilmington. He has conducted field research and species inventories involving seabirds, shorebirds, colonial waterbirds, songbirds, small mammals, reptiles, amphibians, freshwater and estuarine fish, and benthic invertebrates. Professional expertise includes jurisdictional area delineations, stream and riparian buffer determinations, plant and wildlife identification and community mapping, protected species surveys, environmental permitting, and environmental document preparation.

## 1.5 Definitions of Area Terminology

The project area boundary (Figure 2) has been delineated by the NCDOT, and encompasses approximately 30.2 acres (12.2 hectares). The project area is generally linear, and follows SR 1005 along a northwest-southeast orientation for a distance of 3200 feet (975 meters). The width of the project area is approximately 400 feet (122 meters). The project vicinity is the area within 0.5 mile (0.8 kilometer) of the project area, and the project region is the area included in a 7.5 minute USGS quadrangle map with the project area as the center.

## 2.0 PHYSICAL RESOURCES

### 2.1 Physiography and Soils

The project area is located within a level, wide floodplain valley with a gently sloping western valley wall and a slightly steeper eastern valley wall. Elevations in the project area range from a high of approximately 25 feet (7.6 meters) National Geodetic Vertical Datum (NGVD), on the ends of the project area and along the roadway, to a low of approximately 5 feet (1.5 meters) NGVD within the stream channel. Land use within and near the project area consists of woodlands, swamps, agricultural fields, and rural residential and commercial lots.

The project area is underlain by the Lower Coastal Plain Wicomico and Talbot System soil region in the Coastal Plain physiographic province of North Carolina. The upland surfaces in the Lower Coastal Plain have less local relief, are wider, and have larger areas of poorly and very poorly drained soils than the Middle and Upper Coastal Plain regions. At the Lower Coastal Plain boundary (the Surry scarp), clay mineralogy changes from kaolinitic to a mixed mineralogy, with more than 10 percent expanding clay minerals. Marine sediments are

dominant, resulting in fine- and coarse-loamy, siliceous soils on the Wicomico and Talbot plains (Daniels *et al.* 1999).

Based on soil mapping for Craven County (SCS 1989), the project area is underlain by three soil series: Masontown mucky fine sandy loam and Muckalee sandy loam, frequently flooded (*Cumulic Humaquepts* and *Typic Fluvaquents*), Tomotley fine sandy loam (*Typic Ochraquults*), and Craven silt loam (*Aquic Hapludults*). Within the project area, the Masontown and Muckalee series occurs along the river channel, Tomotley fine sandy loam is found on slopes and river terraces, and Craven silt loam is found on uplands. The Masontown and Muckalee and Tomotley series are considered hydric soils in Craven County by the NRCS (NRCS 1997). In total, approximately 38 percent (14.4 acres [5.8 hectares]) of the project area is underlain by hydric soils.

The Masontown and Muckalee series consists of poorly and very poorly drained, moderately to rapidly permeable soils on floodplains. The soils formed in moderately coarse textured alluvium, and slopes are nearly level (0 to 2 percent). The seasonal high water table is approximately 1.5 feet (0.5 meter) below the soil surface or higher. These soils are subject to frequent flooding of long duration. Acidity ranges from alkaline to strongly acid.

The Tomotley series consists of poorly drained, moderately permeable soils on broad flats and in depressions in stream terraces along the Neuse River and its larger tributaries. This series formed in moderately fine textured sediments. Slopes are nearly level, from 0 to 2 percent, and the seasonal high water table is at or near the soil surface. Water ponds in the depressions for brief periods. The soils are strongly to extremely acid.

The Craven series consists of moderately well drained, nearly level soils on low ridges and side slopes on uplands near drainageways. The soils are slowly permeable, and formed in fine textured sediments. Soil reactivity is strongly to extremely acid. The seasonal high water table is 2 to 3 feet (0.6 to 0.9 meter) beneath the soil surface.

## 2.2 Water Resources

The project area is located within sub-basin 03-04-08 of the Neuse River Basin (DWQ 2002a). This area is part of USGS Hydrologic Unit 03020202 of the South Atlantic/Gulf Region. The structure targeted for replacement spans Bachelor Creek and Bachelor Creek floodplain. This section of Bachelor Creek has been assigned Stream Index Number 27-98 by the N.C. Division of Water Quality (DWQ 2002b).

At the project area, Bachelor Creek is a poorly-defined, fourth-order, perennial stream with low flow over a silt substrate. During field investigations, water level was high, from approximately 8 inches (20 centimeters) to 5 feet (1.5 meters) deep, and extensive areas of the floodplain were inundated. The river had apparently overtopped its banks, and no clearly defined channel was visible. At Bridge No. 212, Bachelor Creek is approximately 80 feet (24 meters) wide. The

floodplain of Bachelor Creek slopes gently upwards from the water surface. Water clarity was poor due to tannin staining, with visibility to 8 inches (20 centimeters), and flow velocity was low.

Classifications are assigned to waters of the State of North Carolina based on the existing or contemplated best usage of various streams or segments of streams in the basin. A Best Usage Classification of **C Sw NSW** has been assigned to this reach of Bachelor Creek. The designation **C** denotes waters are suitable for aquatic life propagation and protection, agriculture, and secondary recreation. Secondary recreation includes wading, boating, and other uses not involving human body contact with waters on an organized or frequent basis. The supplemental classification **Sw** denotes waters which have low velocities and other natural characteristics which are different from adjacent streams. The designation recognizes waters that will naturally be more acidic (have lower pH values) and have lower levels of dissolved oxygen. **NSW** denotes Nutrient Sensitive Waters which require limitations on nutrient inputs. All waters in the Neuse River Basin have this supplementary classification. In general, management strategies for point and non-point source pollution control require no increase in nutrients over background levels. No designated High Quality Waters (**HWQ**), Outstanding Resource Waters (**ORW**), Water Supply I (**WS-I**), or Water Supply II (**WS-II**) waters occur within 1.0 mile (1.6 kilometers) of the project area (DWQ 2002a). No watershed Critical Area (**CA**) occurs within 1.0 mile (0.6 kilometer) of the project area.

The Division of Water Quality (DWQ) (previously known as the Division of Environmental Management, Water Quality Section [DEM]) has initiated a whole-basin approach to water quality management for the 17 river basins within the state. Water quality for the proposed project area is summarized in the Neuse Basinwide Water Quality plan (DWQ 2002a). Based on DWQ data, Bachelor Creek is currently not given a Use Support Rating of its Best Usage Classification. Although DWQ maintains a Fish Tissue Analysis station approximately 4.0 miles (6.4 kilometers) downstream on Bachelor Creek, and an Ambient Monitoring Station near the mouth of Bachelor Creek near Washington Forks, the river has not been assigned a bioclassification based on this data. Biocriteria are currently being developed to assess swampy streams such as Bachelor Creek. However, all waters in the subbasin are considered impaired on an evaluated basis because of fish consumption advisories (DWQ 2002a).

Sub-basin 03-04-08 of the Neuse River Basin supports three National Pollutant Discharge Elimination System permitted point source dischargers. Total discharge is 32.4 million gallons per day (122.6 million liters per day). One major discharger (Weyerhaeuser New Bern Plant) accounts for a total of 32.0 million gallons per day (121.1 million liters per day). This discharger is located on the Neuse River approximately 4.8 stream miles (7.7 kilometers) upstream of the mouth of Bachelor Creek. Three minor dischargers account for 0.4 million gallons per day (1.5 million liters per day). The minor dischargers in the sub-basin are located on the Neuse River upstream of the mouth of Bachelor Creek, except for one discharger approximately 0.3 stream miles (0.5 kilometer) upstream of the project area on Bachelor Creek.

Major non-point sources of pollution for Bachelor Creek and the lower Neuse River Basin include nutrient inputs from agricultural areas, confined animal operations, and urbanized areas. Aquatic habitat degradation is also exacerbated by removal of native riparian vegetation. Sedimentation and nutrient inputs are major problems associated with non-point source discharges and often result in algal blooms and elevated levels of fecal coliform bacteria. In addition, oxygen-consuming wastes discharged into low- or zero-flow streams, such as Bachelor Creek, result in lowered levels of dissolved oxygen and poor habitat for aquatic species. No part of Bachelor Creek is listed on the state's §303(d) list.

Temporary construction impacts due to erosion and sedimentation will be minimized through implementation of a stringent erosion control schedule and the use of Best Management Practices (BMPs). The contractor will follow contract specifications pertaining to erosion control measures as outlined in 23 CFR 650 Subpart B and Article 107-13 entitled "Control of Erosion, Siltation, and Pollution" (NCDOT, Specifications for Roads and Structures). These measures include the use of dikes, berms, silt basins, and other containment measures to control runoff; elimination of construction staging areas in floodplains and adjacent to waterways; re-seeding of herbaceous cover on disturbed sites; management of chemicals (herbicides, pesticides, de-icing compounds) with potential negative impacts on water quality; and avoidance of direct discharges into streams by catch basins and roadside vegetation. Tall fescue is not suitable for erosion controls along stream banks.

The proposed bridge replacement will allow for continuation of pre-project stream flows in Bachelor Creek, thereby protecting the integrity of this waterway. Long-term impacts resulting from construction are expected to be negligible. In order to minimize impacts to water resources, NCDOT Best Management Practices (BMPs) for the Protection of Surface Waters will be strictly enforced during the entire life of the project. Due to the composition of Bachelor Creek streambed, sediment curtains should be utilized to minimize potential water quality degradation as a result of bridge replacement.

During project construction, Bridge No. 212 will be dismantled without dropping portions of the structure into Bachelor Creek. Therefore, no temporary fill from bridge demolition is expected to be placed in waters of the United States. NCDOT will coordinate with various resource agencies during project planning to ensure that all concerns regarding bridge demolition are resolved.

## 3.0 BIOTIC RESOURCES

### 3.1 Terrestrial Communities

#### 3.1.1 Vegetation Communities

Five distinct plant communities were identified within the project area: Mesic Mixed Hardwood Forest (Coastal Plain Subtype), shrub/scrub assemblage, Coastal Plain Bottomland Hardwoods (Blackwater Subtype), disturbed/maintained land, and Cypress-Gum Swamp (Blackwater Subtype). Plant community descriptions are based on a classification system utilized by N.C. Natural Heritage Program (NHP) (Schafale and Weakley 1990), where applicable. These communities are described below in order of their dominance within the project area.

**Mesic Mixed Hardwood Forest (Coastal Plain Subtype)** – Mesic Mixed Hardwood Forest is found at the ends of the project area, in the upper edges of the Bachelor Creek floodplain, and also in divides between swampy areas. According to Schafale and Weakley (1990), this community occurs on mesic upland areas protected from fire. Most of the large stands of woodlands in the western half of the project area have been logged within the previous 10 years. In these areas, the canopy layer is fragmented and the subcanopy and shrub layers are well-developed. In the mature woodlands of the eastern project area, the canopy layer is well-developed and the other layers are less dominant. This plant community is dominated by beech (*Fagus grandifolia*), and water oak (*Quercus nigra*) on the lower slopes, and grades into a larger proportion of loblolly pine (*Pinus taeda*) and hickory (*Carya* sp.) on ridges. Tulip poplar (*Liriodendron tulipifera*) and sweetgum (*Liquidambar styraciflua*) are also common. The subcanopy and shrub layers contain flowering dogwood (*Cornus florida*), American holly (*Ilex opaca*), red maple (*Acer rubrum*), sweetleaf (*Symplocos tinctoria*), and giant cane (*Arundinaria gigantea*). Vines include supplejack (*Berchemia scandens*), greenbrier (*Smilax rotundifolia*), and cross vine (*Bignonia capreolata*). Herbs are scarce under the closed canopy, but partridge berry (*Mitchella repens*) and cranefly orchid (*Tipularia discolor*) occur.

**Shrub/scrub assemblage** – This plant community occurs in a strip between SR 1005 and the railroad track approximately 55 feet (17 meters) to its south, and also on the southern edge of the railroad right-of-way. On the south edge of SR 1005, this community forms a boundary between disturbed/maintained land on the roadway shoulder and the more mature forested plant communities. Shrub-scrub assemblage may be described as an extension of the surrounding plant communities, which are in an early stage of succession. A large component of weedy species is also introduced into the shrub community. At the project area, no canopy layer occurs in the shrub/scrub assemblage, but scattered small individuals of American elm (*Ulmus americana*), loblolly pine, red maple, and sweetgum occur. Shrubs are fairly diverse in the absence of a canopy cover, and include groundsel (*Baccharis halimifolia*), wax myrtle (*Morella cerifera*), giant cane, black willow (*Salix nigra*), buttonbush (*Cephalanthus occidentalis*), and red chokeberry (*Photinia pyrifolia*). The vine component includes Japanese honeysuckle (*Lonicera japonica*), Carolina jessamine (*Gelsemium sempervirens*), greenbrier,

and cross vine. Herbs are also diverse, especially at the sunny edges bordering disturbed land, and include dog fennel (*Eupatorium capillifolium*), frost aster (*Aster pilosus*), Christmas fern (*Polystichum acrostichoides*), bushy bluestem (*Andropogon glomeratus*), verbena (*Verbena bonariensis*), goldenrod (*Solidago* sp.), and Indian-hemp (*Apocynum cannabinum*).

**Coastal Plain Bottomland Hardwoods (Blackwater Subtype)** – This plant community is temporarily flooded, and forms a border between Cypress-Gum Swamp and the adjacent uplands. Schafale and Weakley (1990) describe this community as flooded, at least occasionally, but seldom disturbed by flowing water. It occurs at the center of the project area, and in small pockets separated from the main stream channel and adjoining wetlands. As with the Mesic Mixed Hardwood Forest community, the western sections of Coastal Plain Bottomland Hardwoods have been logged within the last 10 years. In these sections, the shrub and subcanopy layers predominate, with few canopy level trees present. Herbs are present in gaps and at edges. The mature forest to the east has a mature, well-developed canopy with fewer shrubs and herbs. The canopy of this plant community includes swamp chestnut oak (*Quercus michauxii*), water oak, laurel oak (*Q. laurifolia*), sweetgum, American elm, sugar maple (*Acer barbatum*), red maple, green ash (*Fraxinus pennsylvanica*), loblolly pine, and tulip poplar. The subcanopy and shrub layers contain American holly, ironwood (*Carpinus caroliniana*), titi (*Cyrilla racemiflora*), sweetleaf, highbush blueberry (*Vaccinium corymbosum*), nannyberry (*Viburnum nudum*), sweet bay (*Magnolia virginiana*), giant cane, blackberry (*Rubus argutus*), groundsel, and wax myrtle. Herbs include royal fern (*Osmunda regalis*) and bamboo grass (*Dichantherium scoparium*).

**Disturbed/maintained land** - Disturbed/maintained land occurs along the 14-foot (4.3-meter) wide shoulders of SR 1005, and includes small areas of railroad maintenance yards, residential lots, and agricultural fields. These areas contain planted and volunteer grass species, such as foxtail grass (*Setaria geniculata*) along with other weedy species such as plantain (*Plantago lanceolata*), chickweed (*Stellaria media*), pussytoes (*Antennaria* sp.), and wild onion (*Allium canadense*).

**Cypress-Gum Swamp (Blackwater Subtype)** – This plant community is described by Schafale and Weakley (1990) as occurring in backswamps, sloughs, swales, and featureless floodplains of blackwater rivers. They are seasonally to semipermanently flooded, with variable flow regimes. The water tends to be very acidic, low in mineral sediments and nutrients, and colored by tannins. Cypress-Gum Swamp extends through the center of the project area, in the channel and lower floodplain of Bachelor Creek. South of SR 1005 and east of the main channel, an additional pocket of the swamp area borders SR 1005. This plant community has an open woodland structure, with mature trees interspersed with areas of open water. Shrubs are few, and herbs occupy small islands and edges of exposed soil. The canopy is dominated by bald cypress (*Taxodium distichum*) and gum (*Nyssa aquatica*), but green ash also occurs. The shrub layer contains Virginia willow (*Itea virginica*), red chokeberry, inkberry (*Ilex glabra*), staggerbush (*Lyonia lucida*), and swamp rose (*Rosa palustris*). Vines include grape (*Vitis* sp.), and catbrier (*Smilax bona-nox*). The herb layer is fairly diverse in open areas, including

woolgrass bulrush (*Scirpus cyperinus*), plume grass (*Erianthus giganteus*), cattail (*Typha latifolia*), soft rush (*Juncus effusus*), royal fern, cinnamon fern (*Osmunda cinnamomea*), tearthumb (*Polygonum arifolium*), and marsh pennywort (*Hydrocotyle umbellata*). The Cypress-Gum Swamp plant community grades into Coastal Plain Bottomland Hardwoods (Blackwater Subtype) at its upper edges, except at the western end of the project area. In this area, Cypress-Gum Swamp directly abuts upland Mesic Mixed Hardwood communities.

### 3.1.2 Faunal Communities

No terrestrial mammals were observed during the site visit but physical signs of three mammal species, white-tailed deer (*Odocoileus virginianus*), marsh rabbit (*Sylvilagus palustris*), and beaver (*Castor canadensis*) were observed in Bottomland Hardwoods within the project area. Other mammal species expected to utilize swamps and lowland forested habitats in the project area are southeastern shrew (*Sorex longirostris*), star-nosed mole (*Condylura cristata*), silver-haired bat (*Lasionycteris noctivagans*), Rafinesque's big-eared bat (*Plecotus rafinesquii*), cotton mouse (*Peromyscus gossypinus*), raccoon (*Procyon lotor*), and mink (*Mustela vison*). Fields and other disturbed areas might host eastern cottontail (*Sylvilagus floridanus*), gray squirrel (*Sciurus carolinensis*), eastern harvest mouse (*Reithrodontomys humulis*), red fox (*Vulpes vulpes*), and Virginia opossum (*Didelphis virginiana*).

Birds observed foraging in swamp or hardwood areas within or adjacent to the corridor are red-shouldered hawk (*Buteo lineatus*), red-bellied woodpecker (*Melanerpes carolinus*), downy woodpecker (*Picoides pubescens*), pileated woodpecker (*Dryocopus pileatus*), tufted titmouse (*Baeolophus bicolor*), Carolina chickadee (*Poecile carolinensis*), white-breasted nuthatch (*Sitta carolinensis*), brown-headed nuthatch (*Sitta pusilla*), golden-crowned kinglet (*Regulus satrapa*), and ruby-crowned kinglet (*Regulus calendula*). Birds seen or heard in open fields, disturbed areas, shrub/scrub areas, or over open water are great blue heron (*Ardea herodias*), red-tailed hawk (*Buteo jamaicensis*), turkey vulture (*Cathartes aura*), Carolina wren (*Thryothorus ludovicianus*), northern mockingbird (*Mimus polyglottos*), cedar waxwing (*Bombycilla cedrorum*), northern cardinal (*Cardinalis cardinalis*), dark-eyed junco (*Junco hyemalis*), white-throated sparrow (*Zonotrichia albicollis*), song sparrow (*Melospiza melodia*), American goldfinch (*Carduelis tristis*), and common crow (*Corvus brachyrhynchos*). Other bird species expected to be found in rural swamp and bottomland hardwood areas are wood duck (*Aix sponsa*), barred owl (*Strix varia*), winter wren (*Troglodytes troglodytes*), gray catbird (*Dumetella carolinensis*), wood thrush (*Hylocichla mustelina*), white-eyed vireo (*Vireo griseus*), prothonotary warbler (*Protonotaria citrea*), northern parula (*Parula americana*), and swamp sparrow (*Melospiza georgiana*).

No terrestrial reptile or amphibian species were observed during the site visit. Some terrestrial reptiles and amphibians which may occur within swamp and bottomland habitat in the project area include eastern box turtle (*Terrapene carolina*), spotted salamander (*Ambystoma maculatum*), marbled salamander (*Ambystoma opacum*), southern dusky salamander (*Desmognathus auriculatus*), two-lined salamander (*Eurycea bislineata*), Fowler's toad (*Bufo*

*woodhousei*), green treefrog (*Hyla cinerea*), Brimley's chorus frog (*Pseudacris brimleyi*), ringneck snake (*Diadophis punctatus*), rat snake (*Elaphe obsoleta*), rainbow snake (*Farancia erythrogramma*), rough green snake (*Opheodrys aestivus*), and timber rattlesnake (*Crotalus horridus*).

### 3.2 Aquatic Communities

Observations of aquatic plant communities observed within the project area were limited to duckweed (*Lemna* sp.) and mosquito fern (*Azolla caroliniana*). Emergent hardwood species included baldcypress, green ash, and gum.

Crawfish chimneys were observed along waterways within the project area. Limited investigations resulted in no observations of aquatic reptiles or amphibians. Aquatic or semi-aquatic reptiles and amphibians expected to occur within vegetated wetlands and open waters in the project area include greater siren (*Siren lacertina*), eastern newt (*Notophthalmus viridescens*), two-toed amphiuma (*Amphiuma means*), southern leopard frog (*Rana utricularia*), eastern musk turtle (*Sternotherus odoratus*), painted turtle (*Chrysemys picta*), spotted turtle (*Clemmys guttata*), mud snake (*Farancia abacura*), redbelly water snake (*Nerodia erythrogaster*), black swamp snake (*Seminatrix pygaea*), and cottonmouth (*Agkistrodon piscivorus*).

No sampling was undertaken in Bachelor Creek to determine fishery potential. Small, unidentified minnows were observed during the field survey. Fish species adapted to slow, swampy, acid waters in the project region include bowfin (*Amia calva*), eastern silvery minnow (*Hybognathus regius*), golden shiner (*Notemigonus crysoleucas*), yellow bullhead (*Ameiurus natalis*), redbelly pickerel (*Esox americanus*), chain pickerel (*Esox niger*), eastern mudminnow (*Umbra pygmaea*), pirate perch (*Aphredoderus sayanus*), swampfish (*Chologaster cornuta*), eastern mosquitofish (*Gambusia holbrooki*), striped bass (*Morone saxatilis*), mud sunfish (*Acantharchus pomotis*), blackbanded sunfish (*Enneacanthus chaetodon*), bluegill (*Lepomis macrochirus*), black crappie (*Pomoxis nigromaculatus*), banded pygmy sunfish (*Elassoma zonatum*), and swamp darter (*Etheostoma fusiforme*).

WRC has developed a Significant Aquatic Endangered Species Habitat database to enhance planning, siting, and impact analysis in areas proposed by WRC as being critical due to the presence of endangered or threatened aquatic species. No Significant Aquatic Endangered Species Habitat occurs within the project area, or within Sub-basin 03-04-08. However, this reach of Bachelor Creek has potential as a spawning area for anadromous fish (such as American shad [*Alosa sapidissima*] and alewife [*Alosa pseudoharengus*]) and a travel corridor for migratory fish. Therefore, in-water work during project construction may need to be avoided during moratorium periods (February 15 through June 15) associated with fish migration, spawning, and nursery areas. Future coordination with resource agencies may result in adjustments to these requirements.

To minimize fishing and non-fishing activities that adversely affect marine fisheries, areas of Essential Fish Habitat (EFH) afford limited protection under the Magnuson-Stevens Act of 1996 (16 U.S.C. 1801 *et seq.*). EFH has been broadly defined by congress as "those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity." Fishing and non-fishing related activities that can adversely affect fisheries include fishing gear, dredging, filling, agricultural and urban runoff, and point-source pollution discharge. No marine, estuarine, or tidally influenced waters are located within the project region. Based on the latest directive from the National Marine Fisheries Service (NMFS 2000), the nearest designated EFH is associated with tidal waters of the Neuse River, approximately 12.7 river miles (20.4 river kilometers) downstream of the project area.

### 3.3 Summary of Anticipated Impacts

Plant communities within the project area were delineated to determine approximate area and location of each within the project area. A summary of plant community areas is presented in Table 1.

No significant habitat fragmentation is expected as a result of project activities since potential improvements will be restricted to adjoining roadside margins. Construction noise and associated disturbances will have short-term impacts on avifauna and migratory wildlife movement patterns.

**Table 1:** Plant community coverage within the project area. Areas are expressed in acres, with hectares in parentheses.

<b>Plant Community</b>	<b>Area</b>
Mesic Mixed Hardwood Forest (Coastal Plain Subtype)	8.2 (3.3)
Shrub/scrub assemblage	5.8 (2.3)
Coastal Plain Bottomland Hardwoods (Blackwater Subtype)	5.5 (2.2)
Disturbed/maintained land	5.7 (2.3)
Cypress-Gum Swamp (Blackwater Subtype)	2.5 (1.0)

No Significant Aquatic Endangered Species Habitat or EFH exists within or near the project region. This reach of Bachelor Creek is in the Coastal Plain, and has potential as a travel corridor for migratory fish. In addition, the project area is an Anadromous Fish Spawning Area, as defined by the National Marine Fisheries. Therefore, this project can be classified as Case 2, where in-water work will be avoided during moratorium periods (February 15 through June 15) associated with fish migration, spawning, and nursery areas. Future coordination with resource agencies may result in adjustments to these requirements. Impacts associated with turbidity and suspended sediments resulting from bridge replacement will be minimized through the use of silt curtains and the implementation of stringent erosion control measures.

Potential down-stream impacts to aquatic habitat will be avoided by bridging the swamp system to maintain regular flow and stream integrity. New bridge design parameters should seek to avoid placing bents in the stream channel, if possible. Short-term impacts associated with turbidity and suspended sediments will affect benthic populations. Temporary impacts to downstream habitat from increased sediment during construction will be minimized by the implementation of stringent erosion control measures.

## **4.0 JURISDICTIONAL TOPICS**

### **4.1 Waters of the United States**

Surface waters within the embankments of Bachelor Creek are subject to jurisdictional consideration under Section 404 of the Clean Water Act as waters of the United States (33 CFR Section 328.3). The Bachelor Creek channel and lower floodplain has been characterized by Cowardin et al. (1979) as palustrine, forested, broad-leaved deciduous, seasonally flooded system (PFO1C). During the field visit, an open channel approximately 75 feet (23 meters) could be distinguished in Bachelor Creek.

Vegetated wetlands are defined by the presence of three primary criteria: hydric soils, hydrophytic vegetation, and evidence of hydrology at or near the surface for a portion (12.5 percent) of the growing season (DOA 1987). In addition to the channel and lower floodplain swamps of Bachelor Creek, NWI mapping describes palustrine, forested, broad-leaved deciduous, temporarily flooded (PFO1A), and palustrine, forested, deciduous, seasonally flooded (PFO6C) areas throughout the project area. During the field visit, evidence was noted that the floodplain area may be more persistently flooded, including a beaver dam upstream of the railroad bed, cypress knees, and water marks on trees. Bachelor Creek was found to be a poorly defined, open water swamp system with numerous bald cypress trees along with emergent hardwoods. Therefore, the Cowardin classification may be more accurately stated as a palustrine, forested, deciduous, semipermanently flooded system (PFO6F). This vegetated wetland system is generally associated with the Cypress-Gum Swamp plant community described in Section 3.1. The PFO1A and PFO1C wetlands correspond roughly to the boundaries of Coastal Plain Bottomland Hardwoods. The PFO6C wetlands occupy an area of Coastal Plain Bottomland Hardwoods in the northeastern quadrant of the project area. The field visit verified the nature and general placement of these vegetated wetlands. In addition, palustrine scrub/shrub, broad/leaved deciduous/broad-leaved evergreen, seasonally flooded wetlands (PSS1/3C) exist within the scrub/shrub assemblage plant communities alongside the railroad tracks. In all, approximately 27 percent (8.3 acres [3.4 hectares]) of the project area consists of vegetated wetlands (Figure 2). Table 2 lists these wetland types and their extents within the project area. On the whole, wetlands within the project area would be considered riverine by the DWQ based on their location within the Bachelor Creek floodplain.

**Table 2: Wetlands within the project area. Areas are expressed in acres, with hectares in parentheses.**

Cowardin Classification	Area	DWQ Rating
PFO1A (Coastal Plain Bottomland Hardwoods, Blackwater Subtype)	1.8 (0.7)	60
PFO1C (Coastal Plain Bottomland Hardwoods, Blackwater Subtype)	3.0 (1.2)	60
PFO6C (Coastal Plain Bottomland Hardwoods, Blackwater Subtype)	1.3 (0.5)	60
PFO6F (Cypress-Gum Swamp, Blackwater Subtype)	0.9 (0.4)	71
PSS1/3C (scrub-shrub assemblage)	0.3 (0.1)	27
Total	8.3 (3.3)	

The Nutrient Sensitive Waters Management Strategy for the Protection and Maintenance of Riparian Buffers for the Neuse River Basin (15A NCAC 02B .0233) provides a designation for uses that cause impacts to riparian buffers within the Neuse Basin. The Neuse Basin Rule applies to 50-foot wide riparian buffers (measured perpendicular to the stream) directly adjacent to surface waters in the Neuse River Basin. Changes in land use within the buffer area are considered to be buffer impacts. Land use changes within the riparian buffer are defined as being **Exempt**, **Allowable**, **Allowable with Mitigation**, or **Prohibited**. The **Exempt** designation refers to uses allowed within the buffer. The **Allowable** designation refers to uses that may proceed within the riparian buffer provided there are no practical alternatives, and that written authorization from the DWQ is obtained prior to project development. The **Allowable with Mitigation** designation refers to uses that are allowed, given there are no practical alternatives and appropriate mitigation plans have been approved. The **Prohibited** designation refers to uses that are prohibited without a variance. Exemptions to the riparian buffer rule include the footprint of existing uses that are present and ongoing.

The channel of Bachelor Creek, as defined on the Jasper, NC USGS topographic mapping is the basis for buffer length and area calculations. According to this source, the channel of Bachelor Creek within the project area is 430 feet (131 meters) long. Therefore, there is approximately 1.0 acre (0.4 hectare) of riparian buffer within the project area. Of this area, 0.6 acre (0.2 hectare) is within Zone 1, and 0.4 acre (0.2 hectare) is within Zone 2 of the buffer area. The final determination of the existence of Neuse River buffer and the issue of associated impacts rests with DWQ.

During project construction, Bridge No. 212 will be dismantled without dropping portions of the structure into Bachelor Creek. Therefore, no temporary fill from bridge demolition is expected to be placed in waters of the United States.

If an off-site detour proves to be infeasible, it may be necessary to construct a temporary detour bridge, depending on results of a geotechnical investigation of the wetland substrate's consolidation potential. This would be necessary if impacts to high-quality and medium-quality wetlands, due to the construction of a temporary causeway, are determined to be intolerable and must be minimized.

## 4.2 CAMA Areas of Environmental Concern

The proposed project will occur in one (Craven) of the 20 North Carolina coastal counties covered by the Coastal Area Management Act (CAMA) (N.C.G.S. 113A-118). CAMA authorizes the N.C. Division of Coastal Management (DCM) to manage development in Areas of Environmental Concern in the 20 counties. Estuarine waters, estuarine shorelines, coastal wetlands, and public trust areas are designated as AECs. Any activity involving construction, excavation, filling, or other land disturbance within an AEC is considered development and requires authorization under CAMA. Because the project area contains an open water within a CAMA county, a DCM representative will need to verify the presence or absence of a Public Trust Water Area of Environmental Concern (AEC).

## 4.3 Permit Issues

### 4.3.1 Permits

The project area may contain Public Trust Waters AECs. If replacement of the bridge avoids impacts to AECs, the DCM will review the permit application for CAMA consistency. If an AEC is proposed to be impacted, a CAMA Major Permit or General Permit for bridge replacement (15A NCAC 07H.2300) may be applicable.

This project may be processed as a Categorical Exclusion (CE) under Federal Highway Administration (FHWA) guidelines. The USACE has made available Nationwide Permit (NWP) No. 23 (67 FR 2020, 2082; January 15, 2002) for CEs due to minimal impacts to waters of the U.S. expected with bridge construction. DWQ has made available a General 401 Water Quality Certification for NWP No. 23 (GC 3361). If temporary construction is required that is not described in the CE, a NWP No. 33, for temporary construction, access, and dewatering (67 FR 2020, 2084; January 15, 2002) and associated DWQ General Water Quality Certification (GC 3366) may be required. In the event that NWP No. 23 will not suffice, impacts attributed to bridge replacement and associated approach improvements may qualify under General Bridge Permit (GP) 031 issued by the Wilmington USACE District. DWQ has made available a General 401 Water Quality Certification for GP 031 (GP 3375). Notification to the USACE Wilmington district office is required if this general permit is utilized.

The Neuse River Basin Rule applies to 50-foot (15.3-meter) wide riparian buffers directly adjacent to surface waters of the Neuse River Basin. Neuse Buffer Certification will be needed in addition to a USACE permit and DWQ Water Quality Certification.

### 4.3.2 Mitigation

The USACE has adopted through the Council on Environmental Quality (CEQ) a wetland mitigation policy which embraces the concept of "no net loss of wetlands" and sequencing. The purpose of this policy is to restore and maintain the chemical, biological, and physical integrity of

waters of the United States, and specifically wetlands. Mitigation of wetland impacts has been defined by the CEQ to include: avoiding impacts (to wetlands), minimizing impacts, rectifying impacts, reducing impacts over time, and compensating for impacts (40 CFR Section 1508.20). Each of the three major aspects (avoidance, minimization, and compensatory mitigation) must be considered sequentially.

Avoidance entails an examination of all appropriate and practicable possibilities of averting impacts to waters of the United States. According to a 1990 Memorandum of Agreement between the U.S. Environmental Protection Agency and the USACE, in determining "appropriate and practicable" measures to offset unavoidable impacts, such measures should be appropriate to the scope and degree of those impacts and practicable in terms of cost, existing technology, and logistics in light of overall project purposes. Impacts to wetlands in the project area are expected to be temporary in nature, depending on the footprint of the final bridge design. Temporary impacts due to bridge construction may be unavoidable during a replacement project.

Minimization includes the examination of appropriate and practicable steps to reduce adverse impacts to waters of the United States. Implementation of these steps will be required through project modifications and permit conditions. Minimization typically focuses on decreasing the footprint of the proposed project through the reduction of right-of-way widths, fill slopes and/or roadside shoulder widths. Lengthening of the bridge to lessen the length of the approach causeway is another method to minimize impacts in bridge projects. All efforts will be made to decrease impacts to surface waters.

Compensatory mitigation is not normally considered until anticipated impacts to waters of the United States have been avoided and minimized to the maximum extent possible. It is recognized that "no net loss of wetlands" functions and values may not be achieved in every permit action. In accordance with 15A NCAC 2H .0506(h), DWQ may require compensatory mitigation for projects with greater than or equal to 1.0 acre (0.5 hectare) of impacts to jurisdictional wetlands or greater than or equal to 150 linear feet (46 linear meters) of total perennial stream impacts. Furthermore, in accordance with 67 FR 2020, 2092; January 15, 2002, the USACE requires compensatory mitigation when necessary to ensure that adverse effects to the aquatic environment are minimal. The size and type of proposed project impact, and function and value of the impacted aquatic resource, are factors considered in determining acceptability of compensatory mitigation. Appropriate and practicable compensatory mitigation is required for unavoidable adverse impacts which remain after all appropriate and practicable minimization has been performed. Such actions should be undertaken first in areas adjacent to or contiguous to the discharge site.

Mitigation for Section 404 jurisdictional area impacts may not need to be proposed for this project due to the potentially limited nature of the project impacts. However, utilization of BMPs is recommended in an effort to minimize impacts. Temporary impacts to floodplains associated with construction activities could be mitigated by replanting disturbed areas with native riparian

species and removal of temporary fill material upon project completion. Fill or alteration of more than 150 linear feet (46 meters) of stream may require compensatory mitigation in accordance with 15 NCAC 2H .0506(h). A final determination regarding mitigation rests with the USACE and DWQ.

The requirement for riparian buffer mitigation will depend on the amount of potential impacts resulting from proposed bridge replacement and the availability of practical alternatives. A final determination regarding practical alternatives rests with DWQ.

If an on-site detour becomes necessary, a bridge may be required for crossing project area wetlands, depending on results of a geotechnical investigation of the wetland substrate's consolidation potential. This would be necessary if impacts to high-quality and medium-quality wetlands in the project area, due to the construction of a temporary causeway, are determined to be intolerable and must be minimized. The use of an on-site detour would be further restricted by the presence of the railroad approximately 55 feet (17 meters) to the south.

Limited opportunities for mitigation exist within the project area. A culvert passes under SR 1005 approximately 1200 feet (366 meters) east of Bridge No. 212. Additional culverts to allow free flow of Bachelor Creek swamps under SR 1005 and the upstream railroad bed may be beneficial.

#### 4.4 Protected Species

Species with the federal classification of Endangered (E), Threatened (T), or officially Proposed (P) for such listing are protected under the Endangered Species Act (ESA) of 1973, as amended (16 U.S.C. 1531 *et seq.*). The term "Endangered Species" is defined as "any species which is in danger of extinction throughout all or a significant portion of its range," and the term "Threatened Species" is defined as "any species which is likely to become an Endangered species within the foreseeable future throughout all or a significant portion of its range" (16 U.S.C. 1532). A federally protected species listed for Craven County ( February 11, 2003 FWS list) is presented in Table 3.

**Table 3:** Federally Protected Species listed for Craven County (February 11, 2003 FWS list).

Common Name	Scientific Name	Status
American alligator	<i>Alligator mississippiensis</i>	T(S/A)*
Bald eagle	<i>Haliaeetus leucocephalus</i>	T
Leatherback sea turtle	<i>Dermochelys coriacea</i>	E
West Indian manatee	<i>Trichechus manatus</i>	E
Red-cockaded woodpecker	<i>Picoides borealis</i>	E
Sensitive jointvetch**	<i>Aeschynomene virginica</i>	T

\* Threatened due to Similarity of Appearance: resembles in appearance a threatened species that enforcement personnel would have substantial difficulty in differentiating between the listed and unlisted species. The American alligator has this designation due to similarity of appearance to other rare crocodylians.

\*\* Historic record – last seen within Craven County more than 20 years ago.

***Alligator mississippiensis* (American alligator)**  
**Threatened due to Similarity of Appearance**

Family: Alligatoridae

Date Listed: March 11, 1967

Date Delisted: June 04, 1987

American alligator is listed as threatened based on the similarity in appearance to other federally-listed crocodilians; however, there are no other crocodilians within North Carolina. American alligators can be found in a variety of freshwater to estuarine aquatic habitats including swamp forests, marshes, large streams and canals, and ponds and lakes.

T S/A species are not subject to Section 7 consultation and a biological conclusion is not required. However, this project is not expected to affect the American alligator.

***Haliaeetus leucocephalus* (Bald eagle)**  
**Threatened**

Family: Accipitridae

Date Listed: March 11, 1967

The bald eagle is a large raptor with a wingspan greater than 6 feet (2.0 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 (229 to 458 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 1.0 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 (458 meters) of known roosting sites.

**BIOLOGICAL CONCLUSION:                    MAY AFFECT, NOT LIKELY TO ADVERSELY AFFECT**

Potential habitat for bald exists within the project area. The open water swamp of this section of Bachelor Creek contains numerous emergent bald cypress, gum and green ash suitable for perching. Areas of open water for foraging are also present. No bald eagles were observed during the site visit. The nearest NHP record of a bald eagle is approximately 9 miles (14.5 kilometers) southeast, at Brice Creek near the Trent River. No long-term impact to bald eagle is anticipated as a result of this project.

***Dermochelys coriacea* (Leatherback sea turtle)**

**Endangered**

Family: Dermochelyidae

Date Listed: June 02, 1970

The leatherback turtle is distinguished by its large size (46- to 70-inch [120- to 180-centimeter] carapace, 650 to 1,500 pounds [295 to 682 kilograms]) and a shell of soft, leathery skin. This species is primarily tropical in nature, but the range may extend to Nova Scotia and Newfoundland (Palmer and Braswell 1995, Martof *et al.* 1980). The leatherback is a powerful swimmer, often seen far from land; however, it sometimes moves into shallow bays, estuaries, and even river mouths. Its preferred food is jellyfish, although the diet includes other sea animals and seaweed. The leatherback generally nests on sandy, tropical beaches.

**BIOLOGICAL CONCLUSION:**

**NO EFFECT**

Bachelor Creek, in the project area, is a non-tidal, freshwater stream. Therefore, no habitat for leatherback sea turtle exists in or near the project area. No leatherback sea turtles were observed during the site visit, and NHP documents no leatherback sea turtle occurrences within 5.0 miles (8.0 kilometers) of the project area.

***Trichechus manatus* (West Indian manatee)**

**Endangered**

Family: Trichechidae

Date Listed: March 11, 1967

The West Indian manatee is a large, gray or brown aquatic mammal that averages 10 to 13 feet (3 to 4 meters) in length and weighs up to 1000 pounds (455 kilograms). During summer months manatees migrate from their Florida wintering areas as far north as coastal Virginia (FWS 1993). These mammals inhabit warm waters, both fresh and salt, where their diet consists mostly of aquatic vegetation (Webster *et al.* 1985).

**BIOLOGICAL CONCLUSION:**

**NO EFFECT**

Potential habitat for West Indian manatee does not exist within or near the project area. The dimensions of the Bachelor Creek channel preclude access for an animal as large as a manatee. In these upstream reaches of the stream, obstacles such as beaver dams, logjams and point bars obstruct the movement of larger aquatic mammals. No West Indian manatees were observed during the site visit. The nearest NHP record of the West Indian manatee is approximately 8.0 miles (12.9 kilometers) southeast, at the mouth of the Trent River.

***Picoides borealis* (Red-cockaded woodpecker)**

**Endangered**

Family: Picidae

Date Listed: October 13, 1970

This small woodpecker (7 to 8.5 inches [18 to 22 centimeters] long) has a black head, prominent white cheek patches, and a black-and-white barred back. Males often have red markings (cockades) behind the eye, but the cockades may be absent or difficult to see (Potter *et al.* 1980). Primary habitat consists of mature to over-mature southern pine forests dominated by loblolly, long-leaf (*Pinus palustris*), slash (*P. elliotii*), and pond (*P. serotina*) pines (Thompson and Baker 1971). Nest cavities are constructed in the heartwood of living pines, generally older than 70 years, that have been infected with red-heart disease. Nest cavity trees tend to occur in clusters, which are referred to as colonies (FWS 1985). The woodpecker drills holes into the bark around the cavity entrance, resulting in a shiny, resinous buildup around the entrance that allows for easy detection of active nest trees. Pine flatwoods or pine-dominated savannas which have been maintained by frequent natural fires serve as ideal nesting and foraging sites for this woodpecker. Development of a thick understory may result in abandonment of cavity trees.

**BIOLOGICAL CONCLUSION:**

**NO EFFECT**

A few mature loblolly pine trees exist within the project area and adjacent areas. However, the trees are widely spaced and occur in scattered locations. The clustered arrangement of pine trees preferred by the birds for nesting colonies is not provided in the project vicinity. In addition, dense shrub and understory layers occur under large areas of bottomland and mesic mixed forest. The use of scattered pines for foraging sites would depend on the birds crossing large tracts (greater than 300 [91 meters] feet wide) of roadways, agricultural fields, and brushy woods. Therefore, the project area contains no suitable habitat for red-cockaded woodpecker nesting, roosting, or foraging. No occurrence of red-cockaded woodpecker is documented by the NHP within 5.0 miles (8.0 kilometers) of the project area. No red-cockaded woodpeckers were observed during the site visit.

***Aeschynomene virginica* (Sensitive jointvetch)**

**Threatened**

Family: Fabaceae

Date Listed: May 20, 1992

Sensitive jointvetch is a robust, bushy-branched, annual legume often exceeding 3.3 feet (1.0 meter) in height. Young stems have bristly hairs with large, swollen bases (Leonard 1985). The alternate, compound leaves are even-pinnate, approximately 1.3 to 2 inches (3.2 to 5.1 centimeters) wide, with 30 to 56 toothless, gland-dotted leaflets (Radford *et al.* 1968). Flowers are bright greenish-yellow with red veins, about 0.5 inch (1.3 centimeter) long, and are subtended by bractlets with toothed margins (Leonard 1985). Flowers are produced on few-

flowered racemes from July to October. The jointed legume (loment) is about 2 inches (5 centimeters) long, has 6 to 10 segments, and a 0.5 to 1.0 inch (1.3- to 2.5-centimeter) long stalk. Sensitive jointvetch occurs in the intertidal zone near the upper limit of tidal fluctuation. It seems to prefer sparsely-vegetated areas where annuals predominate (FWS 1995). Habitat for this species in North Carolina consists of moist to wet coastal roadside ditches and moist fields that are nearly tidal (FWS 1994), especially in full sun (Leonard 1985). Associated plants listed for this jointvetch in North Carolina are all fresh water species. Sensitive jointvetch is not expected to be found in association with salt-tolerant species such as saltmarsh cordgrass or giant cordgrass (Rouse 1994). This species seems to favor microhabitats where there is a reduction in competition from other plant species, and usually some form of soil disturbance (FWS 1995).

**BIOLOGICAL CONCLUSION:**

**NO EFFECT**

The project area is well upstream of any tidal influence. In addition, disturbed open areas with little herbaceous competition are not found within the project area. Most shoreline and open areas are colonized by tearthumb, marsh pennywort, and soft rush, as well as other grasses and rushes. Therefore, suitable habitat for sensitive jointvetch does not exist within the project area. The nearest NHP records for sensitive jointvetch are approximately 8.5 miles (13.7 kilometers) southeast, near James City. However, this species has not been recorded in Craven County in over 20 years. No individuals of sensitive jointvetch were observed during the site visit.

**Federal Species of Concern** - The February 11, 2003 FWS list also includes a category of species designated as "Federal species of concern" (FSC). A species with this designation is one that may or may not be listed in the future (formerly C2 candidate species or species under consideration for listing for which there is insufficient information to support listing). The FSC designation provides no federal protection under the ESA for the species listed. FSC species listed for Craven County are presented in Table 4.

NHP files list no documentation for FSC species within 5.0 miles (8.0 kilometers) of the project area.

**Table 4: Federal Species of Concern listed for Craven County (FWS list, February 11, 2003).**

Common Name	Scientific Name	Potential Habitat	State Status**
Bachman's sparrow	<i>Aimophila aestivalis</i>	no	SC
Black rail	<i>Laterallus jamaicensis</i>	no	SR
Southern hognose snake	<i>Heterodon simus</i>	no	SC
Anointed swallow moth*	<i>Pyreferra ceromatica</i>	no	SR
Croatan crayfish	<i>Procambarus plumimanus</i>	yes	W3
Carolina asphodel*	<i>Tofieldia glabra</i>	no	W1
Carolina spleenwort	<i>Asplenium heteroresiliens</i>	no	E
Chapman's sedge*	<i>Carex chapmanii</i>	yes	W1
Godfrey's sandwort	<i>Minuartia godfreyi</i>	no	E
Loose watermilfoil	<i>Myriophyllum laxum</i>	no	T
Pondspice	<i>Litsea aestivalis</i>	no	SR-T
Savannah cowbane	<i>Oxypolis ternata</i>	no	W1
Spring-flowering goldenrod	<i>Solidago verna</i>	no	SR-L
Venus flytrap	<i>Dionaea muscipula</i>	no	SR-L
White wicky*	<i>Kalmia cuneata</i>	no	SR-L

\* Historic record – the species was last observed in the county more than 50 years ago

\*\*State Status: SC = Special Concern; SR = Significantly Rare; SR-T = Significantly Rare throughout species' range;

SR-L Significantly Rare and of limited range (endemic or near-endemic to North Carolina)

W1 = Watch List – rare, but relatively secure; W3 = Watch List – rare, but uncertain documentation

E = Endangered; T = threatened; (Amoroso 2002; LeGrand and Hall 2001).

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