STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

MICHAEL F. EASLEY
GOVERNOR

LYNDO TIPPETT
SECRETARY

October 7, 2008

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

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

Dear Sirs:

Subject: **Nationwide 23 Permit Application and CAMA Major Development Permit Application** for the proposed replacement of Bridge No. 28 on SR 1222 over Shingle Landing Creek (Moyock Run) in Currituck County, TIP B-4094, Debit WBS 33452.1.1 $400

Please find enclosed the CAMA MP forms, North Carolina Division of Water Quality (NCDWQ) Stormwater Permit, permit drawings, utility plans, half-sized plans, and the certified mail receipts for the above-mentioned project. The CE was completed for this project in February 2005 and a subsequent addendum was signed in June 2007, and distributed shortly thereafter. Additional copies will be made available upon request. The North Carolina Department of Transportation (NCDOT) proposes to replace existing Bridge No. 28 on SR 1222 (Tulls Creek Rd) over Shingle Landing Creek (Moyock Run) in Currituck County. The project involves replacement of the existing 76.5-foot bridge structure with a 108-foot three span bridge at approximately the same location and slightly higher roadway elevation of the existing structure using top-down construction. Traffic will be detoured off-site along surrounding roads, during construction. Proposed permanent impacts to jurisdictional wetlands are approximately 0.08 acre.

Impacts to Waters of the United States

General Description: The project is located within subbasin 03-01-54 of the Pasquotank River Basin (Hydrologic Unit 03020105). Shingle Landing Creek has been assigned Stream Index Number [DWQ Index # 30-1-2-2-1] and a Best Usage Classification of "C Sw". Neither Water Supplies (WS-I: undeveloped watersheds or WS-II: predominately undeveloped watersheds), nor Outstanding Resource Waters (ORW) occur within 1.0 miles of project study area. Shingle Landing Creek is not designated as a North Carolina Natural or Scenic River, or as a National Wild and Scenic River. In addition, Shingle Landing Creek is not listed on the Final 2006 303(d) list of impaired waters due to sedimentation for the Pasquotank River Basin, nor does it drain

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

TELEPHONE: 919-733-3141
FAX: 919-733-9794
WEBSITE: WWW.NCDOT.ORG

LOCATION:
TRANSPORTATION BUILDING
1 SOUTH WILMINGTON STREET
RALEIGH NC

into any Section 303 (d) waters within 1.0 mile of the project study area. Shingle Landing Creek is designated as an Area of Environmental Concern (AEC) by NCDCM.

Permanent Impacts: Construction of the proposed project will result in permanent impacts, including < 0.01-acre of fill, 0.04-acre of mechanized clearing, and 0.03-acre of excavation in wetlands (see permit drawings). Excavation in the wetlands was needed because the existing ditches were filled over from the roadway fill due to widening. If the ditches are not replaced, the low areas along the road would not have anywhere to drain, thus causing possible hydroplaning issues.

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

Utility Impacts: No impacts to jurisdictional resources due to utility relocation will be necessary for the construction of this project.

Bridge Demolition: The existing bridge consists of timber joists with an asphalt-wearing surface. The substructure is composed of a timber abutment design with interior bents consisting of timber caps on timber piles. The bridge can be removed without dropping components into Waters of the United States during construction. Best Management Practices for Bridge Demolition and Removal will be followed to avoid any temporary fill from entering Waters of the United States.

In-water Work Moratorium

During project development, the NC Division of Marine Fisheries (DMF) recommended an in-water work moratorium for anadromous fish between February 15 and June 30.

Federally Protected Species

As of January 31, 2008 the U.S. Fish and Wildlife Service (USFWS) lists seven federally protected species for Currituck County (Table 1). The biological conclusions have not changed since the completion of the CE (February 2005 and June 2007) for any species. However, the bald eagle has been deleted from the list since the completion of the CE. Concurrence for the West Indian manatee and shortnose sturgeon was received from both the USFWS and the National Marine Fisheries Service (NMFS) on February 18, 2004 and June 2, 2004 respectively (see CE Appendix).

Table 1. Federally Protected Species in Currituck County

Scientific Name	Common Name	Federal Status	Habitat Present	Biological Conclusion
Dermochelys coriacea	Leatherback sea turtle	E	No	No Effect
Caretta caretta	Loggerhead sea turtle	T	No	No Effect
Trichechus manatus	West Indian Manatee	E	Yes	MANLTAA
Charadrius melodus	Piping plover	T	No	No Effect
Picoides borealis	Red-cockaded woodpecker	E	No	No Effect
Amaranthus pumilus	Seabeach amaranth	T	No	No Effect
Acipenser brevirostrum	Shortnose sturgeon	E	Yes	MANLTAA

MANLTAA - May Affect, Not Likely to Adversely Affect

In order to protect the West Indian manatee, the NCDOT will adhere to the *Precautions for Construction in Areas Which May be Used by the West Indian Manatee in North Carolina.*

Effective August 8, 2007, the bald eagle (*Haliaeetus leucocephalus*) was delisted from the Endangered Species Act. A Biological Conclusion is no longer necessary for this species. The bald eagle is however, protected under the Bald and Golden Eagle Protection Act. Nesting habitat for bald eagles does exist within 660 feet of the project area. NHP records do not document any occurrences of this species within 660 feet of the project area as of June 24, 2008. A follow-up survey was conducted on March 20, 2008. No bald eagles or nests were observed during this site visit.

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:

- Use of an off-site detour during construction
- Construction of a 31.5-foot longer bridge
- 3:1 slope stakes on fill slopes, when applicable
- Best Management Practices will also be utilized during demolition of the existing bridge and construction of the new bridge
- Reducing the number of in-water bents from four to two

Mitigation

Due to the limited amount of impacts, no mitigation is proposed for this project.

Jurisdictional Determination

NCDOT does not request the Corps to evaluate our site using the Rapanos guidance. Instead, we are satisfied with the delineation as reviewed and approved prior to 6/5/2007, and ask that you evaluate this permit verification based on that review.

Project Schedule

The review date for this project is January 27, 2009 and the Let Date is March 17, 2009.

Regulatory Approvals

CAMA: NCDOT requests that the proposed work be authorized under a Coastal Area Management Act Major Development Permit. Copies of the certified mail receipts are attached. The authority to debit $400.00 from WBS Element 33452.1.1 for the processing fee is hereby granted.

Section 404 Permit: This project was 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 Permit 23 (72 CFR; 11092-11198, March 12, 2007).

Section 401 Permit: We anticipate 401 General Certification number 3701 will apply to this project. All general conditions of the Water Quality Certification will be met. Therefore, NCDOT is not requesting written concurrence. NCDOT is providing two copies of this

application to the NCDWQ, for their review. NCDOT received a stormwater permit (SW7080515), dated July 15, 2008, from NCDWQ (attached).

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

Thank you for your time and assistance with this project. Please contact Tyler Stanton at tstanton@dot.state.nc.us or (919) 715-1439 if you have any questions or need additional information.

Sincerely,

E. L. Lusk

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

CC:
W/attachment
Mr. Brian Wrenn, NCDWQ (2 Copies)
Ms. Cathy Brittingham, NCDCM

W/o attachment (see website for attachments)
Mr. Scott McLendon, USACE, Wilmington
Mr. Travis Wilson, NCWRC
Mr. Gary Jordan, USFWS
Mr. Ron Sechler, NMFS
Ms. Anne Deaton, NCDMF
Dr. David Chang, P.E., Hydraulics
Mr. Greg Perfetti, P.E., Structure Design
Mr. Mark Staley, Roadside Environmental
Mr. Victor Barbour, P.E., Project Services Unit
Mr. Anthony Roper, P.E., Division 1 Engineer
Mr. Clay Willis, Division 1 Environmental Officer
Mr. Jay Bennett, P.E., Roadway Design
Mr. Majed Alghandour, P. E., Programming and TIP
Mr. Art McMillan, P.E., Highway Design
Mr. Joseph Miller, P.E., PDEA

Office Use Only: Form Version March 05

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: NWP 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
   Raleigh, NC
   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: _____

2. T.I.P. Project Number or State Project Number (NCDOT Only): B-4094

3. Property Identification Number (Tax PIN): N/A

4. Location
   County: Currituck Nearest Town: Moyock
   Subdivision name (include phase/lot number): N/A
   Directions to site (include road numbers/names, landmarks, etc.): _____
   _____
   _____

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): _____ °N _____ °W

6. Property size (acres): N/A

7. Name of nearest receiving body of water: Shingle Landing Creek

8. River Basin: Pasquotank
   (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 with forested areas and scattered residential and farms.
   _____
   _____

10. Describe the overall project in detail, including the type of equipment to be used: Replacement of the existing bridge structure with a 108-foot bridge at approximately the same location and roadway elevation of the existing structure using top-down construction.

11. Explain the purpose of the proposed work: The bridge is considered to be structurally deficient and functionally obsolete and the replacement will result in safer traffic operations.

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.
N/A

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: approach fill (< 0.01), excavation (0.03), and mechanized clearing (0.04)

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)
Site 2	Permanent fill	Bottomland Hardwood	Yes	20	< 0.01
Site 2	Excavation	Bottomland Hardwood	Yes	0	0.03
Site 2	Mechanized clearing	Bottomland Hardwood	Yes	0	0.04
				Total Wetland Impact (acres)	0.08

3. List the total acreage (estimated) of all existing wetlands on the property: 85 acres

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)					0	0

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)
Total Open Water Impact (acres)				

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

Stream Impact (acres):	0.0
Wetland Impact (acres):	0.08
Open Water Impact (acres):	< 0.01
Total Impact to Waters of the U.S. (acres)	0.08
Total Stream Impact (linear feet):	0

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

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.):
   Current land use in the vicinity of the pond:
   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. Use of an off-site detour during construction, construction of a 31-foot longer bridge, Best Management Practices will also be utilized during demolition of the existing bridge and construction of the new bridge.

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.
   No mitigation is proposed for this project.

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): 0
   Amount of buffer mitigation requested (square feet): 0
   Amount of Riparian wetland mitigation requested (acres): 0
   Amount of Non-riparian wetland mitigation requested (acres): 0
   Amount of Coastal wetland mitigation requested (acres): 0

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
0	0	3 (2 for Catawba)	0
0	0	1.5	0
Total	0		0

* 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.
N/A

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. Ditches are used to carry the stormwater in all

quadrants except for the Northeast quadrant. Stormwater is allowed to sheet flow in the Northeast quadrant.

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.
N/A

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).

E. L. Lusk 7.30.08

Applicant/Agent's Signature **Date**
(Agent's signature is valid only if an authorization letter from the applicant is provided.)

DCM MP-1

APPLICATION for Major Development Permit

(last revised 12/27/06)

North Carolina DIVISION OF COASTAL MANAGEMENT

1. Primary Applicant/ Landowner Information

Business Name			Project Name (if applicable)	
N.C. Department Of Transportation			B-4094	
Applicant 1: First Name	MI	Last Name		
Applicant 2: First Name	MI	Last Name		
If additional applicants, please attach an additional page(s) with names listed.				
Mailing Address		PO Box	City	State
1548 Mail Service Center			Raleigh	NC
ZIP	Country	Phone No.		FAX No.
27699 1548	U.S.	919 - 733 - 3141 ext.		919 - 733 - 9747
Street Address *(if different from above)*		City	State	ZIP
				-
Email				

2. Agent/Contractor Information

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

<Form continues on back>

3. Project Location

County (can be multiple)	Street Address		State Rd. #
Currituck			1222
Subdivision Name	City	State	Zip
	Moyock	NC	27958 -

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

4. Site Description

a. Total length of shoreline on the tract (ft.)	b. Size of entire tract (sq.ft.)
c. Size of individual lot(s) , , , *(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)* ☐NHW or ☐NWL

e. Vegetation on tract

f. Man-made features and uses now on tract
Existing bridge and roadway approaches

g. Identify and describe the existing land uses adjacent to the proposed project site.

h. How does local government zone the tract?	i. Is the proposed project consistent with the applicable zoning? (Attach zoning compliance certificate, if applicable)
Public Transportation	☐Yes ☐No ☒NA

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

<Form continues on next page>

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

n. Describe existing wastewater treatment facilities. None located in project corridor
o. Describe existing drinking water supply source. Water mainline runs along the project
p. Describe existing storm water management or treatment systems. Surface runoff

5. Activities and Impacts

a. Will the project be for commercial, public, or private use?	☐Commercial ☒Public/Government ☐Private/Community
b. Give a brief description of purpose, use, and daily operations of the project when complete.	
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.	
d. List all development activities you propose.	
e. Are the proposed activities maintenance of an existing project, new work, or both?	Both
f. What is the approximate total disturbed land area resulting from the proposed project?	☐Sq.Ft or ☐Acres
g. Will the proposed project encroach on any public easement, public accessway or other area that the public has established use of?	☐Yes ☐No ☐NA
h. Describe location and type of existing and proposed discharges to waters of the state.	
i. Will wastewater or stormwater be discharged into a wetland?	☐Yes ☐No ☐NA
If yes, will this discharged water be of the same salinity as the receiving water?	☐Yes ☐No ☐NA
j. Is there any mitigation proposed? If yes, attach a mitigation proposal.	☐Yes ☐No ☐NA

<Form continues on back>

6. Additional Information

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

a. A project narrative.
b. An accurate, dated work plat (including plan view and cross-sectional drawings) drawn to scale. Please give the present status of the proposed project. Is any portion already complete? If previously authorized work, clearly indicate on maps, plats, drawings to distinguish between work completed and proposed.
c. A site or location map that is sufficiently detailed to guide agency personnel unfamiliar with the area to the site.

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

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

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

Name See Attachments
Phone No.

Address

Name
Phone No.

Address

Name
Phone No.

Address

g. A list of previous state or federal permits issued for work on the project tract. Include permit numbers, permittee, and issuing dates.

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

i. Wetland delineation, if necessary.

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

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

7. Certification and Permission to Enter on Land

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

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

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

Date 10.7.08 Print Name E.L.Lusk

Signature E.L.Lusk

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

Form DCM MP-5

BRIDGES and CULVERTS

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

1. BRIDGES

☐ *This section not applicable*

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

b. Water body to be crossed by bridge:
Shingle Landing Creek

c. Type of bridge (construction material):
18" Concrete Cored Slab

d. Water depth at the proposed crossing at NLW or NWL:
7.8 feet

e. (i) Will proposed bridge replace an existing bridge? ☒Yes ☐No
If yes,
(ii) Length of existing bridge: 76.5 feet
(iii) Width of existing bridge: 26.5 feet
(iv) Navigation clearance underneath existing bridge: 2.9 feet
(v) Will all, or a part of, the existing bridge be removed?
(Explain) All

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: 108 feet

h. Width of proposed bridge: 30 feet (out to out)

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: The proposed bridge will have a greater span length between piers and vertical clearance; therefore, the main channel will have a greater opening for vessels.

k. Navigation clearance underneath proposed bridge: 3.1 feet

l. Have you contacted the U.S. Coast Guard concerning their approval? ☒Yes ☐No
If yes, explain: See attachment

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

n. Height of proposed bridge above wetlands: 1.8 feet (height to low steel)

2. CULVERTS

☒ *This section not applicable*

a. Number of culverts proposed: _____

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

< Form continues on back>

c. Type of culvert (construction material):

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

If yes,

(ii) Length of existing bridge: _____

(iii) Width of existing bridge: _____

(iv) Navigation clearance underneath existing bridge: _____

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

_____

_____

_____

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

If yes,

(ii) Length of existing culvert(s): _____

(iii) Width of existing culvert(s): _____

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

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

_____

_____

_____

f. Length of proposed culvert: _____

g. Width of proposed culvert: _____

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

_____

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

_____

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

If yes, explain:

_____

_____

_____

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

If yes, explain:

_____

_____

_____

3. EXCAVATION and FILL

☐*This section not applicable*

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

If yes,

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

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

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

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

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

☐CW _____ ☐SAV _____ ☐SB _____

☒WL _____ ☐None

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

See attachment

_____

_____

_____

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: 32 +/- feet

(iii) Avg. width of area to be excavated: 48 +/- feet

(iv) Avg. depth of area to be excavated: 1.7 +/- feet

(v) Amount of material to be excavated in cubic yards: 95

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

(i) Location of the spoil disposal area: Uplands, Suitable Offsite Location

(ii) Dimensions of the spoil disposal area: To Be Determined By Contractor

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

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

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

☐CW ☐SAV ☐WL ☐SB ☒None

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

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

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

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

If yes,

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

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

(iv) Purpose of fill:

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:

See attachement

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: _____

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

(iv) Purpose of fill:

4. GENERAL

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

If yes, explain: Telephone lines, water lines, power lines

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.

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

Uplands, Standard Erosion control

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

Standard Roadway Construction Equipment

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

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

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

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

10-7-08

Date

B-4094

Project Name

NCDOT, E.L. Lusk

Applicant Name

E.L. Lusk

Applicant Signature

Michael F. Easley, Governor

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

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

Stanton

DIVISION OF WATER QUALITY
July 15, 2008

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

Subject: Stormwater Permit No. SW7080515
Bridge Replacement Project
B-4094, Shingle Landing Creek
Currituck County

Dear Dr. Thorpe:

The Washington Regional Office received a completed Stormwater Application for the subject project on May 19, 2008. Staff review of the plans and specifications has determined that the project, as proposed, will comply with the Stormwater Regulations set forth in Title 15A NCAC 2H.1000. We are forwarding Permit No. SW7080515 dated July 15, 2008 to the NC Department of Transportation for the proposed bridge replacement project over Shingle Landing Creek located on SR1222 near Moyock, NC.

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

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

If you have any questions, or need additional information concerning this matter, please contact Mr. Bill Moore at (252) 948-3919.

Sincerely,

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

cc: Washington Regional Office
Central Files

STATE OF NORTH CAROLINA
DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES
DIVISION OF WATER QUALITY

STATE STORMWATER MANAGEMENT PERMIT

In accordance with the provisions of Article 21 of Chapter 143, General Statutes of North Carolina as amended, and other applicable Laws, Rules, and Regulations

PERMISSION IS HEREBY GRANTED TO

NC Department of Transportation

Currituck County

FOR THE

Construction of a public road/bridge in compliance with the provisions of 15A NCAC 2H.1000 (hereafter referred to as the *"stormwater rules"*) and the approved stormwater management plans and specifications and other supporting data as attached and on file with and approved by the Division of Water Quality and considered a part of this permit for a bridge replacement project over Shingle Landing Creek, located on SR1222 near Moyock, NC.

This permit shall be effective from the date of issuance until rescinded and shall be subject to the following specified conditions and limitations:

I. DESIGN STANDARDS

1. The runoff from the impervious surfaces has been directed away from surface waters as much as possible.
2. The Amount of built-upon area has been minimized as much as possible.
3. Best management Practices are employed which minimizes water quality impacts.
4. Approved plans and specifications for this project are incorporated by reference and are enforceable parts of the permit.
5. Vegetated roadside ditches are 3:1 slopes or flatter.

II. SCHEDULE OF COMPLIANCE

1. The permittee shall at all times provide adequate erosion control measures in conformance with the approved Erosion Control Plan.

2. The Director may notify the permittee when the permitted site does not meet one or more of the minimum requirements of the permit. Within the time frame specified in the notice, the permittee shall submit a written time schedule to the Director for modifying the site to meet minimum requirements. The permittee shall provide copies of revised plans and certification in writing to the Director that the changes have been made.

3. The permittee shall submit all information requested by the Director or his representative within the time frame specified in the written information request.

4. The permittee shall submit to the Director and shall have received approval for revised plans, specifications, and calculations prior to construction for the following items:

   a. Major revisions to the approved plans, such as road realignment, deletion of any proposed BMP, changes to the drainage area or scope of the project, etc.
   b. Project name change.
   c. Redesign of, addition to, or deletion of the approved amount of built-upon area, regardless of size.
   d. Alteration of the proposed drainage.

5. The Director may determine that other revisions to the project should require a modification to the permit.

III. GENERAL CONDITIONS

1. This permit is not transferable to any person except after notice to and approval by the Director. The Director may require modification or revocation and reissuance of the permit to change name and incorporate such other requirements as may be necessary. A formal permit request must be submitted to the Division of Water Quality accompanied by the appropriate fee, documentation from the parties involved, and other supporting materials as may be appropriate. The approval of this request will be considered on its merits and may or may not be approved. The permittee is responsible for compliance with the terms and conditions of this permit until such time as the Director approves the transfer.

2. Failure to abide by the conditions and limitations contained in this permit may subject the Permittee to enforcement action by the Division of Water Quality, in accordance with North Carolina General Statute 143-215.6(A) to 143-215.6(C).

3. The issuance of this permit does not preclude the Permittee from complying with any and all statutes, rules, regulations, or ordinances which may be imposed by other government agencies (local, state, and federal) which have jurisdiction.

4. The issuance of this permit does not prohibit the Director from reopening and modifying the permit, revoking and reissuing the permit, or terminating the permit as allowed by laws, rules, and regulations contained in Title 15A of the North Carolina Administrative Code, Subchapter 2H .1000; and North Carolina General Statute 143-215.1 et. al.

5. The permit may be modified, revoked and reissued or terminated for cause. The filing of a request for a permit modification, revocation and reissuance or termination does not stay any permit condition.

6. The permit issued shall continue in force and effect until revoked or terminated.

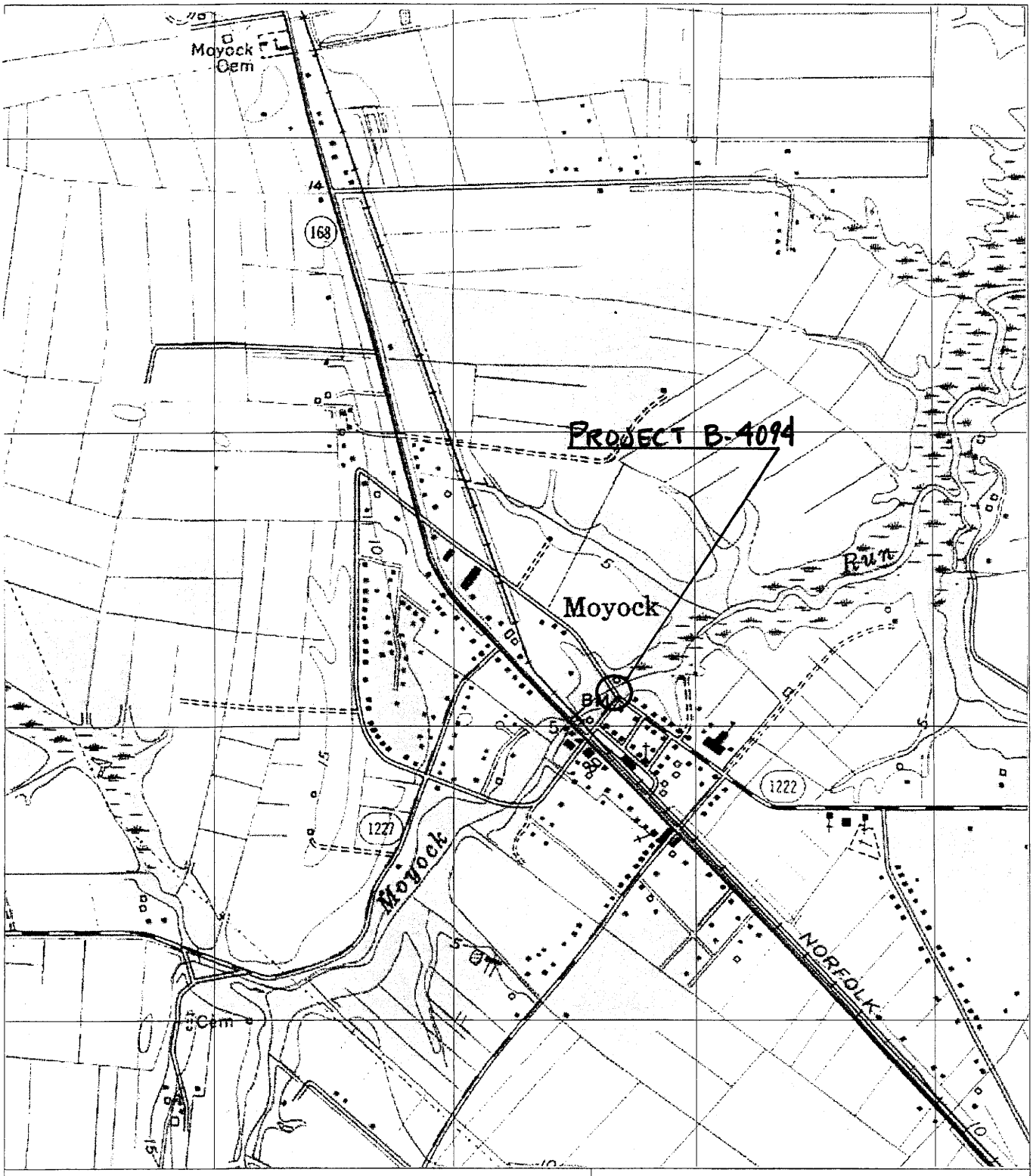
7. The permittee shall notify the Division of any name, ownership or mailing address changes within 30 days.

Permit issued this the 15 th day of July, 2008.

NORTH CAROLINA ENVIRONMENTAL MANAGEMENT COMMISSION

for Coleen H. Sullins, Director
Division of Water Quality
By Authority of the Environmental Management Commission

Permit Number SW7080515



TOPO MAP

SCALE: 1" : 1500'

Permit Drawing
Sheet 1 of 9

NCDOT

DIVISION OF HIGHWAYS
CURRITUCK COUNTY
PROJECT: 33452.1.1 (B-4094)
BRIDGE NO. 28 OVER
SHINGLE LANDING CREEK
ON SR 1222
(TULLS CREEK RD.)

SHEET 1 OF 9 1/10/2008

WETLAND PERMIT IMPACT SUMMARY

Site No.	Station (From/To)	Structure Size / Type	WETLAND IMPACTS: Permanent Fill In Wetlands (ac)	Temp. Fill In Wetlands (ac)	Excavation in Wetlands (ac)	Mechanized Clearing in Wetlands (ac)	Hand Clearing in Wetlands (ac)	SURFACE WATER IMPACTS: Permanent SW impacts (ac)	Temp. SW impacts (ac)	Existing Channel Impacts Permanent (ft)	Existing Channel Impacts Temp. (ft)	Natural Stream Design (ft)
1	13+84.25 and 14+20.25	Bridge						<0.01				
2	14+30 TO 15+60 -L- LT & RT	Roadway	<0.01		0.03	0.04						
TOTALS:			<0.01		0.03	0.04		<0.01				

Permit Drawing
Sheet 2 of 9

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
Wake County
Project: B-4094 (Bridge #28)

SHEET 2 OF 9 1/18/2008

PROPERTY OWNERS

NAMES AND ADDRESSES

	NAMES	ADDRESSES
2	Grace O. Poyner	PO Box 7 Moyock, NC 27958
3	Robert DeCastillia	PO Box 478 Moyock, NC 27958
4	Carol Ballance Tynes	140 Rainbow Dr. Livingston, TX 77399

Permit Drawing
Sheet 3 of 9

NCDOT

DIVISION OF HIGHWAYS
CURRITUCK COUNTY
PROJECT: 33452.1.1 (B-4094)
BRIDGE NO. 28 OVER
SHINGLE LANDING CREEK
ON SR 1222
(TULLS CREEK RD.)

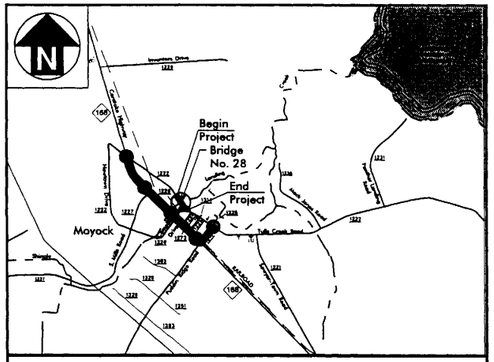
SHEET 3 OF 9 1/10/2008

03/08/99

TIP PROJECT: B-4094

CONTRACT:

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



VICINITY MAP — PROPOSED DETOUR ROUTE

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CURRITUCK COUNTY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4094	1	

W.B.S. ELEMENT	F. A. PROJ. NO.	DESCRIPTION
33452.1.1	BRZ-1222(6)	P.E.
33452.2.1	BRZ-1222(6)	UTL /RW

Permit Drawing
Sheet 4 of 9

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

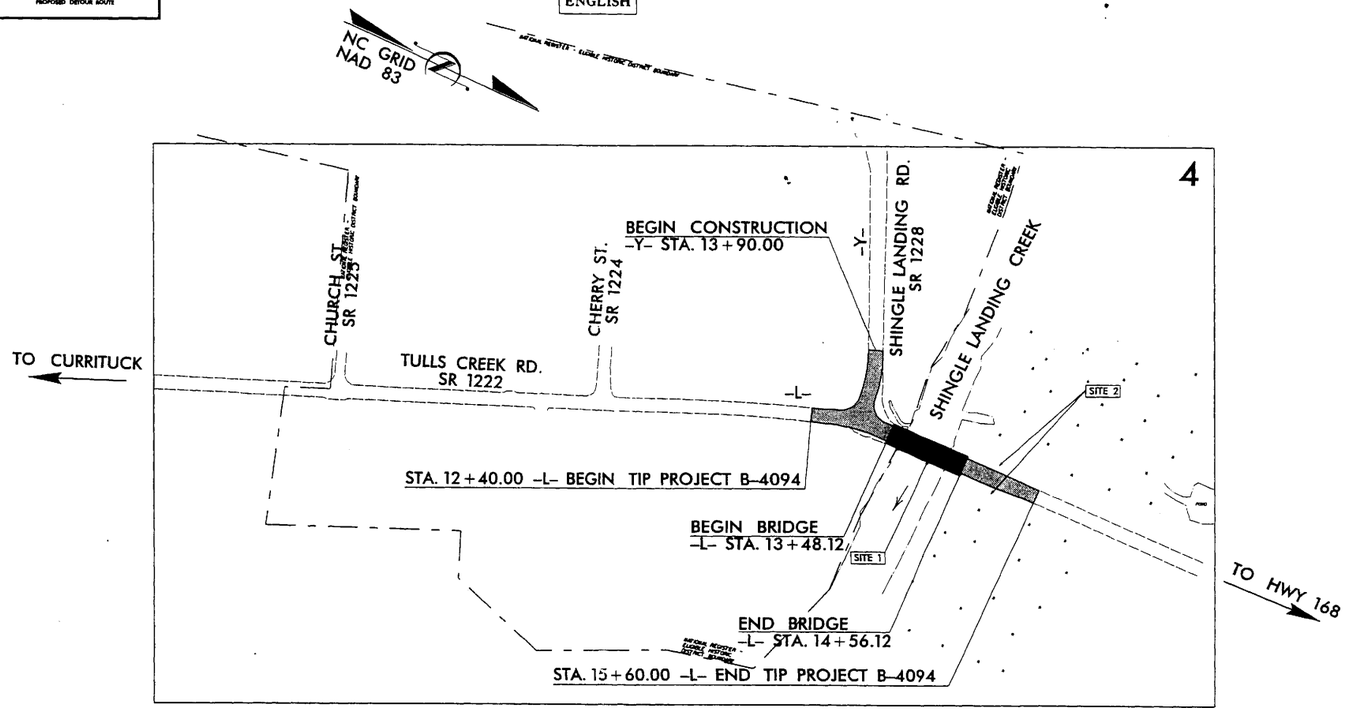
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

LOCATION: BRIDGE NO. 28 OVER SHINGLE LANDING CREEK ON SR 1222

TYPE OF WORK: GRADING, PAVING, DRAINAGE AND STRUCTURE

STREAM & WETLAND IMPACTS

ENGLISH



MULKEY
ENGINEERS & CONSULTANTS
PO Box 33127
Raleigh, N.C. 27636
(919) 851-1912
(919) 851-1918 (FAX)
WWW.MULKEYINC.COM

** Design Exception – Lane Width, Shoulder Width, Bridge Width, Sag Vertical Curve K, Crest Vertical Curve K, Vertical SSD and Horizontal Clearance.

THIS PROJECT IS WITHIN THE MUNICIPAL BOUNDARIES OF MOYOCK.
CLEARING ON THIS PROJECT SHOULD BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD II.

GRAPHIC SCALES

PLANS 50 25 0 50 100

PROFILE (HORIZONTAL) 50 25 0 50 100

PROFILE (VERTICAL) 10 5 0 10 20

DESIGN DATA

ADT 2009 = 2,700
ADT 2030 = 5,600
DHV = 12%
D = 70%
* T = 4%
** V = 35 mph

Func Class = Local Rural

* Duals 3% TTST 1%

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT B-4094 = 0.040 MILE

LENGTH STRUCTURE TIP PROJECT B-4094 = 0.021 MILE

TOTAL LENGTH STATE TIP PROJECT B-4094 = 0.061 MILE

Prepared in the Office of:
Mulkey Engineers & Consultants
FOR THE NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

2006 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: MARCH 21, 2008

LETTING DATE: MARCH 17, 2009

TIM JORDAN, PE
MULKEY E & C PROJECT MANAGER

KEVIN ALFORD, PE
MULKEY E & C HYDRAULICS ENGINEER

NCDOT CONTACT: CATHY S. HOUSER, PE
ROADWAY DESIGN - PROJECT ENGINEER

HYDRAULICS ENGINEER

SIGNATURE: P.E.

ROADWAY DESIGN ENGINEER

SIGNATURE: P.E.

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

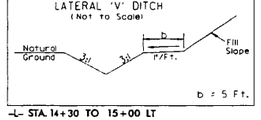
STATE HIGHWAY DESIGN ENGINEER P.E.

1/8/2008
R:\Hydraulics\CADD\Permit\b4094_hyd_prm_wet_tsh.dgn
11:47:55 AM

8/17/99

REVISIONS

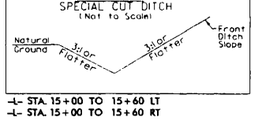
DETAIL A
LATERAL 'V' DITCH
(Not to Scale)



b = 5 Ft.

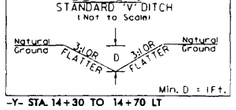
-L- STA. 14+30 TO 15+00 LT
-L- STA. 14+34 TO 15+00 RT

DETAIL B
SPECIAL CUT DITCH
(Not to Scale)



-L- STA. 15+00 TO 15+60 LT
-L- STA. 15+00 TO 15+60 RT
-L- STA. 12+50 TO 12+80 LT
-Y- STA. 13+90 TO 14+30 LT

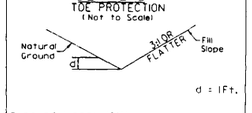
DETAIL C
STANDARD 'V' DITCH
(Not to Scale)



Min. D = 1Ft.

-Y- STA. 14+30 TO 14+70 LT

DETAIL D
TOE PROTECTION
(Not to Scale)



Type of Liner: PSRM
d = 1Ft.

-L- STA. 13+00 TO 13+55 RT

NAD 83
NC GRID

NATIONAL REGISTER - HISTORIC DISTRICT BOUNDARY

MULKEY
ENGINEERS & CONSULTANTS
PO Box 33127
Raleigh, N.C. 27636
(919) 851-1912
(919) 851-1918 (FAX)
www.mulkeyinc.com

PROJECT REFERENCE NO.	SHEET NO.
B-4094	4
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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

FOR -L- PROFILE SEE SHEET 5

Permit Drawing
Sheet 5 of 9

WETLAND / STREAM IMPACTS

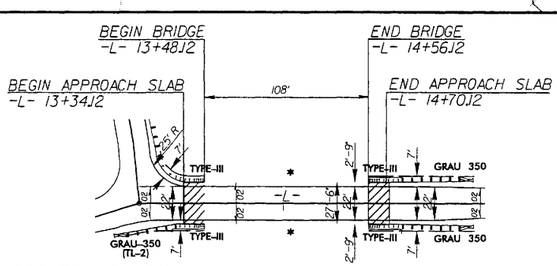
USE METHOD 2 FOR CLEARING AND GRUBBING

F F DENOTES FILL IN WETLAND
E E DENOTES EXCAVATION IN WETLAND
DENOTES MECHANIZED CLEARING
S S DENOTES IMPACTS IN SURFACE WATER

EVELYN BALLANCE CREEKMORE
ROBERT E. LEE
JOSEPHINE MARIA WEST
SARA C. BELL LIFE ESTATE
WINNIE W. HUMPHRIES
MARK ALLEN CHRISTIAN
PHYLLIS H. KITCHIN
OLD BROTHERS, LLC.
MOYOCK BAPTIST CHURCH
CURRITUCK CO. BOARD OF EDUCATION
J. MARTIN JARVIS
GRACE O. POYNER
LENORE E. FERRELL
WILLIAM A. THORN, III
WILLIAM A. THORN, III
JEFFREY LEWIS SHIFLETT
ROBERT DeCASTILLIA
CAROL BALLANCE TYNES

-BL- N 58° 45' 26.2" W
-L- N 32° 38' 15.4" W
-Y-
10+00
15+00
13+00

SPECIAL CUT DITCH SEE DETAIL B
CLASS B RIP RAP EST. 3 TONS EST. 10 SY FIL FAB
STANDARD V DITCH SEE DETAIL C EST. 10 CY DDE
LATERAL V DITCH SEE DETAIL A EST. 15 CY DDE
CLASS B RIP RAP EST. 2 TONS EST. 7 SY FIL FAB
RETAIN
REMOVE EXISTING BRIDGE
SITE 1
SITE 2
CLASS II RIP RAP STRUCTURE PAY ITEM
SHINGLE LANDING CREEK
POND
TOE PROTECTION SEE DETAIL D
BEGIN SHOULDER BERM GUTTER -L- 13+26
END SHOULDER BERM GUTTER -L- 14+78
LATERAL V DITCH SEE DETAIL A EST. 10 CY DDE
SPECIAL CUT DITCH SEE DETAIL B
BM #12
-BL- STA 12+65.04
204.84' RT
ELEV= 3.29'



* 2 BAR METAL RAIL ON BRIDGE

SKETCH SHOWING RELATIONSHIP OF BRIDGE TO PAVEMENT AND SHOULDERS

1/21/2008
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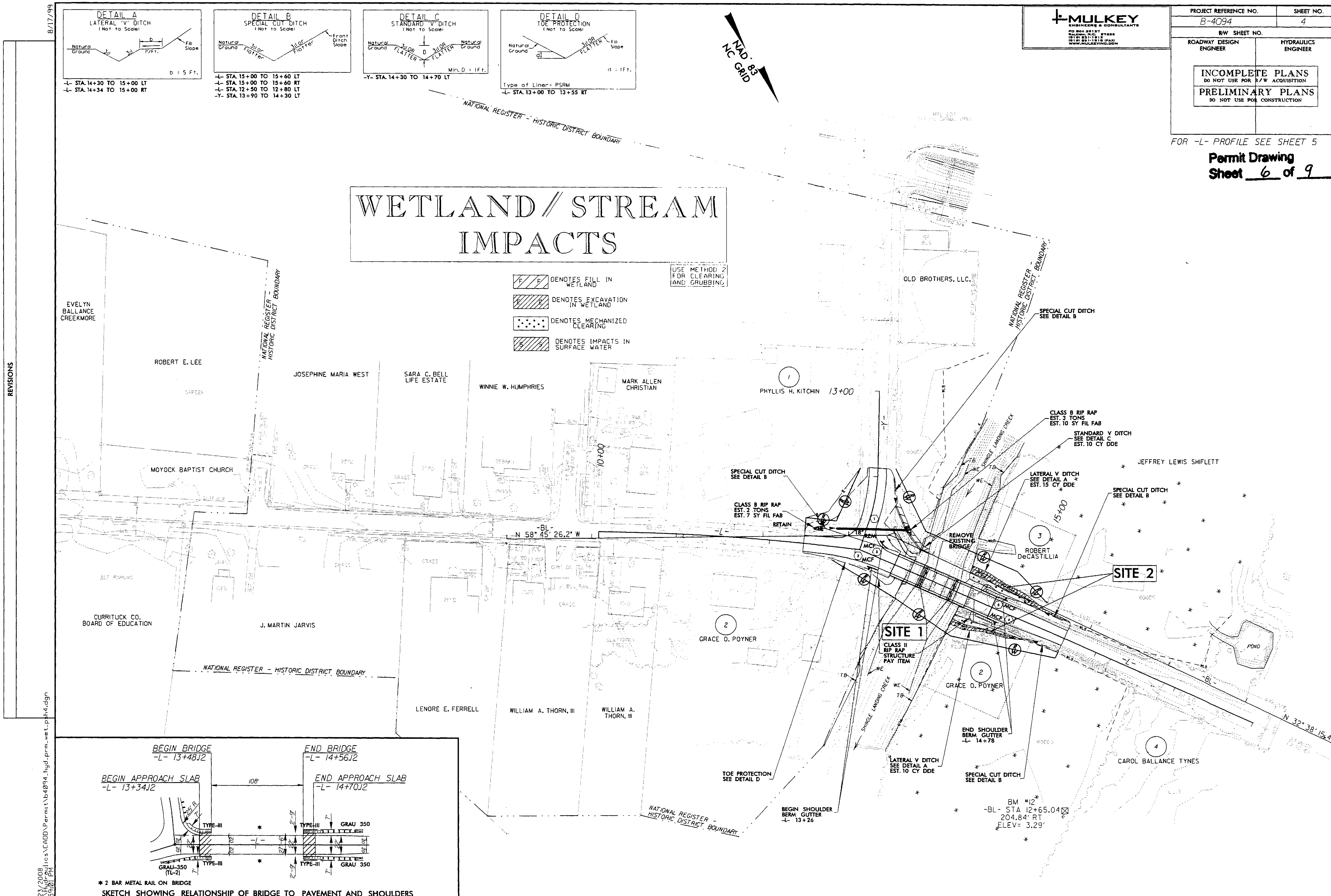


DETAIL A
LATERAL 'V' DITCH
(Not to Scale)
-L- STA. 14+30 TO 15+00 LT
-L- STA. 14+34 TO 15+00 RT
DETAIL B
SPECIAL CUT DITCH
(Not to Scale)
-L- STA. 15+00 TO 15+60 LT
-L- STA. 15+00 TO 15+60 RT
-L- STA. 12+50 TO 12+80 LT
-Y- STA. 13+90 TO 14+30 LT
DETAIL C
STANDARD 'V' DITCH
(Not to Scale)
-Y- STA. 14+30 TO 14+70 LT
DETAIL D
TOE PROTECTION
(Not to Scale)
Type of Liner= PSRM
-L- STA. 13+00 TO 13+55 RT
NAD 83 NC GRID
MULKEY ENGINEERS & CONSULTANTS
PROJECT REFERENCE NO. B-4094
SHEET NO. 4
R/W SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION
FOR -L- PROFILE SEE SHEET 5
Permit Drawing Sheet 6 of 9
WETLAND/ STREAM IMPACTS
DENOTES FILL IN WETLAND
DENOTES EXCAVATION IN WETLAND
DENOTES MECHANIZED CLEARING
DENOTES IMPACTS IN SURFACE WATER
USE METHOD 2 FOR CLEARING AND GRUBBING
NATIONAL REGISTER - HISTORIC DISTRICT BOUNDARY
EVELYN BALLANCE CREEKMORE
ROBERT E. LEE
JOSEPHINE MARIA WEST
SARA C. BELL LIFE ESTATE
WINNIE W. HUMPHRIES
MARK ALLEN CHRISTIAN
PHYLLIS H. KITCHIN
OLD BROTHERS, LLC.
MOYOCK BAPTIST CHURCH
CURRITUCK CO. BOARD OF EDUCATION
J. MARTIN JARVIS
LENORE E. FERRELL
WILLIAM A. THORN, III
GRACE O. POYNER
ROBERT DeCASTILLIA
JEFFREY LEWIS SHIFLETT
CAROL BALLANCE TYNES
N 58° 45' 26.2" W
N 32° 38' 15.4" W
SITE 1
SITE 2
CLASS II RIP RAP STRUCTURE PAY ITEM
CLASS B RIP RAP EST. 3 TONS EST. 10 SY FIL FAB
CLASS B RIP RAP EST. 2 TONS EST. 7 SY FIL FAB
STANDARD V DITCH SEE DETAIL C EST. 10 CY DDE
LATERAL V DITCH SEE DETAIL A EST. 15 CY DDE
LATERAL V DITCH SEE DETAIL A EST. 10 CY DDE
SPECIAL CUT DITCH SEE DETAIL B
REMOVE EXISTING BRIDGE
TOE PROTECTION SEE DETAIL D
BEGIN SHOULDER BERM GUTTER -L- 13+26
END SHOULDER BERM GUTTER -L- 14+78
BM #12 -BL- STA 12+65.04 204.84' RT ELEV= 3.29'
POND
BEGIN BRIDGE -L- 13+48J2
END BRIDGE -L- 14+56J2
BEGIN APPROACH SLAB -L- 13+34J2
END APPROACH SLAB -L- 14+70J2
108'
GRAU 350
TYPE-III
* 2 BAR METAL RAIL ON BRIDGE
SKETCH SHOWING RELATIONSHIP OF BRIDGE TO PAVEMENT AND SHOULDERS
REVISIONS
8/17/99

5/28/99

MULKEY ENGINEERS & CONSULTANTS
PO Box 33127
Raleigh, N.C. 27636
(919) 851-1912
(919) 851-1918 (FAX)
WWW.MULKEYINC.COM

PROJECT REFERENCE NO.	SHEET NO.
B-4094	5
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

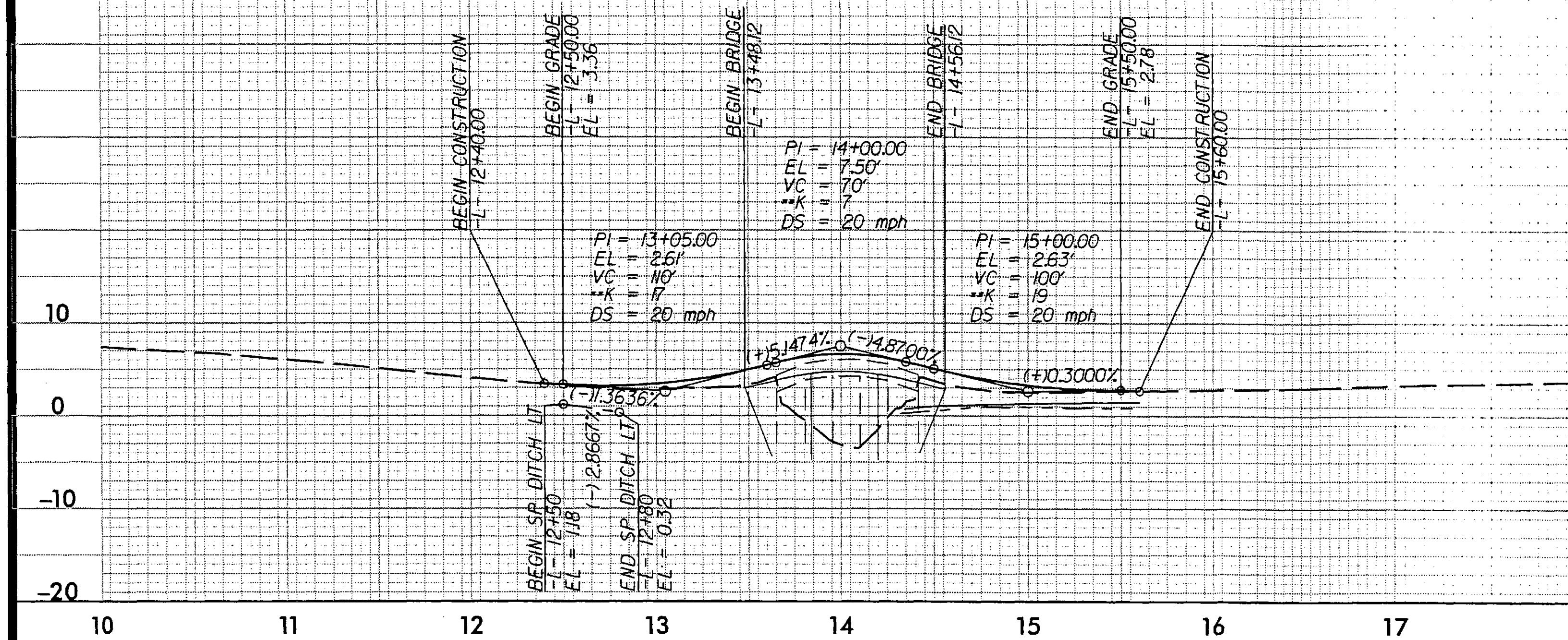
Permit Drawing
Sheet 7 of 9

-L-

BM-#12
RAILROAD SPIKE IN 15" CYPRESS
-BL- 12+65.04 204.84' RT
EL = 3.29'

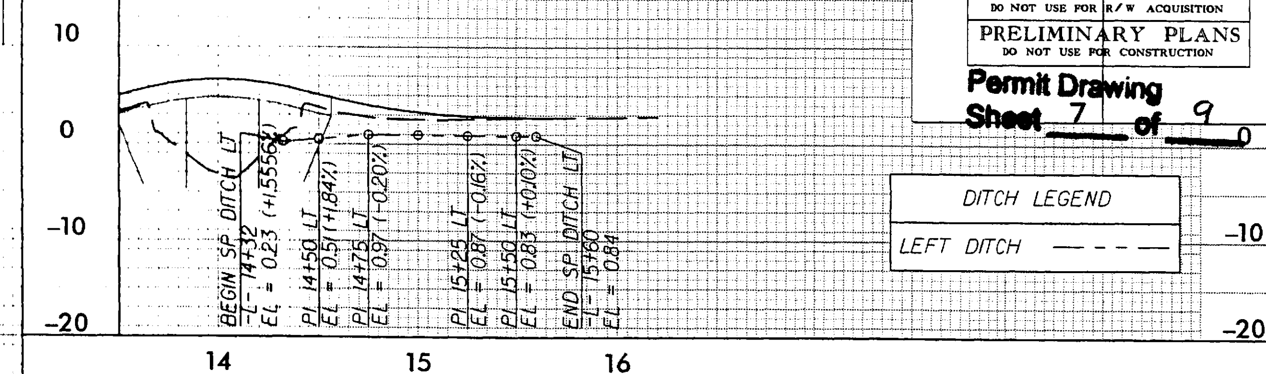
FOR -L- PLAN VIEW SEE SHEET 4

**DESIGN EXCEPTION - SAG VERTICAL CURVE K AND CREST VERTICAL CURVE K



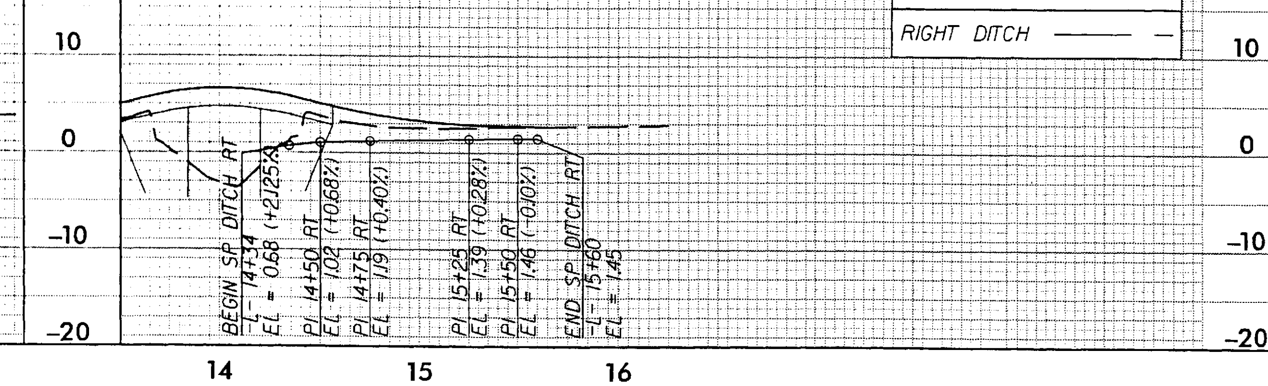
DITCH LEGEND

LEFT DITCH – – – –



DITCH LEGEND

RIGHT DITCH ——— –

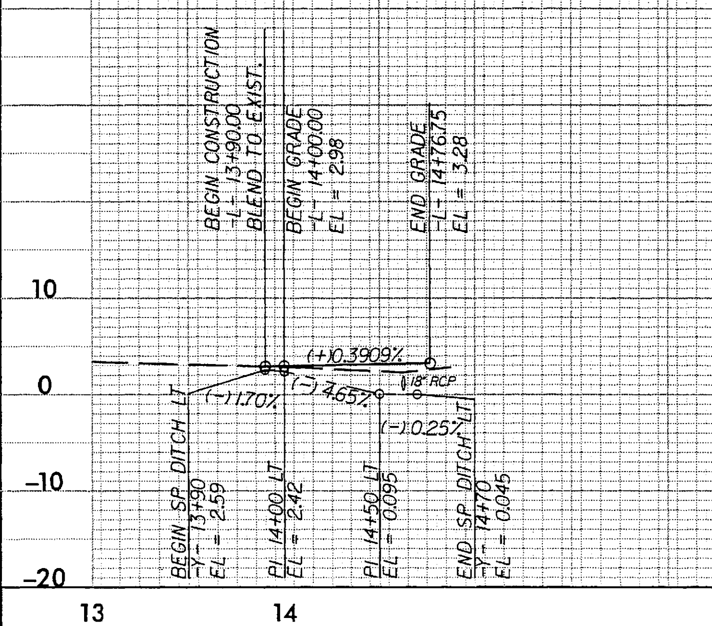


BRIDGE HYDRAULIC DATA

DESIGN DISCHARGE	= 1060	CFS
DESIGN FREQUENCY	= 25	YRS
DESIGN HW ELEVATION	= 3.1	FT
BASE DISCHARGE	= 1860	CFS
BASE FREQUENCY	= 100	YRS
BASE HW ELEVATION	= 4.5	FT
OVERTOPPING DISCHARGE	= 950	CFS
OVERTOPPING FREQUENCY	= 10+	YRS
OVERTOPPING ELEVATION	= 2.77	FT
DATE OF SURVEY	= 2/6/07	
W.S. ELEVATION AT DATE OF SURVEY	= 0.3	

-Y-

FOR -Y- PLAN VIEW SEE SHEET 4



PIPE HYDRAULIC DATA

DRAINAGE STRUCTURE NO.

DRAINAGE AREA	= 3.2	AC
DESIGN FREQUENCY	= 25	YRS
DESIGN DISCHARGE	= 8.6	CFS
DESIGN HW ELEVATION	= 2.2	FT
100 YEAR DISCHARGE	= 10.3	CFS
100 YEAR HW ELEVATION	= 2.5	FT
OVERTOPPING FREQUENCY	= 500+	YRS
OVERTOPPING DISCHARGE	= 13	CFS
OVERTOPPING ELEVATION	= 3.0	FT

1/18/2008
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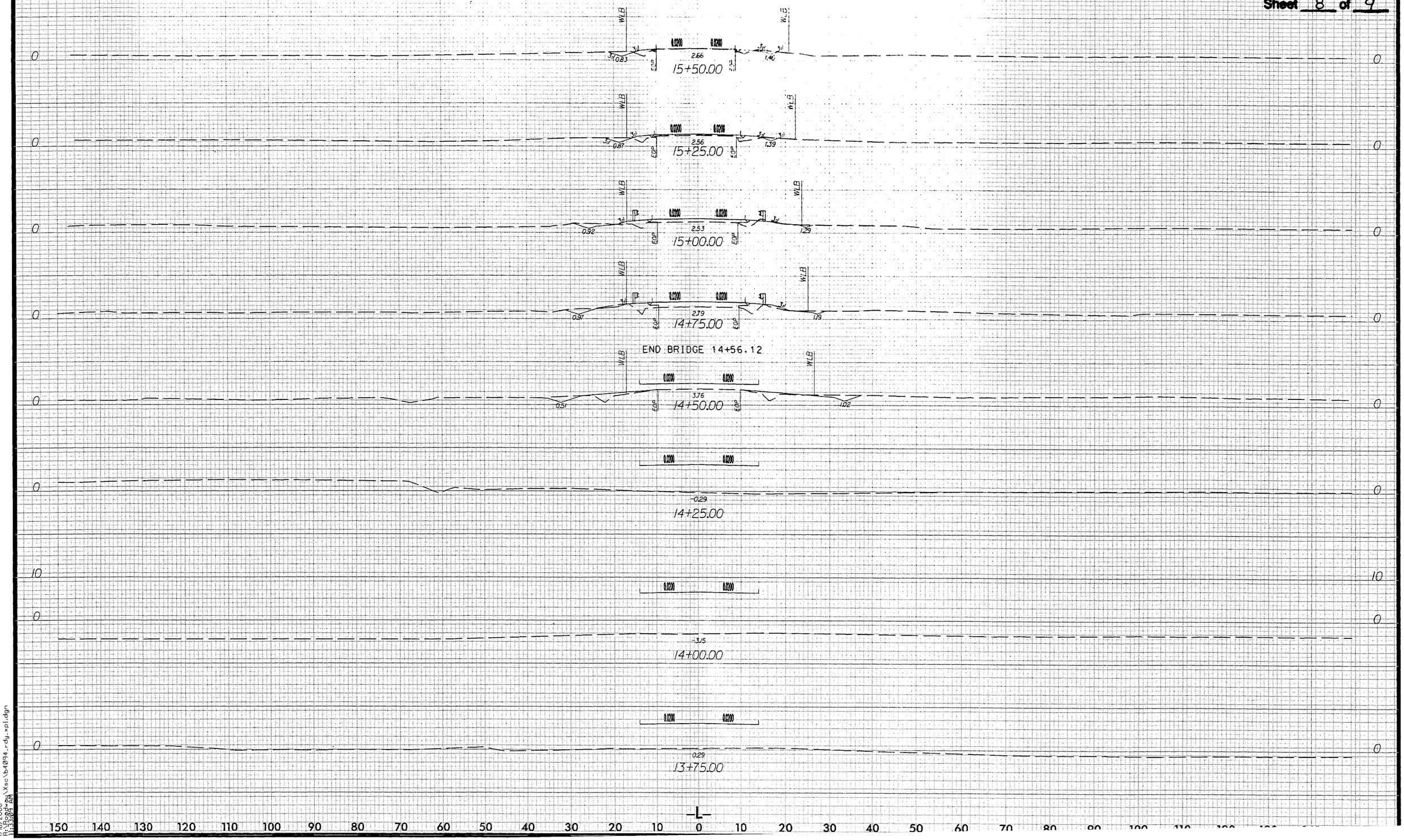
8/23/99

PROJ. REFERENCE NO.	SHEET NO.
B-4094	X-3

0 5 10

Permit Drawing
Sheet 8 of 9

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150



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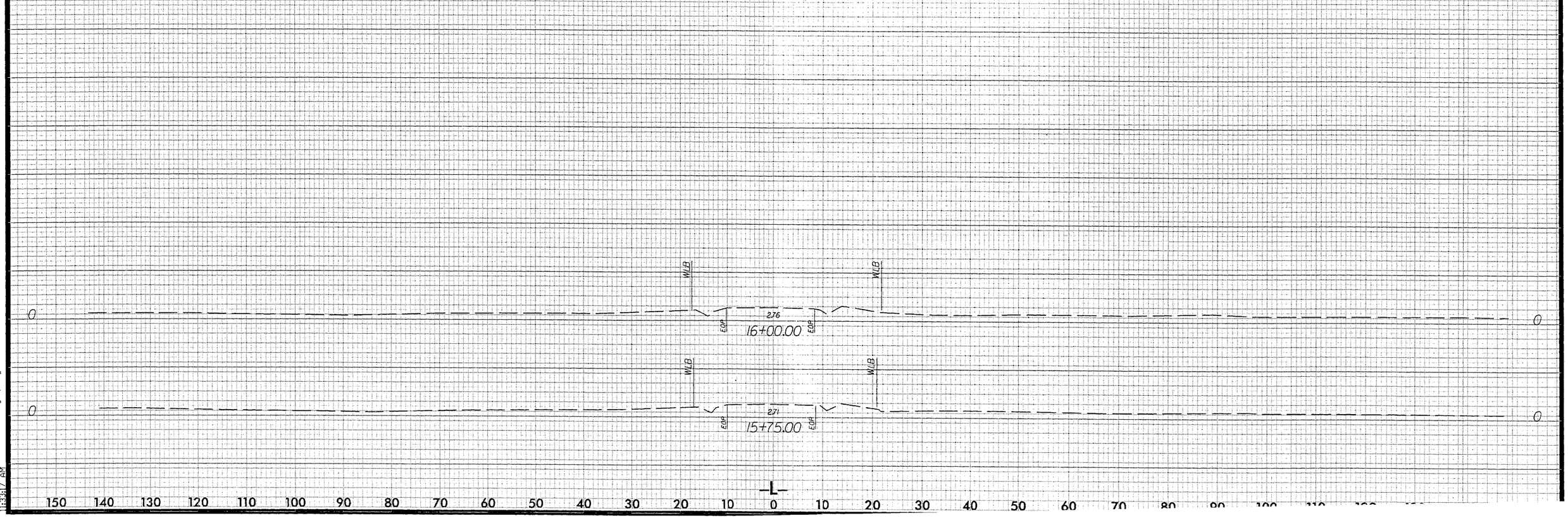
8/23/99

0 5 10

PROJ. REFERENCE NO.	SHEET NO.
B-4094	X-4

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

Permit Drawing
Sheet 9 **of** 9



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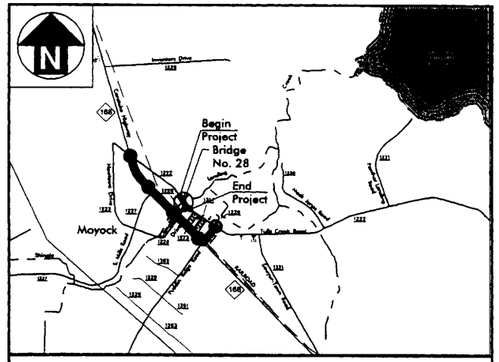


STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CURRITUCK COUNTY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4094	1	

W.B.S. ELEMENT	F. A. PROJ. NO.	DESCRIPTION
33452.1.1	BRZ-1222(6)	P.E.
33452.2.1	BRZ-1222(6)	UTL /R/W

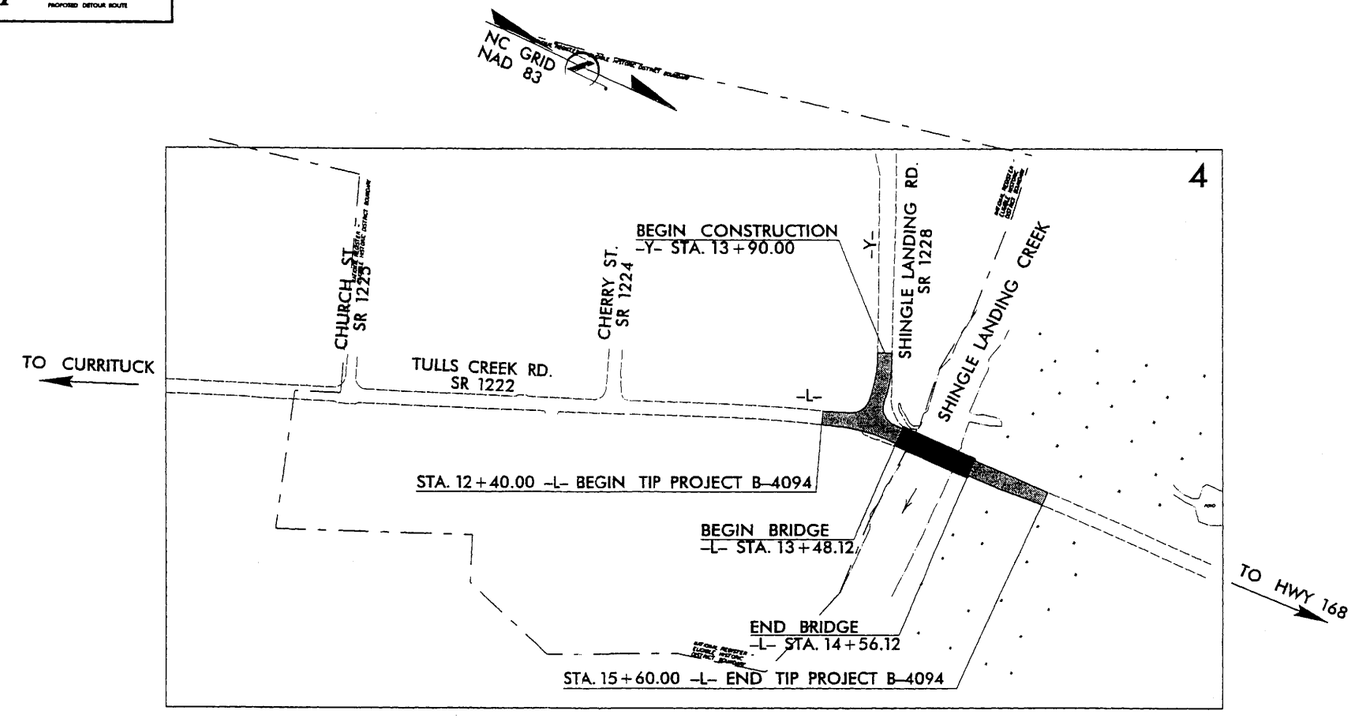
LOCATION: BRIDGE NO. 28 OVER SHINGLE LANDING CREEK ON SR 1222

TYPE OF WORK: GRADING, PAVING, DRAINAGE AND STRUCTURE

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

UTILITY
Permit Drawing
Sheet 1 of 5



MULKEY
ENGINEERS & CONSULTANTS
PO Box 33127
RALEIGH, N.C. 27636
(919) 851-1912
(919) 851-1918 (FAX)
WWW.MULKEYINC.COM

** Design Exception – Lane Width, Shoulder Width, Bridge Width, Sag Vertical Curve K, Crest Vertical Curve K, Vertical SSD and Horizontal Clearance.

THIS PROJECT IS WITHIN THE MUNICIPAL BOUNDARIES OF MOYOCK.
CLEARING ON THIS PROJECT SHOULD BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD II.

GRAPHIC SCALES

50 25 0 50 100
PLANS

50 25 0 50 100
PROFILE (HORIZONTAL)

10 5 0 10 20
PROFILE (VERTICAL)

DESIGN DATA

ADT 2009 = 2,700
ADT 2030 = 5,600
DHV = 12%
D = 70%
* T = 4%
** V = 35 mph
Func Class = Local Rural
* Duals 3% TTST 1%

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT B-4094 = 0.040 MILE

LENGTH STRUCTURE TIP PROJECT B-4094 = 0.021 MILE

TOTAL LENGTH STATE TIP PROJECT B-4094 = 0.061 MILE

Prepared In the Office of:
Mulkey Engineers & Consultants
FOR THE NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

2006 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: MARCH 21, 2008

LETTING DATE: MARCH 17, 2009

TIM JORDAN, PE
MULKEY E & C PROJECT MANAGER

KEVIN ALFORD, PE
MULKEY E & C HYDRAULICS ENGINEER

NCDOT CONTACT: CATHY S. HOUSER, PE
ROADWAY DESIGN - PROJECT ENGINEER

HYDRAULICS ENGINEER

P.E.
SIGNATURE:

ROADWAY DESIGN ENGINEER

P.E.
SIGNATURE:

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

P.E.
STATE HIGHWAY DESIGN ENGINEER

CONTRACT:

TIP PROJECT: B-4094

JUL 22 2008

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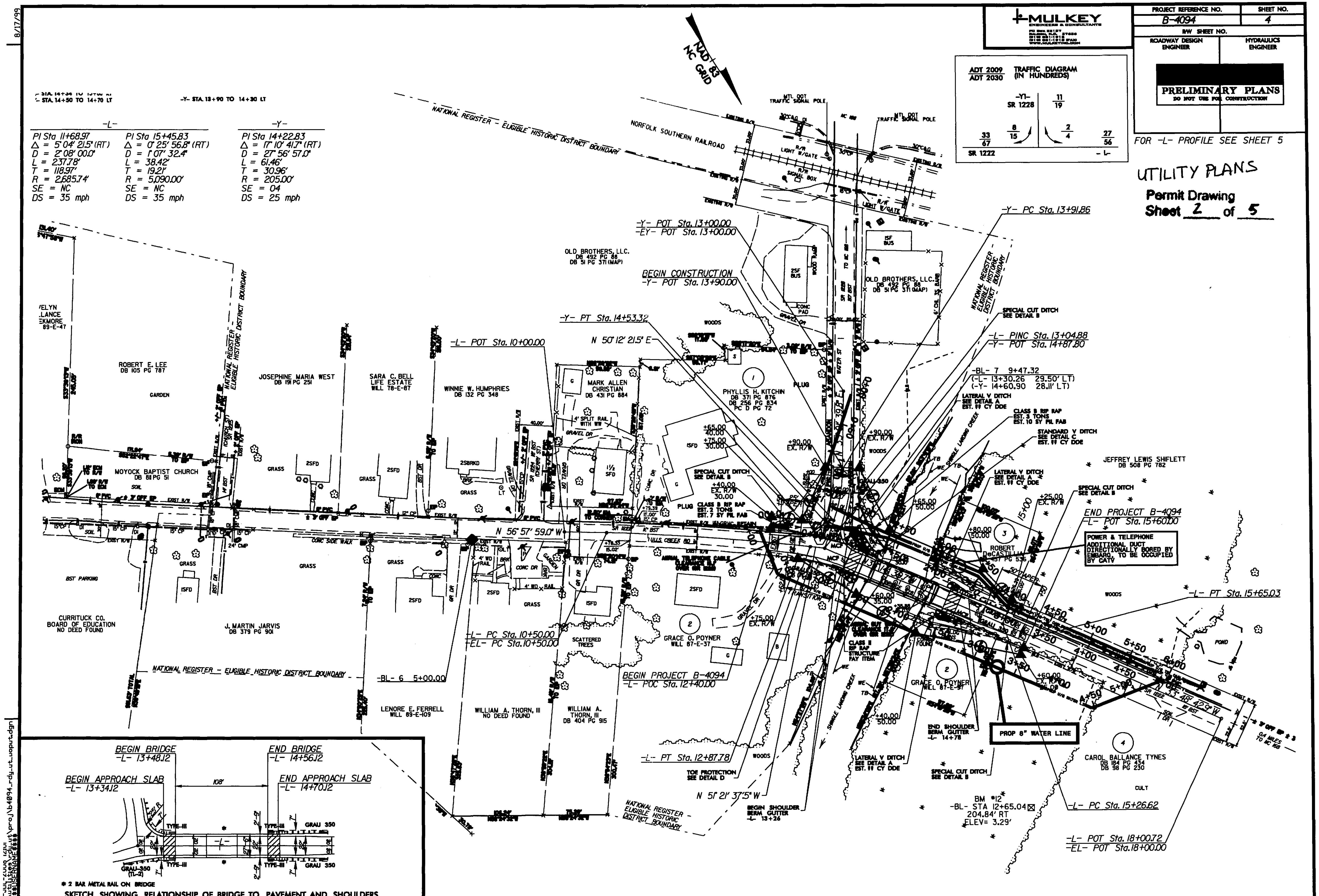
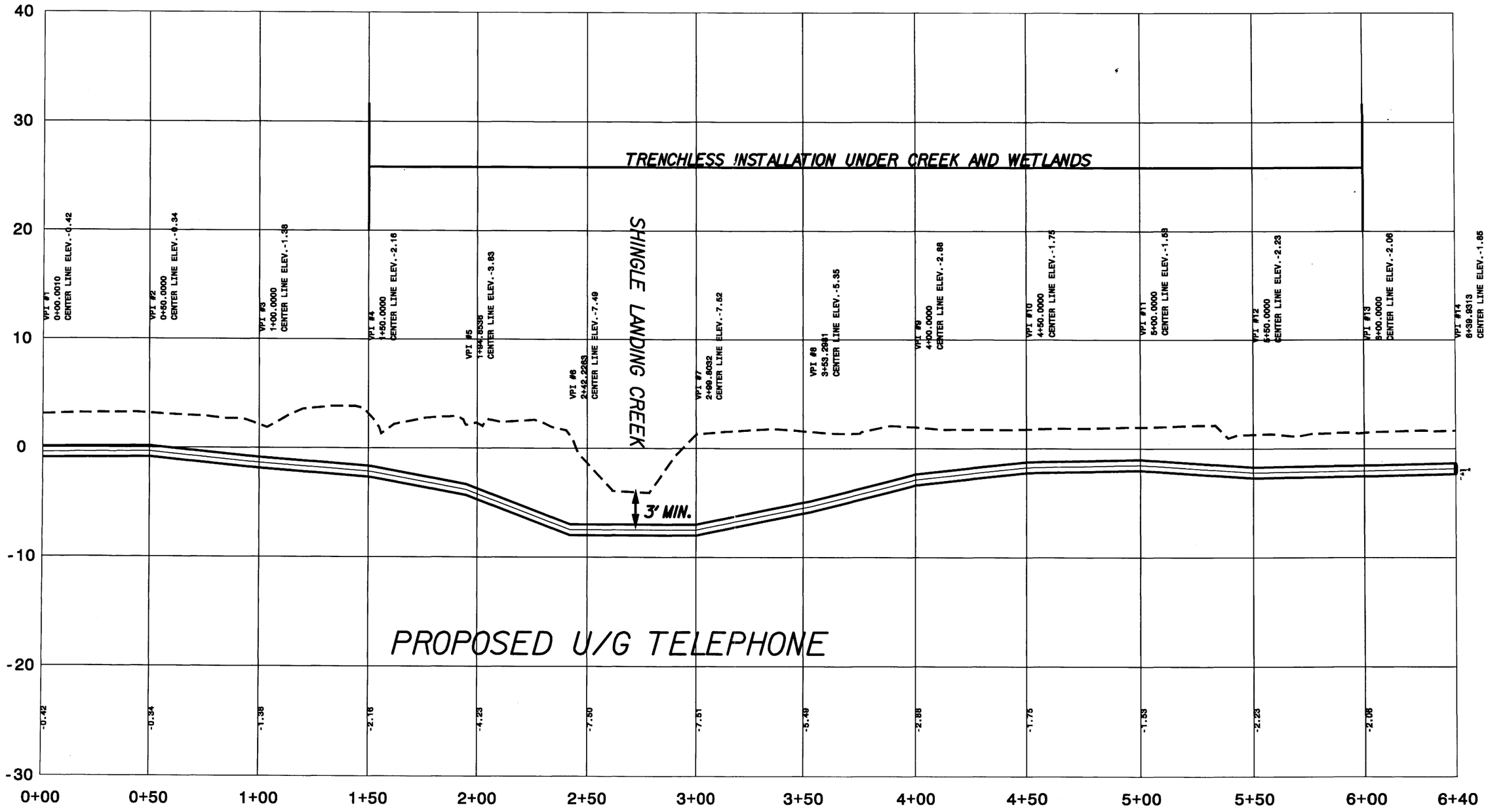

MULKEY ENGINEERS & CONSULTANTS
PROJECT REFERENCE NO. B-4094
SHEET NO. 4
R/W SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION
FOR -L- PROFILE SEE SHEET 5
UTILITY PLANS
Permit Drawing
Sheet 2 of 5
ADT 2009 ADT 2030 TRAFFIC DIAGRAM (IN HUNDREDS)
-Y1- SR 1228
SR 1222
-L-
NAD 83 NC GRID
-L-
PI Sta 11+68.97
Δ = 5° 04' 21.5" (RT)
D = 2° 08' 00.0"
L = 237.78'
T = 118.97'
R = 2,685.74'
SE = NC
DS = 35 mph
PI Sta 15+45.83
Δ = 0° 25' 56.8" (RT)
D = 1° 07' 32.4"
L = 38.42'
T = 19.21'
R = 5,090.00'
SE = NC
DS = 35 mph
-Y-
PI Sta 14+22.83
Δ = 17° 10' 41.7" (RT)
D = 27° 56' 57.0"
L = 61.46'
T = 30.96'
R = 205.00'
SE = 04
DS = 25 mph
-Y- STA. 13+90 TO 14+30 LT
STA. 14+50 TO 14+70 LT
NATIONAL REGISTER - ELIGIBLE HISTORIC DISTRICT BOUNDARY
NORFOLK SOUTHERN RAILROAD
NCDOT TRAFFIC SIGNAL POLE
-Y- POT Sta. 13+00.00
-EY- POT Sta. 13+00.00
BEGIN CONSTRUCTION
-Y- POT Sta. 13+90.00
-Y- PT Sta. 14+53.32
N 50° 12' 21.5" E
-L- POT Sta. 10+00.00
-Y- PC Sta. 13+91.86
OLD BROTHERS, LLC. DB 492 PG 88 DB 51 PG 371 (MAP)
-L- PINC Sta. 13+04.88
-Y- POT Sta. 14+87.80
-BL- 7 9+47.32
(-L- 13+30.26 29.50' LT)
(-Y- 14+60.90 28.11' LT)
ROBERT E. LEE DB 105 PG 787
JOSEPHINE MARIA WEST DB 191 PG 251
SARA C. BELL LIFE ESTATE WILL 78-E-87
WINNIE W. HUMPHRIES DB 132 PG 348
MARK ALLEN CHRISTIAN DB 431 PG 884
PHYLLIS H. KITCHIN DB 371 PG 876 DB 256 PG 834 PC D PG 72
MOYOCK BAPTIST CHURCH DB 88 PG 51
JEFFREY LEWIS SHIFLETT DB 508 PG 782
N 56° 57' 59.0" W
END PROJECT B-4094
-L- POT Sta. 15+60.00
POWER & TELEPHONE ADDITIONAL DUCT DIRECTIONALLY BORED BY EMBARQ, TO BE OCCUPIED BY CATV
-L- PT Sta. 15+65.03
CURRITUCK CO. BOARD OF EDUCATION NO DEED FOUND
J. MARTIN JARVIS DB 379 PG 901
-L- PC Sta. 10+50.00
-EL- PC Sta. 10+50.00
GRACE O. POYNER WILL 87-E-37
BEGIN PROJECT B-4094
-L- POC Sta. 12+40.00
-BL- 6 5+00.00
LENORE E. FERRELL WILL 89-E-109
WILLIAM A. THORN, III NO DEED FOUND
WILLIAM A. THORN, III DB 404 PG 915
-L- PT Sta. 12+87.78
N 51° 21' 37.5" W
PROP 8" WATER LINE
CAROL BALLANCE TYNES DB 184 PG 434 DB 98 PG 230
BM #12
-BL- STA 12+65.04
204.84' RT
ELEV= 3.29'
-L- PC Sta. 15+26.62
-L- POT Sta. 18+00.72
-EL- POT Sta. 18+00.00
BEGIN BRIDGE -L- 13+48.12
END BRIDGE -L- 14+56.12
BEGIN APPROACH SLAB -L- 13+34.12
END APPROACH SLAB -L- 14+70.12
108'
* 2 BAR METAL RAIL ON BRIDGE
SKETCH SHOWING RELATIONSHIP OF BRIDGE TO PAVEMENT AND SHOULDERS
JUL 22 2008
8/17/99

Utility
Permit Drawing
Sheet 3 of 5



JUL 22 2004

UTILITY
Permit Drawing
Sheet 4 of 5

TRENCHLESS INSTALLATION UNDER CREEK AND WETLANDS

SHINGLE LANDING CREEK

PROPOSED U/G POWER

VPI #1
0+00.0010
CENTER LINE ELEV.-0.66

VPI #2
0+50.0000
CENTER LINE ELEV.-1.74

VPI #3
1+01.8289
CENTER LINE ELEV.-4.06

VPI #4
1+37.1998
CENTER LINE ELEV.-7.58

VPI #5
2+00.2357
CENTER LINE ELEV.-7.58

VPI #6
2+57.4607
CENTER LINE ELEV.-3.53

VPI #7
3+00.0000
CENTER LINE ELEV.-1.57

VPI #8
3+50.0000
CENTER LINE ELEV.-1.55

VPI #9
4+00.0000
CENTER LINE ELEV.-1.27

VPI #10
4+50.0000
CENTER LINE ELEV.-2.13

VPI #11
5+00.0000
CENTER LINE ELEV.-2.22

VPI #12
5+38.5248
CENTER LINE ELEV.-1.85

40
30
20
10
0
-10
-20
-30

0+00 0+50 1+00 1+50 2+00 2+50 3+00 3+50 4+00 4+50 5+00 5+39

-0.66 -1.74 -3.98 -7.58 -7.58 -4.06 -1.57 -1.55 -1.27 -2.13 -2.22

JUL 22 2006

UTILITY
Permit Drawing
Sheet 5 of 5

TRENCHLESS INSTALLATION UNDER CREEK AND WETLANDS

SHINGLE LANDING CREEK

VPI #1
0+00.0010
CENTER LINE ELEV.-0.10

VPI #2
0+50.0000
CENTER LINE ELEV.0.05

VPI #3
0+97.9807
CENTER LINE ELEV.-1.73

VPI #4
1+46.3330
CENTER LINE ELEV.-2.76

VPI #5
1+88.2903
CENTER LINE ELEV.-5.33

VPI #6
1+94.0335
CENTER LINE ELEV.-7.50

VPI #7
2+22.2347
CENTER LINE ELEV.-7.50

VPI #8
2+56.3970
CENTER LINE ELEV.-4.67

VPI #9
3+00.0000
CENTER LINE ELEV.-2.23

VPI #10
3+50.0000
CENTER LINE ELEV.-2.13

VPI #11
4+00.0000
CENTER LINE ELEV.-1.98

VPI #12
4+50.0000
CENTER LINE ELEV.-0.53

VPI #13
5+00.0000
CENTER LINE ELEV.-0.17

VPI #14
5+36.2076
CENTER LINE ELEV.-1.00

3" MIN.

PROPOSED U/G 8" WATER LINE

0.05 -1.77 -3.18 -7.50 -5.12 -2.23 -2.13 -1.98 -0.53 -0.17

40
30
20
10
0
-10
-20
-30

0+00 0+50 1+00 1+50 2+00 2+50 3+00 3+50 4+00 4+50 5+00 5+36

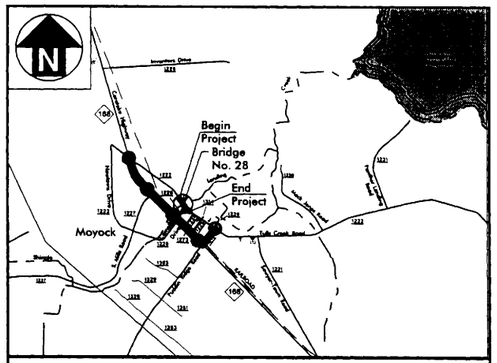
JUL 22 2008

09/08/99

TIP PROJECT: B-4094

CONTRACT:

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



STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CURRITUCK COUNTY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4094	1	

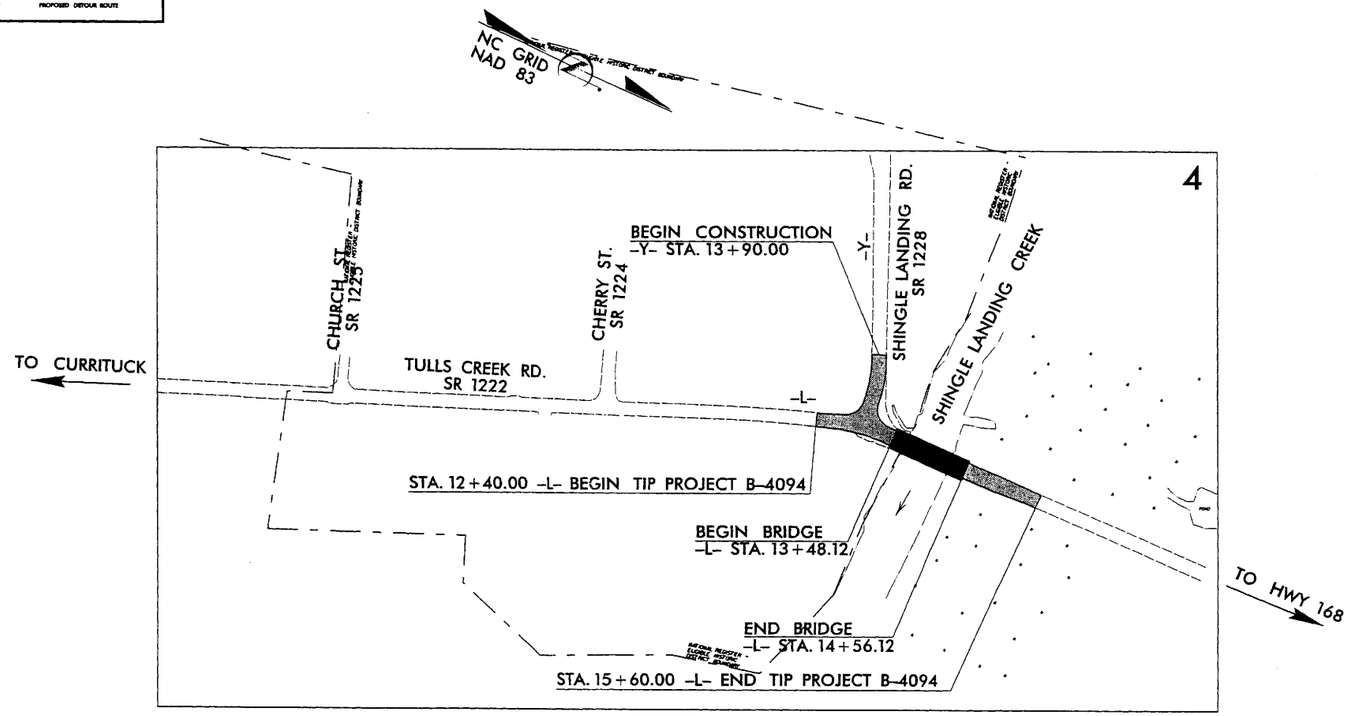
W.B. ELEMENT	F. A. PROJ. NO.	DESCRIPTION
33452.1.1	BRZ-1222(6)	P.E.
33452.2.1	BRZ-1222(6)	UTL /R/W

LOCATION: BRIDGE NO. 28 OVER SHINGLE LANDING CREEK ON SR 1222

TYPE OF WORK: GRADING, PAVING, DRAINAGE AND STRUCTURE

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION



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www.mulkeyinc.com

** Design Exception – Lane Width, Shoulder Width, Bridge Width, Sag Vertical Curve K, Crest Vertical Curve K, Vertical SSD and Horizontal Clearance.

THIS PROJECT IS WITHIN THE MUNICIPAL BOUNDARIES OF MOYOCK.
CLEARING ON THIS PROJECT SHOULD BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD II.

GRAPHIC SCALES

50 25 0 50 100
PLANS

50 25 0 50 100
PROFILE (HORIZONTAL)

10 5 0 10 20
PROFILE (VERTICAL)

DESIGN DATA

ADT 2009 = 2,700
ADT 2030 = 5,600
DHV = 12%
D = 70%
* T = 4%
** V = 35 mph
Func Class = Local Rural
* Duals 3% TTST 1%

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT B-4094 = 0.040 MILE

LENGTH STRUCTURE TIP PROJECT B-4094 = 0.021 MILE

TOTAL LENGTH STATE TIP PROJECT B-4094 = 0.061 MILE

Prepared in the Office of:
Mulkey Engineers & Consultants
FOR THE NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

2006 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
MARCH 21, 2008

LETTING DATE:
MARCH 17, 2009

TIM JORDAN, PE
MULKEY E & C PROJECT MANAGER

KEVIN ALFORD, PE
MULKEY E & C HYDRAULICS ENGINEER

NCDOT CONTACT: CATHY S. HOUSER, PE
ROADWAY DESIGN – PROJECT ENGINEER

HYDRAULICS ENGINEER

SIGNATURE: P.E.

ROADWAY DESIGN ENGINEER

SIGNATURE: P.E.

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

STATE HIGHWAY DESIGN ENGINEER P.E.

1/8/2008
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3/15/06

PROJECT REFERENCE NO.	SHEET NO.
B-4094	1-B

Note: Not to Scale

S.U.E. = Subsurface Utility Engineering

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CONVENTIONAL PLAN SHEET SYMBOLS

BOUNDARIES AND PROPERTY:

- State Line
- County Line
- Township Line
- City Line
- Reservation Line
- Property Line
- Existing Iron Pin — EIP
- Property Corner
- Property Monument — EPM
- Parcel/Sequence Number — 123
- Existing Fence Line
- Proposed Woven Wire Fence
- Proposed Chain Link Fence
- Proposed Barbed Wire Fence
- Existing Wetland Boundary — WLB
- Proposed Wetland Boundary — WLB
- Existing Endangered Animal Boundary — EAB
- Existing Endangered Plant Boundary — EPB

BUILDINGS AND OTHER CULTURE:

- Gas Pump Vent or U/G Tank Cap
- Sign — S
- Well — W
- Small Mine
- Foundation
- Area Outline
- Cemetery
- Building
- School
- Church
- Dam

HYDROLOGY:

- Stream or Body of Water
- Hydro, Pool or Reservoir
- Jurisdictional Stream — JS
- Buffer Zone 1 — BZ 1
- Buffer Zone 2 — BZ 2
- Flow Arrow
- Disappearing Stream
- Spring
- Wetland
- Proposed Lateral, Tail, Head Ditch — FLOW
- False Sump

RAILROADS:

- Standard Gauge — CSX TRANSPORTATION
- RR Signal Milepost — MILEPOST 35
- Switch — SWITCH
- RR Abandoned
- RR Dismantled

RIGHT OF WAY:

- Baseline Control Point
- Existing Right of Way Marker
- Existing Right of Way Line
- Proposed Right of Way Line — RW
- Proposed Right of Way Line with Iron Pin and Cap Marker — RW
- Proposed Right of Way Line with Concrete or Granite Marker — RW
- Existing Control of Access — CA
- Proposed Control of Access — CA
- Existing Easement Line — E
- Proposed Temporary Construction Easement — E
- Proposed Temporary Drainage Easement — TDE
- Proposed Permanent Drainage Easement — PDE
- Proposed Permanent Utility Easement — PUE

ROADS AND RELATED FEATURES:

- Existing Edge of Pavement
- Existing Curb
- Proposed Slope Stakes Cut — C
- Proposed Slope Stakes Fill — F
- Proposed Wheel Chair Ramp — WCR
- Proposed Wheel Chair Ramp Curb Cut — WCC
- Curb Cut for Future Wheel Chair Ramp — CCFR
- Existing Metal Guardrail
- Proposed Guardrail
- Existing Cable Guiderail
- Proposed Cable Guiderail
- Equality Symbol
- Pavement Removal

VEGETATION:

- Single Tree
- Single Shrub
- Hedge
- Woods Line
- Orchard
- Vineyard — Vineyard

EXISTING STRUCTURES:

MAJOR:

- Bridge, Tunnel or Box Culvert — CONC
- Bridge Wing Wall, Head Wall and End Wall — CONC WW

MINOR:

- Head and End Wall — CONC HW
- Pipe Culvert
- Footbridge
- Drainage Box: Catch Basin, DI or JB — CB
- Paved Ditch Gutter
- Storm Sewer Manhole — S
- Storm Sewer — S

UTILITIES:

POWER:

- Existing Power Pole
- Proposed Power Pole
- Existing Joint Use Pole
- Proposed Joint Use Pole
- Power Manhole — P
- Power Line Tower
- Power Transformer
- U/G Power Cable Hand Hole — PH
- H-Frame Pole
- Recorded U/G Power Line — P
- Designated U/G Power Line (S.U.E.*) — P

TELEPHONE:

- Existing Telephone Pole
- Proposed Telephone Pole
- Telephone Manhole — T
- Telephone Booth
- Telephone Pedestal — T
- Telephone Cell Tower
- U/G Telephone Cable Hand Hole — PH
- Recorded U/G Telephone Cable — T
- Designated U/G Telephone Cable (S.U.E.*) — T
- Recorded U/G Telephone Conduit — TC
- Designated U/G Telephone Conduit (S.U.E.*) — TC
- Recorded U/G Fiber Optics Cable — T FO
- Designated U/G Fiber Optics Cable (S.U.E.*) — T FO

WATER:

- Water Manhole — W
- Water Meter
- Water Valve
- Water Hydrant
- Recorded U/G Water Line — W
- Designated U/G Water Line (S.U.E.*) — W
- Above Ground Water Line — A/G Water

TV:

- TV Satellite Dish
- TV Pedestal — C
- TV Tower
- U/G TV Cable Hand Hole — PH
- Recorded U/G TV Cable — TV
- Designated U/G TV Cable (S.U.E.*) — TV
- Recorded U/G Fiber Optic Cable — TV FO
- Designated U/G Fiber Optic Cable (S.U.E.*) — TV FO

GAS:

- Gas Valve
- Gas Meter
- Recorded U/G Gas Line — G
- Designated U/G Gas Line (S.U.E.*) — G
- Above Ground Gas Line — A/G Gas

SANITARY SEWER:

- Sanitary Sewer Manhole — SS
- Sanitary Sewer Cleanout
- U/G Sanitary Sewer Line — SS
- Above Ground Sanitary Sewer — A/G Sanitary Sewer
- Recorded SS Forced Main Line — FSS
- Designated SS Forced Main Line (S.U.E.*) — FSS

MISCELLANEOUS:

- Utility Pole
- Utility Pole with Base
- Utility Located Object
- Utility Traffic Signal Box — S
- Utility Unknown U/G Line — ?U/L?
- U/G Tank; Water, Gas, Oil
- A/G Tank; Water, Gas, Oil
- U/G Test Hole (S.U.E.*)
- Abandoned According to Utility Records — AATUR
- End of Information — E.O.I.

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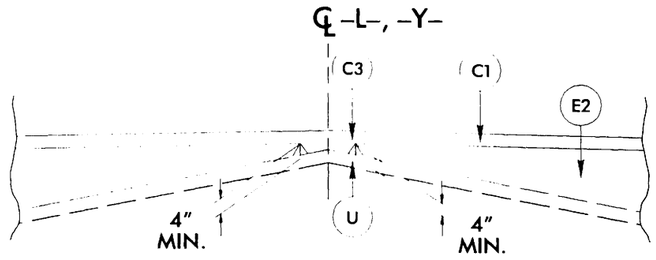
PROJECT REFERENCE NO.	SHEET NO.
B-4094	2
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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

PAVEMENT SCHEDULE
(FINAL PAVEMENT DESIGN)

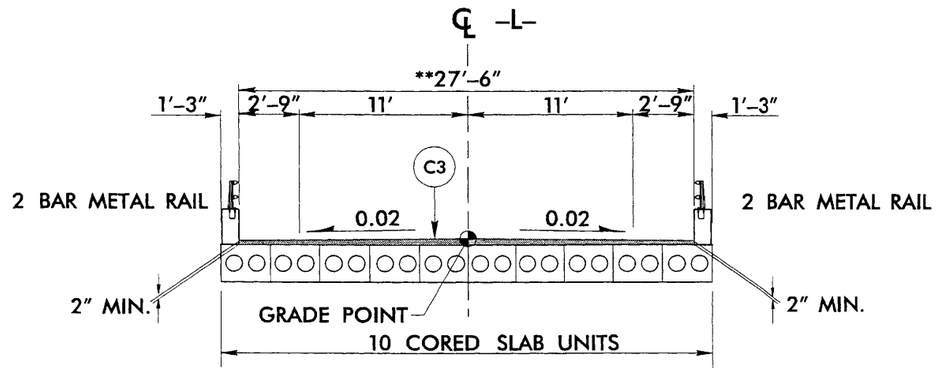
C1	PROP. APPROX. 1¼" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 137.5 LBS. PER SQ. YD.
C2	PROP. APPROX. 2.5" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 137.5 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
C3	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 110 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 1" IN DEPTH OR GREATER THAN 2" IN DEPTH.
E1	PROP. APPROX. 5" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 570 LBS. PER SQ. YD.
E2	PROP. VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 4" IN DEPTH OR GREATER THAN 5½" IN DEPTH.
T	EARTH MATERIAL.
U	EXISTING PAVEMENT.
W	VARIABLE DEPTH ASPHALT PAVEMENT (SEE STANDARD WEDGING DETAIL)

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



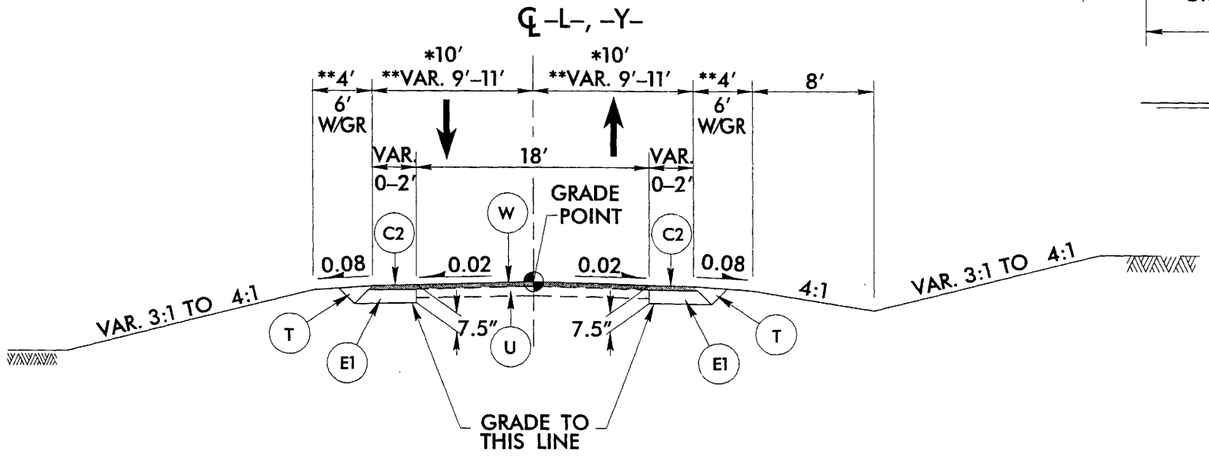
DETAIL SHOWING METHOD OF WEDGING

USE IN CONJUCTION WITH TYPICAL SECTION NO. 1



DETAIL OF BRIDGE

-L- STA 13+48.12 TO STA 14+56.12



TYPICAL SECTION NO. 1

USE TYPICAL SECTION NO. 1
AT THE FOLLOWING LOCATIONS

TRANSITION FROM EXISTING TO T.S. NO. 1 FROM
-L- STA. 11+50.00 TO STA. 12+00.00
-Y- STA. 13+00.00 TO STA. 13+50.00

-L- STA. 12+00.00 TO STA. 13+48.12 (BEGIN BRIDGE)
-L- STA. 14+56.12 (END BRIDGE) TO STA 15+50.00
* -Y- STA. 13+50 TO STA. 14+76.80

TRANSITION FROM T.S. NO. 1 TO EXISTING
-L- STA. 15+50.00 TO STA. 16+00.00

**DESIGN EXCEPTION – LANE WIDTH, SHOULDER WIDTH AND BRIDGE WIDTH

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PROJECT REFERENCE NO.	SHEET NO.
B-4094	4
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

FOR -L- PROFILE SEE SHEET 5

MULKEY ENGINEERS & CONSULTANTS

REVISIONS

DETAIL A
LATERAL 'V' DITCH
(Not to Scale)
d = 5 Ft.
-L- STA. 14+30 TO 15+00 LT
-L- STA. 14+34 TO 15+00 RT

DETAIL B
SPECIAL CUT DITCH
(Not to Scale)
-L- STA. 15+00 TO 15+60 LT
-L- STA. 15+00 TO 15+60 RT
-L- STA. 12+50 TO 12+80 LT
-Y- STA. 13+90 TO 14+30 LT

DETAIL C
STANDARD 'V' DITCH
(Not to Scale)
Min. D = 1 Ft.
-Y- STA. 14+30 TO 14+70 LT

DETAIL D
TOE PROTECTION
(Not to Scale)
d = 1 Ft.
Type of Liner= PSRM
-L- STA. 13+00 TO 13+55 RT

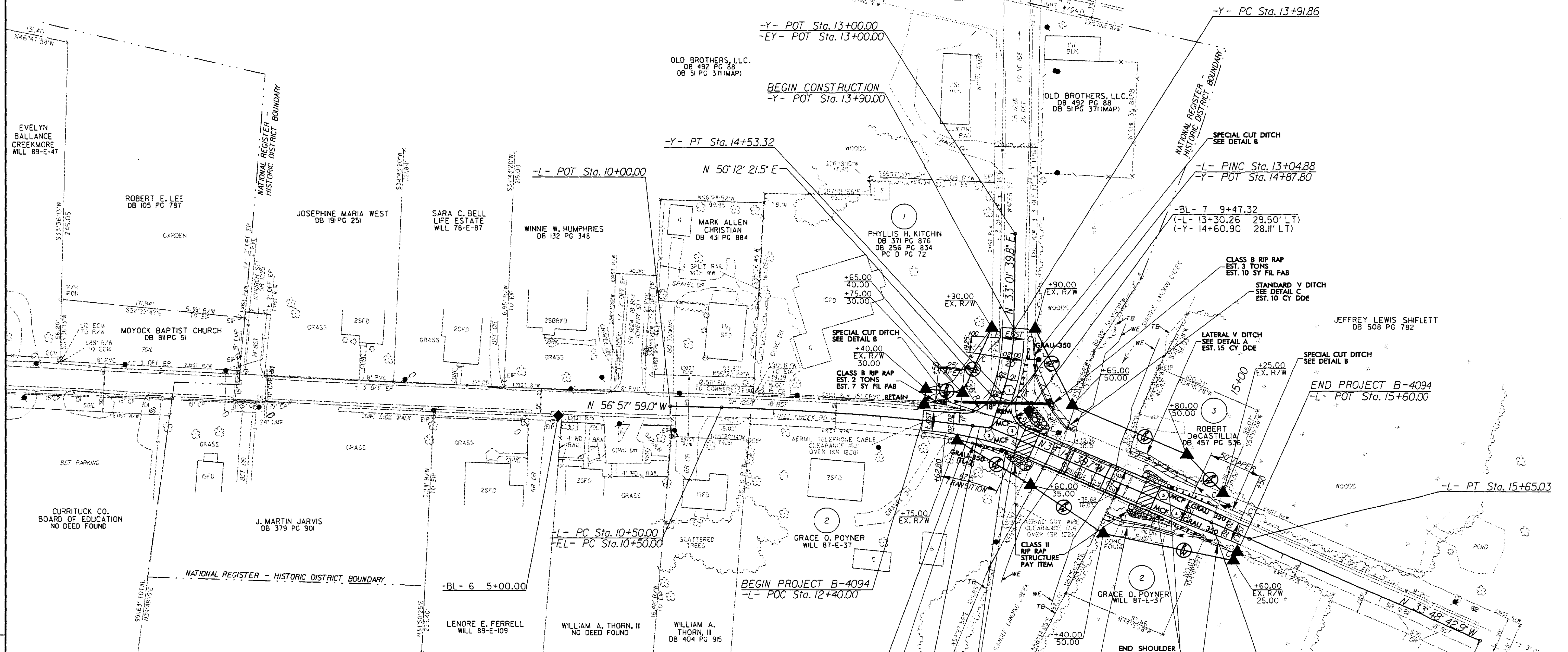
ADT 2009 / ADT 2030 TRAFFIC DIAGRAM (IN HUNDREDS)

-L-

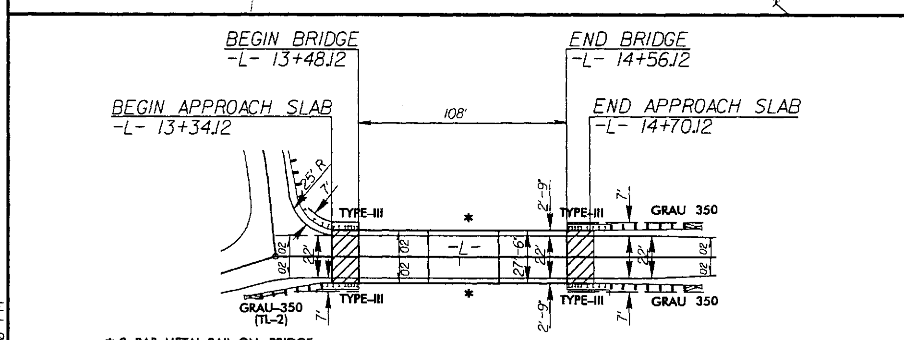
PI Sta 11+68.97	PI Sta 15+45.83
Δ = 5°04' 21.5" (RT)	Δ = 0°25' 56.8" (RT)
D = 2°08' 00.0"	D = 1°07' 32.4"
L = 237.78'	L = 38.42'
T = 118.97'	T = 19.21'
R = 2,685.74'	R = 5,090.00'
SE = NC	SE = NC
DS = 35 mph	DS = 35 mph

-Y-

PI Sta 14+22.83
Δ = 17°10' 41.7" (RT)
D = 27°56' 57.0"
L = 61.46'
T = 30.96'
R = 205.00'
SE = 04
DS = 25 mph



NAD 83 NC GRID
NATIONAL REGISTER - HISTORIC DISTRICT BOUNDARY
-Y- POT Sta. 13+00.00
-EY- POT Sta. 13+00.00
BEGIN CONSTRUCTION
-Y- POT Sta. 13+90.00
-Y- PT Sta. 14+53.32
N 50° 12' 21.5" E
-L- POT Sta. 10+00.00
-Y- PC Sta. 13+91.86
-L- PINC Sta. 13+04.88
-Y- POT Sta. 14+87.80
-BL- 7 9+47.32
(-L- 13+30.26 29.50' LT)
(-Y- 14+60.90 28.11' LT)
OLD BROTHERS, LLC.
DB 492 PG 88
DB 51 PG 371(MAP)
EVELYN BALLANCE CREEKMORE
WILL 89-E-47
ROBERT E. LEE
DB 105 PG 787
JOSEPHINE MARIA WEST
DB 191 PG 251
SARA C. BELL
LIFE ESTATE
WILL 78-E-87
WINNIE W. HUMPHRIES
DB 132 PG 348
MARK ALLEN CHRISTIAN
DB 431 PG 884
PHYLLIS H. KITCHIN
DB 371 PG 876
DB 256 PG 834
PC D PG 72
MOYOCK BAPTIST CHURCH
DB 811 PG 51
JEFFREY LEWIS SHIFLETT
DB 508 PG 782
N 56° 57' 59.0" W
END PROJECT B-4094
-L- POT Sta. 15+60.00
ROBERT DeCASTILLIA
DB 457 PG 536
-L- PT Sta. 15+65.03
CURRITUCK CO.
BOARD OF EDUCATION
NO DEED FOUND
J. MARTIN JARVIS
DB 379 PG 901
-L- PC Sta. 10+50.00
-EL- PC Sta. 10+50.00
GRACE O. POYNER
WILL 87-E-37
BEGIN PROJECT B-4094
-L- POC Sta. 12+40.00
-BL- 6 5+00.00
LENORE E. FERRELL
WILL 89-E-109
WILLIAM A. THORN, III
NO DEED FOUND
WILLIAM A. THORN, III
DB 404 PG 915
-L- PT Sta. 12+87.78
TOE PROTECTION
SEE DETAIL D
N 51° 21' 37.5" W
BEGIN SHOULDER BERM GUTTER
-L- 13+26
LATERAL V DITCH
SEE DETAIL A
EST. 10 CY DDE
SPECIAL CUT DITCH
SEE DETAIL B
END SHOULDER BERM GUTTER
-L- 14+78
CLASS II RIP RAP STRUCTURE PAY ITEM
CLASS B RIP RAP
EST. 3 TONS
EST. 10 SY FIL FAB
STANDARD V DITCH
SEE DETAIL C
EST. 10 CY DDE
LATERAL V DITCH
SEE DETAIL A
EST. 15 CY DDE
CLASS B RIP RAP
EST. 2 TONS
EST. 7 SY FIL FAB
BM #12
-BL- STA 12+65.04
204.84' RT
ELEV= 3.29'
CAROL BALLANCE TYNES
DB 184 PG 434
DB 98 PG 230
N 33° 48' 42.9" W
-L- PC Sta. 15+26.62
-L- POT Sta. 18+00.72
-EL- POT Sta. 18+00.00
N 33° 01' 39.8" E
NATIONAL REGISTER - HISTORIC DISTRICT BOUNDARY



SKETCH SHOWING RELATIONSHIP OF BRIDGE TO PAVEMENT AND SHOULDERS

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MULKEY ENGINEERS & CONSULTANTS
PO Box 33127
Raleigh, N.C. 27636
(919) 851-1912
(919) 851-1918 (FAX)
WWW.MULKEYINC.COM

PROJECT REFERENCE NO.	SHEET NO.
B-4094	5
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

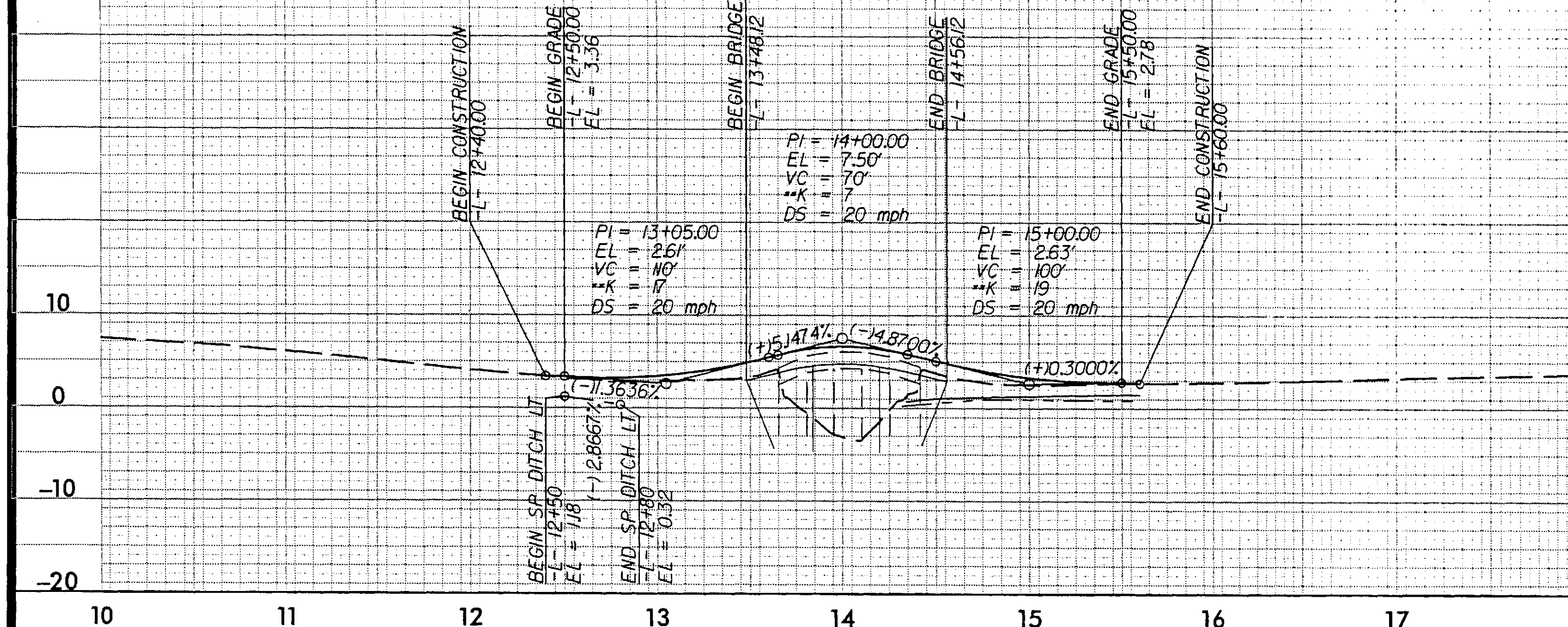
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

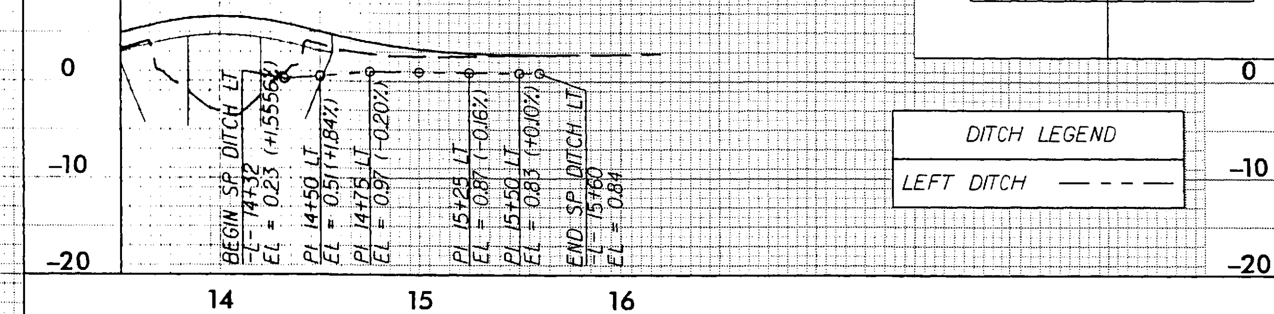
-L-

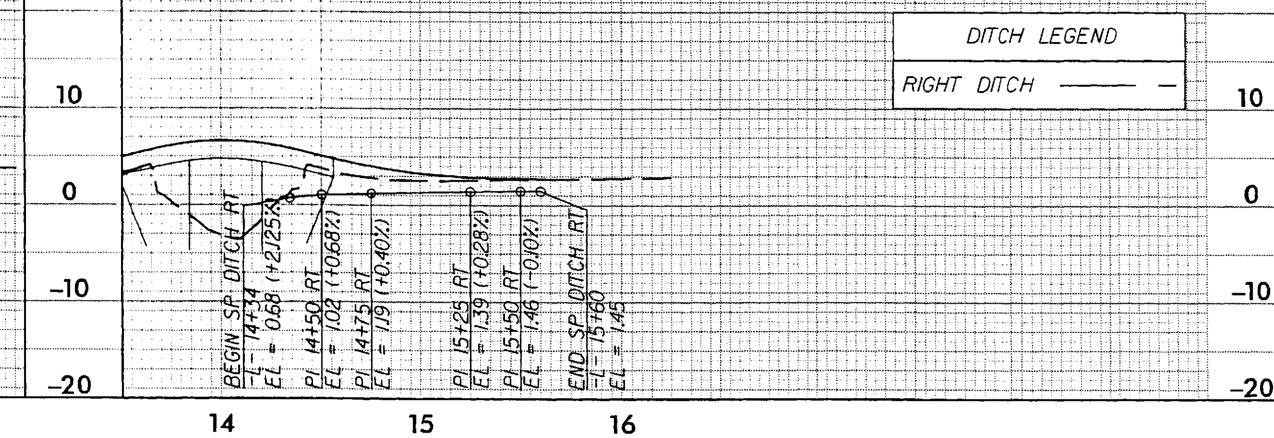
BM-#12
RAILROAD SPIKE IN 15" CYPRESS
-BL- 12+65.04 204.84' RT
EL = 3.29'

FOR -L- PLAN VIEW SEE SHEET 4

**DESIGN EXCEPTION - SAG VERTICAL CURVE K AND CREST VERTICAL CURVE K





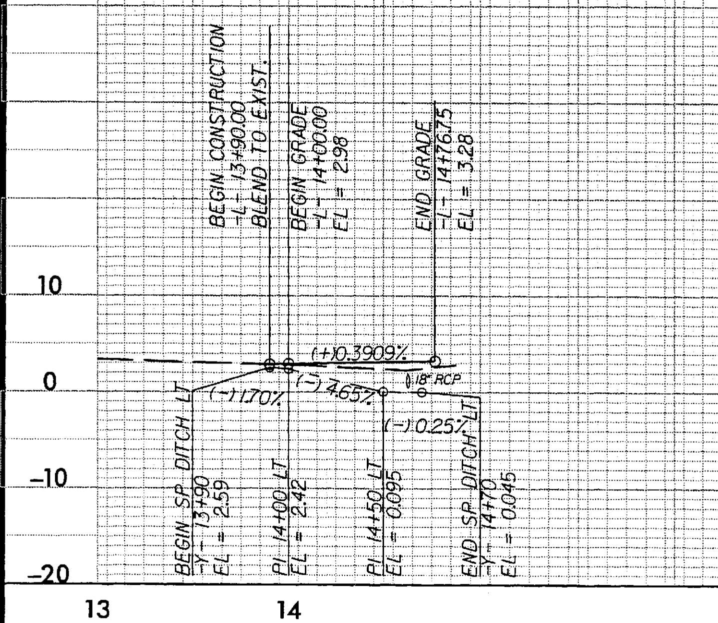


BRIDGE HYDRAULIC DATA

DESIGN DISCHARGE	= 1060 CFS
DESIGN FREQUENCY	= 25 YRS
DESIGN HW ELEVATION	= 3.1 FT
BASE DISCHARGE	= 1860 CFS
BASE FREQUENCY	= 100 YRS
BASE HW ELEVATION	= 4.5 FT
OVERTOPPING DISCHARGE	= 950 CFS
OVERTOPPING FREQUENCY	= 10+ YRS
OVERTOPPING ELEVATION	= 2.77 FT
DATE OF SURVEY	= 2/6/07
W.S. ELEVATION AT DATE OF SURVEY	= 0.3

-Y-

FOR -Y- PLAN VIEW SEE SHEET 4



PIPE HYDRAULIC DATA

DRAINAGE STRUCTURE NO.

DRAINAGE AREA	= 3.2 AC
DESIGN FREQUENCY	= 25 YRS
DESIGN DISCHARGE	= 8.6 CFS
DESIGN HW ELEVATION	= 2.2 FT
100 YEAR DISCHARGE	= 10.3 CFS
100 YEAR HW ELEVATION	= 2.5 FT
OVERTOPPING FREQUENCY	= 500+ YRS
OVERTOPPING DISCHARGE	= 13 CFS
OVERTOPPING ELEVATION	= 3.0 FT

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0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	B-4094	X-2

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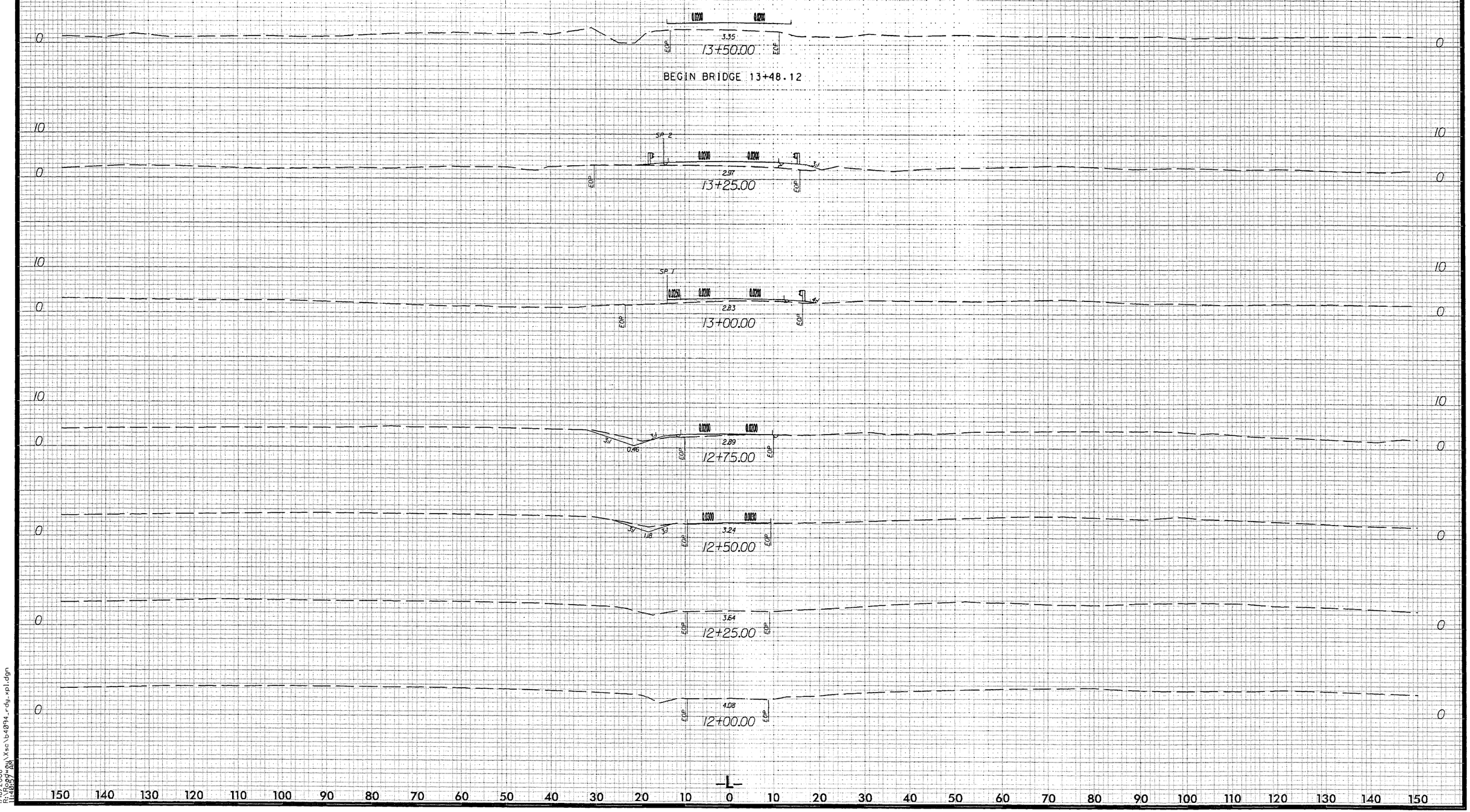

-L-

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	B-4094	X-3

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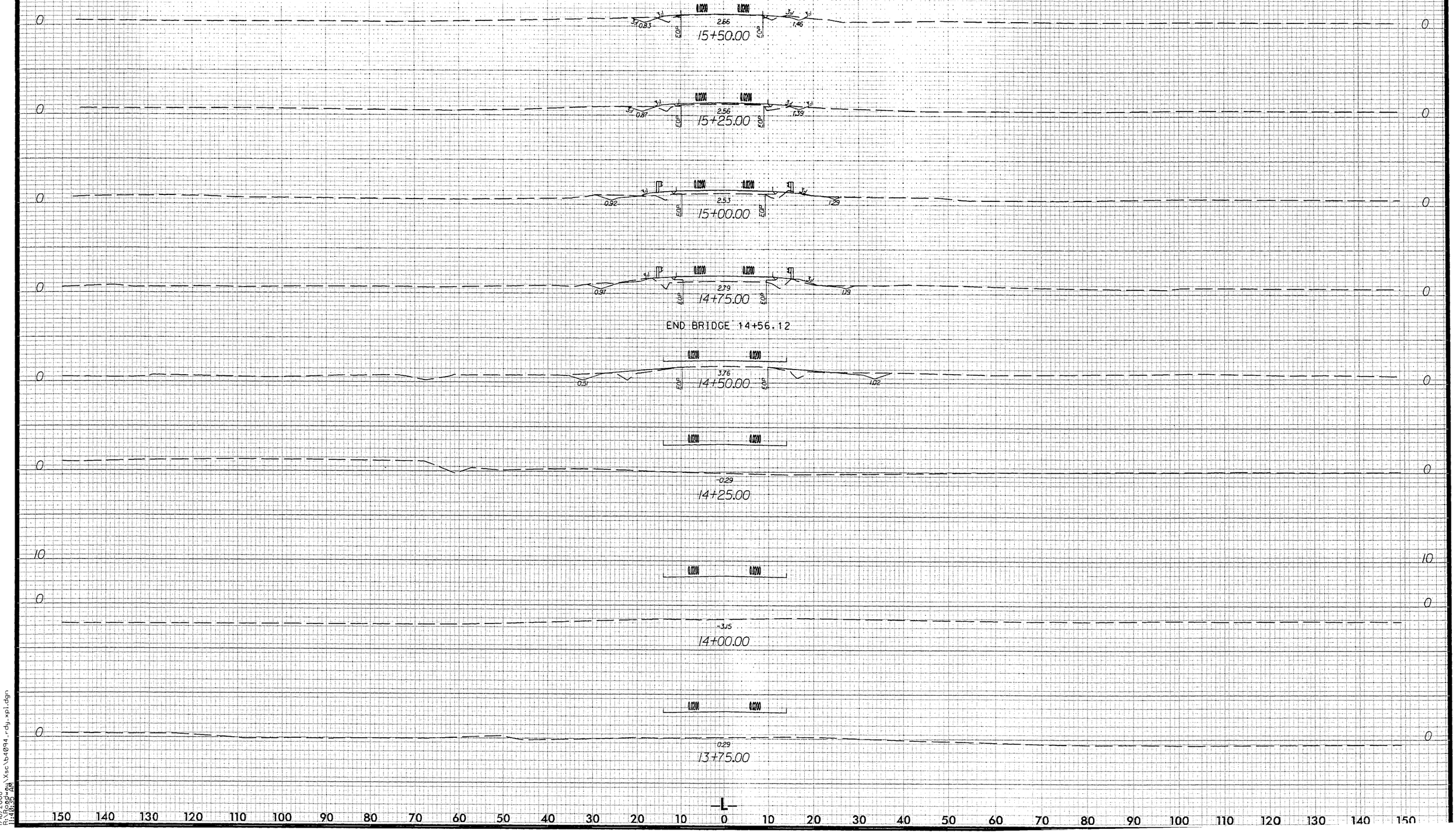

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	B-4094	X-4

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

0

276
EOP
16+00.00
EOP

0

271
EOP
15+75.00
EOP

0

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

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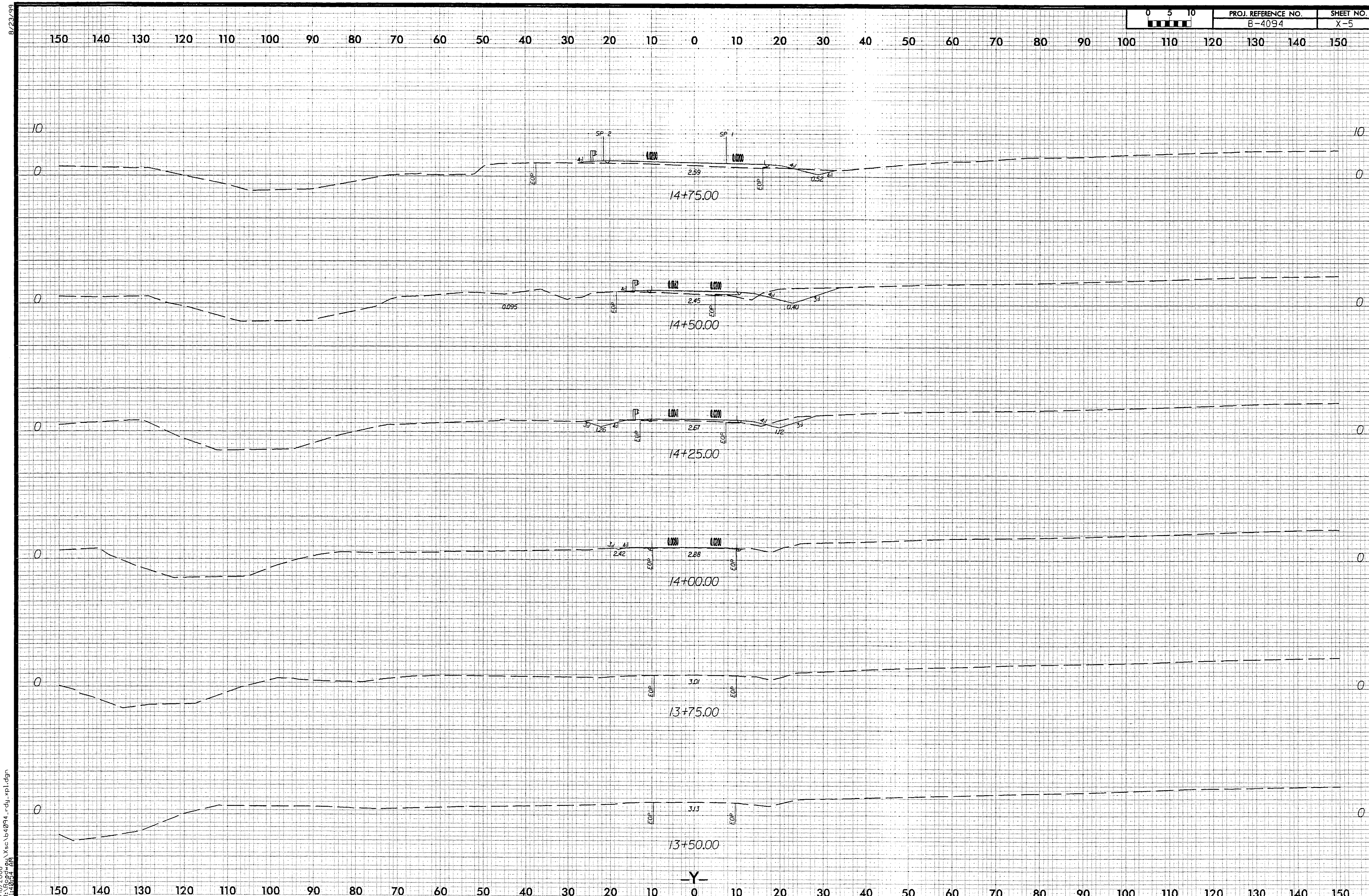
PROJ. REFERENCE NO.	SHEET NO.
B-4094	X-5



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United States Department of the Interior

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

February 18, 2004

Lindsey Riddick
North Carolina Department of Transportation
Project Development and Environmental Analysis
1548 Mail Service Center
Raleigh, North Carolina 27699-1548

Dear Mr. Riddick:

This letter is in response to your letter of January 21, 2004 which provided the U.S. Fish and Wildlife Service (Service) with the biological conclusion of the North Carolina Department of Transportation (NCDOT) that the replacement of Bridge No. 28 on SR 1222 over Shingle Landing Creek in Currituck County (TIP No. B-4094) may affect, but is not likely to adversely affect the federally listed bald eagle (*Haliaeetus leucocephalus*) and West Indian manatee (*Trichechus manatus*). These comments are provided in accordance with section 7 of the Endangered Species Act (ESA) of 1973, as amended (16 U.S.C. 1531-1543).

The information provided states that a bald eagle nest survey was conducted at the project site, though the information does not state the time the survey was conducted or how far from the project site the survey extended. From a review of recent aerial photography of the site, it appears that the project site and surrounding area provides poor habitat for bald eagles. Shingle Landing Creek and its narrow forested riparian area are likely too small to attract nesting bald eagles. Based on the information provided and other information available, the Service concurs that the project may affect, but is not likely to adversely affect the bald eagle.

Due to the high mobility of the West Indian manatee, and because the project site is located on a stream several miles upstream of a large water body, the Service concurs that the project may affect, but is not likely to adversely affect the West Indian manatee. However, the Service recommends that NCDOT implement the following: *Precautionary Guidelines for General Construction in Areas Which May Be Used by the West Indian Manatee in North Carolina.* A copy of this document is enclosed.

We believe that the requirements of section 7 (a)(2) of the ESA have been satisfied. We remind you that obligations under section 7 consultation must be reconsidered if: (1) new information reveals impacts of this identified action that may affect listed species or critical habitat in a manner not previously considered in this review; (2) this action is subsequently modified in a manner that was not considered in this review; or (3) a new species is listed or critical habitat determined that may be affected by this identified action.

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

Sincerely,

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

cc: Bill Biddlecome, USACE, Washington, NC
John Hennessy, NCDWQ, Raleigh, NC
Travis Wilson, NCWRC, Creedmoor, NC
Chris Militscher, USEPA, Raleigh, NC

Precautionary Guidelines for General Construction in Areas Which May Be Used by the West Indian Manatee in North Carolina

1. The applicant will inform all personnel associated with the project that manatees may be present in the project area, primarily during the months June through October, and the need to avoid any harm to these endangered mammals. The applicant will ensure that all construction personnel know the general appearance of the species and their habit of moving about completely or partially submerged in shallow water. All construction personnel will be informed that they are responsible for observing water-related activities for the presence of manatees.

2. The applicant will advise all construction personnel that there are civil and criminal penalties for harming, harassing, or killing manatees which are protected under the Endangered Species Act of 1973, as amended, and the Marine Mammal Protection Act of 1972, as amended.

3. If a manatee is seen within 300 ft of the active daily construction/dredging operation or vessel movement, all appropriate precautions must be implemented to ensure protection of the manatee. The precautions must include the operation of all moving equipment no closer than 50 ft of a manatee. Operation of any equipment closer than 50 ft to a manatee must necessitate immediate shutdown of the equipment. Activities will not resume until the manatee has departed the project area on its own volition. Manatees should not be herded away or harassed into leaving.

4. Any collision with and/or injury to a manatee will be reported immediately. The report must be made to the U.S. Fish and Wildlife Service and the North Carolina Wildlife Resources Commission immediately, and dredging should be postponed until cause of injury or mortality can be determined and a revised dredging and or monitoring plan is produced and approved by the Service.

5. A sign must be posted in all vessels associated with the project where it is clearly visible to the vessel operator. The sign should state:

> CAUTION: The endangered manatee may occur in these waters during the warmer months, primarily from June through October. Idle speed is required if operating this vessel in shallow water during these months. All equipment must be shut down if a manatee comes with 50 ft of operating equipment. A collision with and/or injury to a manatee will be reported immediately to the U.S. Fish and Wildlife Service and the North Carolina Wildlife Resources Commission.

6. The applicant/contractor will maintain a log detailing sightings, collisions, or injuries to manatees during project construction. After construction, the applicant/contractor will prepare a report which summarizes all information on manatees during construction. This report will be submitted to the U.S. Fish and Wildlife Service and the North Carolina Wildlife Resources Commission.

7. All vessels associated with the construction project will operate at "no wake/idle" speeds at all times while in water where the draft of the vessel provides less than 4 ft clearance from the bottom. All vessels will follow routes of deep water whenever possible.

8. If siltation barriers must be placed in shallow water, these barriers will be: (a) made of material in which manatees cannot become entangled; (b) secured in a manner that they cannot break free and entangle manatees; and, (c) regularly monitored to ensure that manatees have not become entangled. Barriers will be placed in a manner to allow manatees entry to or exit from essential habitat.

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Southeast Regional Office
9721 Executive Center Drive North
St. Petersburg, FL 33702
(727) 570-5312; Fax 570-5517
http://sero.nmfs.noaa.gov

JUN 2 2004

F/SER3:JAM

Mr. T. Lindsey Riddick
Project Development and Environmental Analysis Branch
North Carolina Department of Transportation
1548 Mail Service Center
Raleigh, NC 27699-1548

Dear Mr. Riddick:

This responds to your January 20, 2004, letter regarding the replacement of bridge No. 28 over Shingle Landing Creek on SR 1222 in Currituck County, North Carolina. We have reviewed the material submitted by the North Carolina Department of Transportation (NCDOT), with respect to possible effects on the species listed and the critical habitat designated under the Endangered Species Act (ESA) under the purview of the National Marine Fisheries Service (NOAA Fisheries). This consultation is being conducted with the NCDOT as designated by the Federal Highways Administration, North Carolina Division (letter dated April 8, 2003), pursuant to 50 CFR 402.08.

Replacement of bridge No. 28 on SR 1222 will consist of removal of the existing bridge and construction of the new bridge within the existing alignment. The project location is in Shingle Landing Creek, which you have described as potentially providing suitable habitat for shortnose sturgeon. The endangered shortnose sturgeon (*Acipenser brevirostrum*) occurs within the state of North Carolina; however, there have been no documented records of this species within the drainage of the Pasquotank River in Currituck County. Therefore, NOAA Fisheries believes it is unlikely that shortnose sturgeon will occur in the project area and we concur with your finding that the proposed project is not likely to adversely affect the shortnose sturgeon, nor will the action impact habitat of the listed species to the extent that it would actually injure or kill the listed species, because the action will not result in the permanent modification of the habitat.

This concludes your consultation responsibilities under section 7 of the ESA. A new consultation should be initiated if there is a take, if new information reveals effects of the action that may affect listed species or critical habitat in a manner or to an extent that was not previously considered; if the identified action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not previously considered; or if a new species is listed or critical habitat designated that may be affected by the identified action.

In addition to its protected species/critical habitat consultation requirements with NOAA Fisheries' Protected Resources Division (PRD) pursuant to section 7 of the ESA, prior to

proceeding with the proposed action the action agency must also consult with NOAA Fisheries' Habitat Conservation Division (HCD) pursuant to the Magnuson-Stevens Fishery Conservation and Management Act's requirements for essential fish habitat (EFH) consultation (16 U.S.C. 1855(b)(2) and 50 CFR 600.905-.930, subpart K). Consultation is not complete until EFH and ESA concerns have been addressed. If you have any questions about EFH consultation for this project, please contact Mr. Ron Sechler, HCD, at (252) 728-5090.

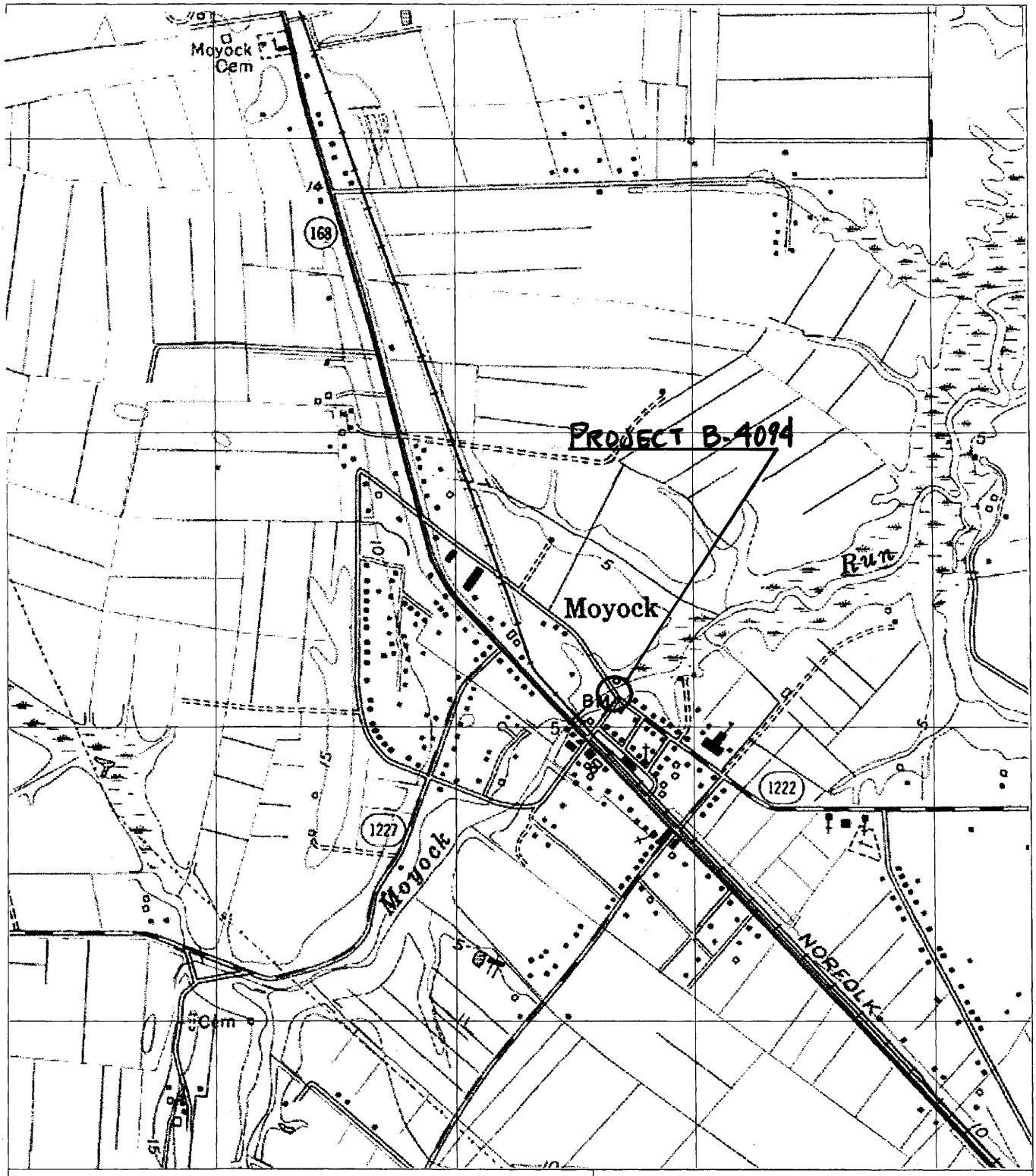
We look forward to continued cooperation with the NCDOT in conserving our endangered and threatened resources. If you have any questions, please contact Ms. Jennifer Moore, natural resource specialist, at (727) 570-5312, or by e-mail at jennifer.moore@noaa.gov.

Sincerely,

Roy E. Crabtree, Ph.D.
Regional Administrator

cc: F/SER4 (R. Sechler)

Ref: I\SER\2004\00251
File: 1514-22.L.2 (NCDOT)



TOPO MAP

SCALE: 1" : 1500'

NCDOT

DIVISION OF HIGHWAYS
CURRITUCK COUNTY
PROJECT: 33452.1.1 (B-4094)
BRIDGE NO. 28 OVER
SHINGLE LANDING CREEK
ON SR 1222
(TULLS CREEK RD.)

Permit Drawing
Sheet 1 of 10
SHEET OF

1/10/2008

WETLAND PERMIT IMPACT SUMMARY

Site No.	Station (From/To)	Structure Size / Type	WETLAND IMPACTS: Permanent Fill In Wetlands (ac)	Temp. Fill In Wetlands (ac)	Excavation in Wetlands (ac)	Mechanized Clearing in Wetlands (ac)	Hand Clearing in Wetlands (ac)	SURFACE WATER IMPACTS: Permanent SW impacts (ac)	Temp. SW impacts (ac)	Existing Channel Impacts Permanent (ft)	Existing Channel Impacts Temp. (ft)	Natural Stream Design (ft)
1	13+84.25 -L- and 14+20.25 -L-	Bridge						<0.01		28		
2	14+30 to 15+60 -L- LT & RT	Roadway	<0.01		0.03	0.04						
3	13+30 to 13+68 -L- LT	Roadway						<0.01		47		
TOTALS:			<0.01		0.03	0.04		<0.01		75		

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
Currituck County
Project: B-4094 (Bridge #28)
Permit Drawing
Sheet 2 of 10
SHEET 9/24/2008

PROPERTY OWNERS

NAMES AND ADDRESSES

	NAMES	ADDRESSES
2	Grace O. Poyner	PO Box 7 Moyock, NC 27958
3	Robert DeCastillia	PO Box 478 Moyock, NC 27958
3A	Old Brothers, LLC	PO Box 62, Moyock, NC 27598
4	Gees Group of North Carolina	5700 Lake Wright Dr., Suite 103, Norfolk, VA 23502

NCDOT

DIVISION OF HIGHWAYS
CURRITUCK COUNTY
PROJECT: 33452.1.1 (B-4094)
BRIDGE NO. 28 OVER
SHINGLE LANDING CREEK
ON SR 1222
(TULLS CREEK RD.)

Permit Drawing

Sheet 3 of 10

SHEET OF

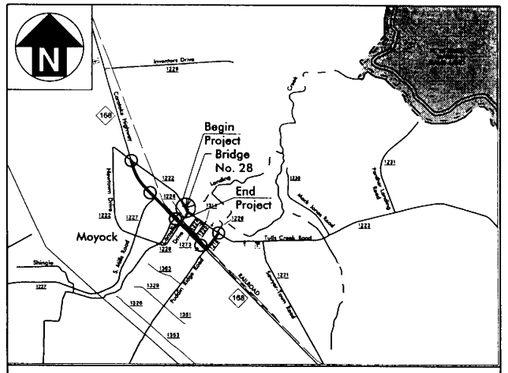
9/24/2008

09/08/99

TIP PROJECT: B-4094

CONTRACT: C202101

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



VICINITY MAP — PROPOSED DETOUR ROUTE

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CURRITUCK COUNTY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4094	1	

W.S.B. ELEMENT	F. A. PROJ. NO.	DESCRIPTION
33452.1.1	BRZ-1222(6)	P.E.
33452.2.1	BRZ-1222(6)	UTL /R/W
33452.3.1	BRZ-1222(6)	CONST.

Permit Drawing
Sheet 4 of 10

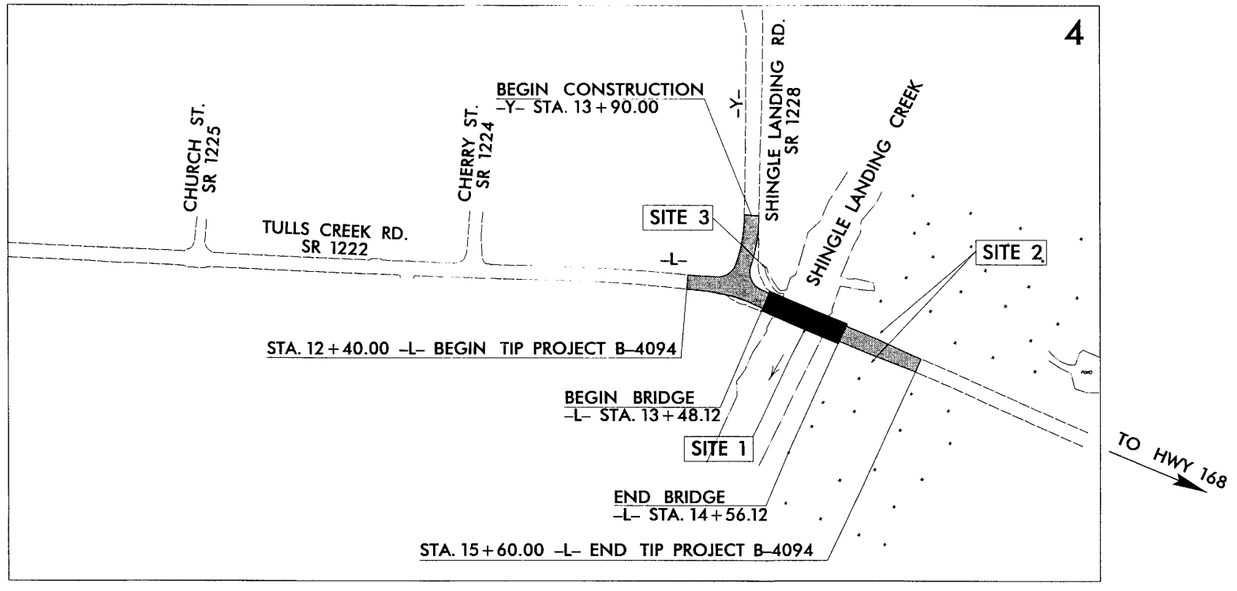
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

LOCATION: BRIDGE NO. 28 OVER SHINGLE LANDING CREEK ON SR 1222

TYPE OF WORK: GRADING, PAVING, DRAINAGE AND STRUCTURE

STREAM & WETLAND IMPACTS

NC GRID NAD 83



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PO Box 33127
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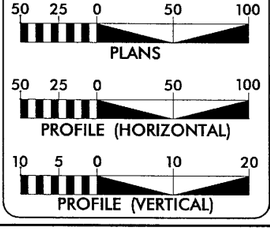
(919) 851-1912
(919) 851-1918 (FAX)
WWW.MULKEYINC.COM

** Design Exception – Lane Width, Shoulder Width, Bridge Width, Sag Vertical Curve K, Crest Vertical Curve K, Vertical SSD and Horizontal Clearance.

GRAPHIC SCALES



DESIGN DATA

ADT 2009 = 2,700
ADT 2030 = 5,600
DHV = 12%
D = 70%
* T = 4%
** V = 35 mph
Func Class = Local Rural
* Duals 3% TTST 1%

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT B-4094 = 0.040 MILE

LENGTH STRUCTURE TIP PROJECT B-4094 = 0.021 MILE

TOTAL LENGTH STATE TIP PROJECT B-4094 = 0.061 MILE

Prepared in the Office of:
Mulkey Engineers & Consultants
FOR THE NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

2006 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: MARCH 5, 2008

LETTING DATE: MARCH 17, 2009

NCDOT CONTACT: CATHY S. HOUSER, PE
ROADWAY DESIGN - PROJECT ENGINEER

TIM JORDAN, PE
MULKEY E & C PROJECT MANAGER

KEVIN ALFORD, PE
MULKEY E & C HYDRAULICS ENGINEER

HYDRAULICS ENGINEER

SIGNATURE: P.E.

ROADWAY DESIGN ENGINEER

SIGNATURE: P.E.

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

P.E.
STATE HIGHWAY DESIGN ENGINEER

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PROJECT REFERENCE NO. B-4094 | SHEET NO. 4

RW SHEET NO.

ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

MULKEY ENGINEERS & CONSULTANTS

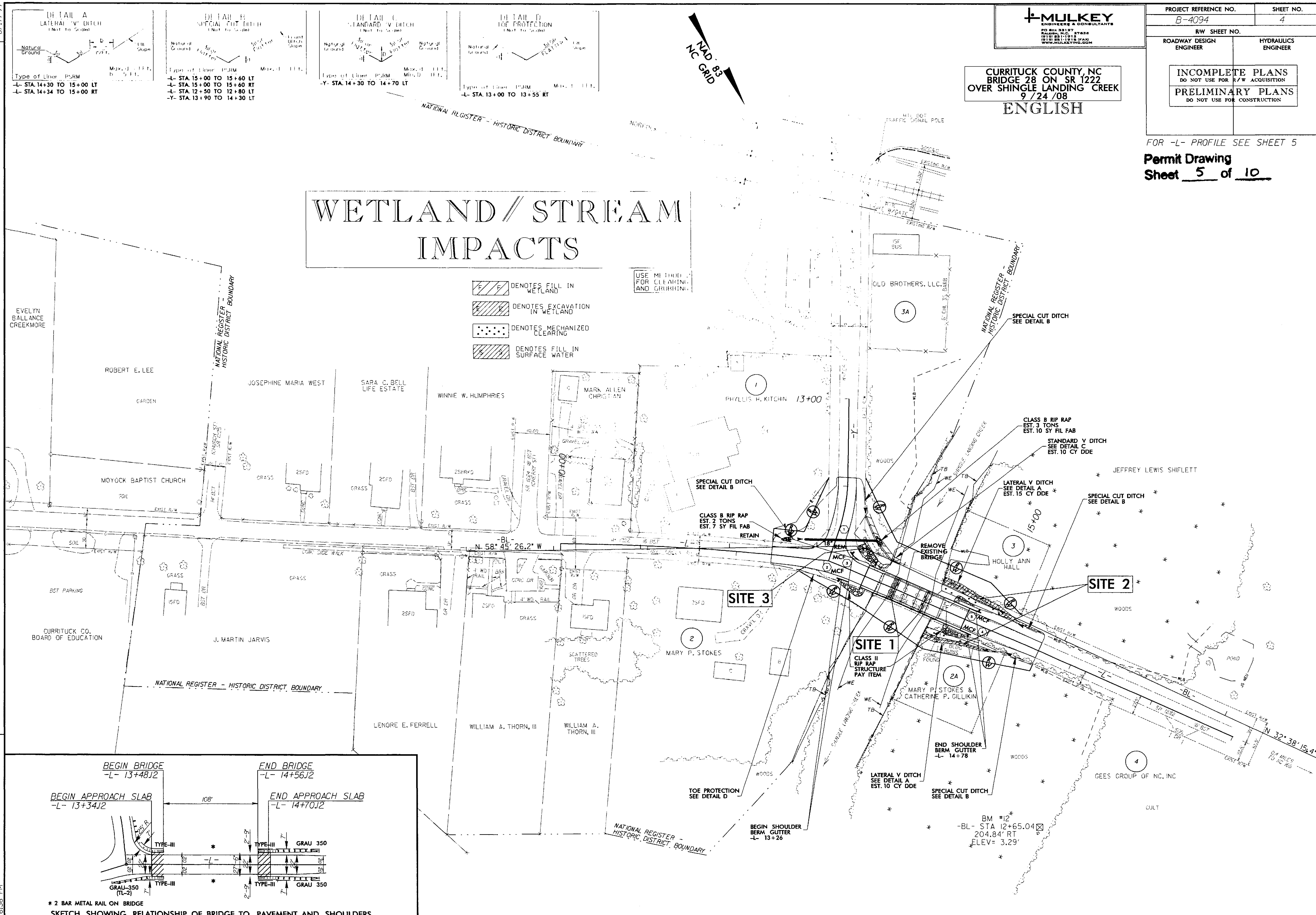
CURRITUCK COUNTY, NC
BRIDGE 28 ON SR 1222
OVER SHINGLE LANDING CREEK
9/24/08

ENGLISH

FOR -L- PROFILE SEE SHEET 5

Permit Drawing
Sheet 5 of 10

WETLAND / STREAM IMPACTS



DETAIL A
LATERAL "V" DITCH
(Not to Scale)
Type of Liner: PSRM
-L- STA. 14+30 TO 15+00 LT
-L- STA. 14+34 TO 15+00 RT
DETAIL B
SPECIAL CUT DITCH
(Not to Scale)
-L- STA. 15+00 TO 15+60 LT
-L- STA. 15+00 TO 15+60 RT
-L- STA. 12+50 TO 12+80 LT
-Y- STA. 13+90 TO 14+30 LT
DETAIL C
STANDARD "V" DITCH
(Not to Scale)
-Y- STA. 14+30 TO 14+70 LT
DETAIL D
TOE PROTECTION
(Not to Scale)
-L- STA. 13+00 TO 13+55 RT
NAD 83 NC GRID
NATIONAL REGISTER - HISTORIC DISTRICT BOUNDARY
DENOTES FILL IN WETLAND
DENOTES EXCAVATION IN WETLAND
DENOTES MECHANIZED CLEARING
DENOTES FILL IN SURFACE WATER
USE METHOD II FOR CLEARING AND GRUBBING
EVELYN BALLANCE CREEKMORE
ROBERT E. LEE
JOSEPHINE MARIA WEST
SARA C. BELL LIFE ESTATE
WINNIE W. HUMPHRIES
MARK ALLEN CHRISTIAN
PHYLLIS H. KITCHIN
OLD BROTHERS, LLC.
MOYOCK BAPTIST CHURCH
CURRITUCK CO. BOARD OF EDUCATION
J. MARTIN JARVIS
LENORE E. FERRELL
WILLIAM A. THORN, III
MARY P. STOKES
MARY P. STOKES & CATHERINE P. GILLIKIN
HOLLY ANN HALL
JEFFREY LEWIS SHIFLETT
GEES GROUP OF NC, INC
N 58° 45' 26.2" W
N 32° 38' 15.4" W
SITE 1
SITE 2
SITE 3
SPECIAL CUT DITCH SEE DETAIL B
CLASS B RIP RAP EST. 3 TONS EST. 10 SY FIL FAB
STANDARD V DITCH SEE DETAIL C EST. 10 CY DDE
LATERAL V DITCH SEE DETAIL A EST. 15 CY DDE
CLASS B RIP RAP EST. 2 TONS EST. 7 SY FIL FAB
RETAIN
REMOVE EXISTING BRIDGE
CLASS II RIP RAP STRUCTURE PAY ITEM
END SHOULDER BERM GUTTER -L- 14+78
LATERAL V DITCH SEE DETAIL A EST. 10 CY DDE
TOE PROTECTION SEE DETAIL D
BEGIN SHOULDER BERM GUTTER -L- 13+26
BM #12 -BL- STA 12+65.04 204.84' RT ELEV= 3.29'
BEGIN BRIDGE -L- 13+48.12
END BRIDGE -L- 14+56.12
BEGIN APPROACH SLAB -L- 13+34.12
END APPROACH SLAB -L- 14+70.12
108'
TYPE-III
GRAU 350
GRAU-350 (TL-2)
* 2 BAR METAL RAIL ON BRIDGE
SKETCH SHOWING RELATIONSHIP OF BRIDGE TO PAVEMENT AND SHOULDERS

REVISIONS

8/17/99

9/24/2008
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5/28/99

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(919) 851-1918 FAX
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PROJECT REFERENCE NO.	SHEET NO.
B-4094	5
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

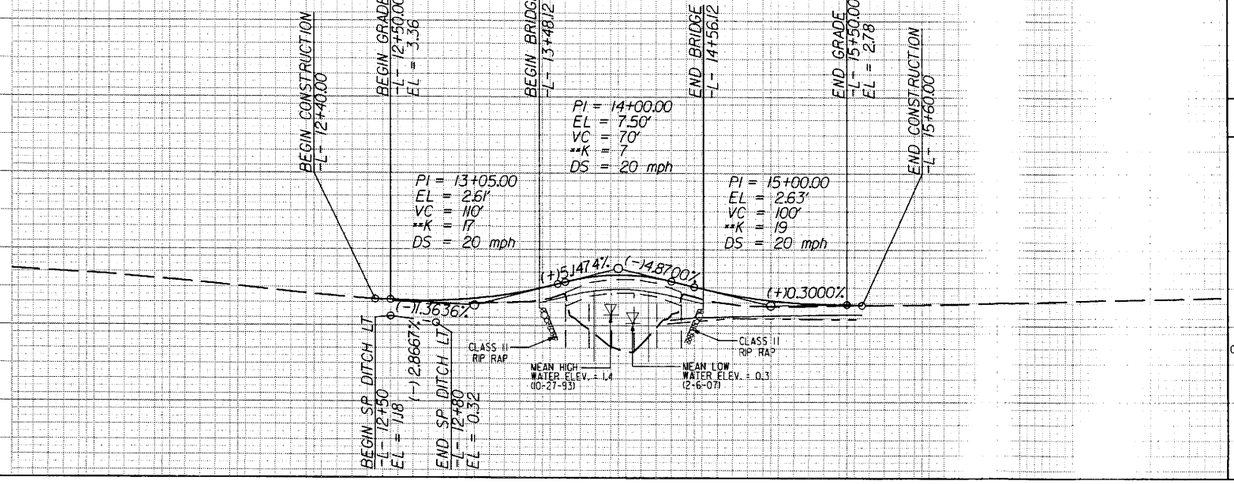
Permit Drawing
Sheet 6 of 10
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

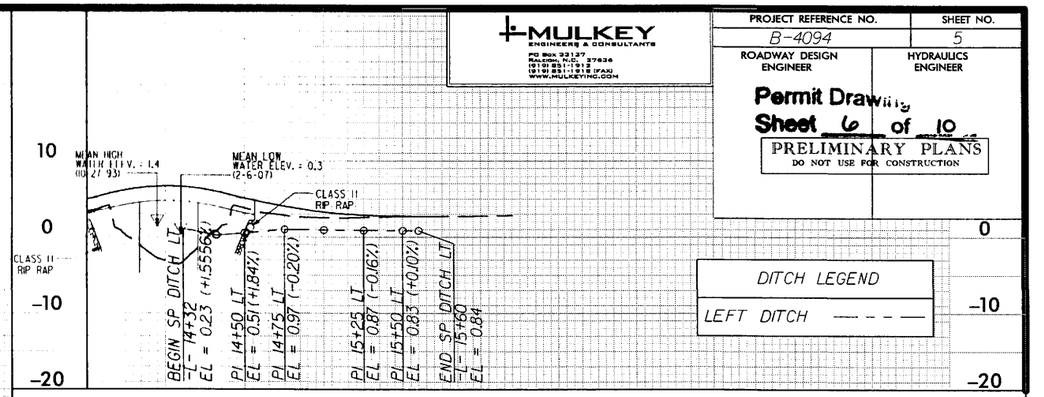
-L-

BM-#12
RAILROAD SPIKE IN 15" CYPRESS
-BL- 12+65.04 204.84' RT
EL = 1.29'

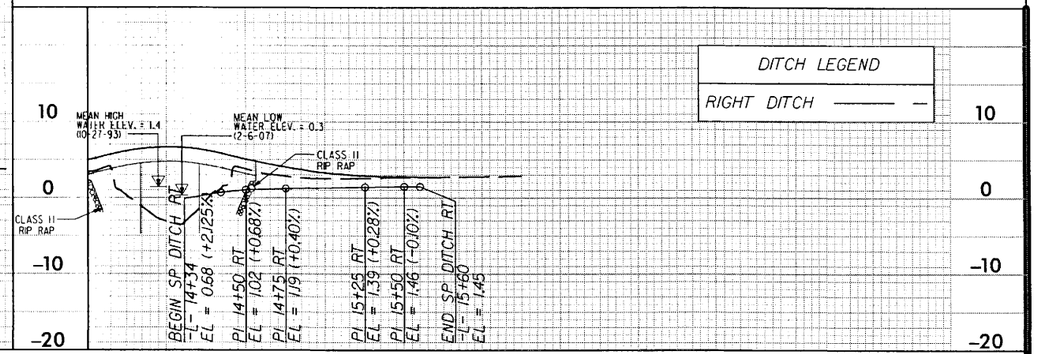
FOR -L- PLAN VIEW SEE SHEET 4

**DESIGN EXCEPTION - SAG VERTICAL CURVE K AND CREST VERTICAL CURVE K





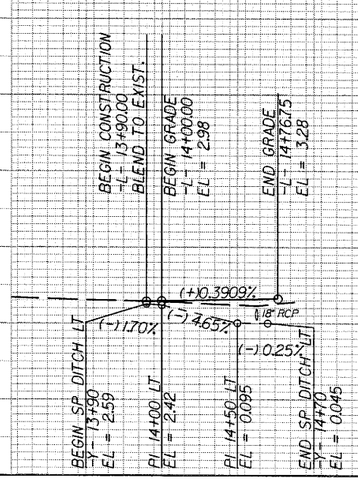
DITCH LEGEND	
LEFT DITCH	- - - -



DITCH LEGEND	
RIGHT DITCH	———

-Y-

FOR -Y- PLAN VIEW SEE SHEET 4



BRIDGE HYDRAULIC DATA

DESIGN DISCHARGE	= 1060	CFS
DESIGN FREQUENCY	= 25	YRS
DESIGN HW ELEVATION	= 3.1	FT
BASE DISCHARGE	= 1860	CFS
BASE FREQUENCY	= 100	YRS
BASE HW ELEVATION	= 4.5	FT
OVERTOPPING DISCHARGE	= 950	CFS
OVERTOPPING FREQUENCY	= 10+	YRS
OVERTOPPING ELEVATION	= 2.77	FT
DATE OF SURVEY	= 2/6/07	
W.S. ELEVATION AT DATE OF SURVEY	= 0.3	

PIPE HYDRAULIC DATA

DRAINAGE STRUCTURE NO.

DRAINAGE AREA	= 3.2	AC
DESIGN FREQUENCY	= 25	YRS
DESIGN DISCHARGE	= 8.6	CFS
DESIGN HW ELEVATION	= 2.2	FT
100 YEAR DISCHARGE	= 10.3	CFS
100 YEAR HW ELEVATION	= 2.5	FT
OVERTOPPING FREQUENCY	= 500+	YRS
OVERTOPPING DISCHARGE	= 13	CFS
OVERTOPPING ELEVATION	= 3.0	FT

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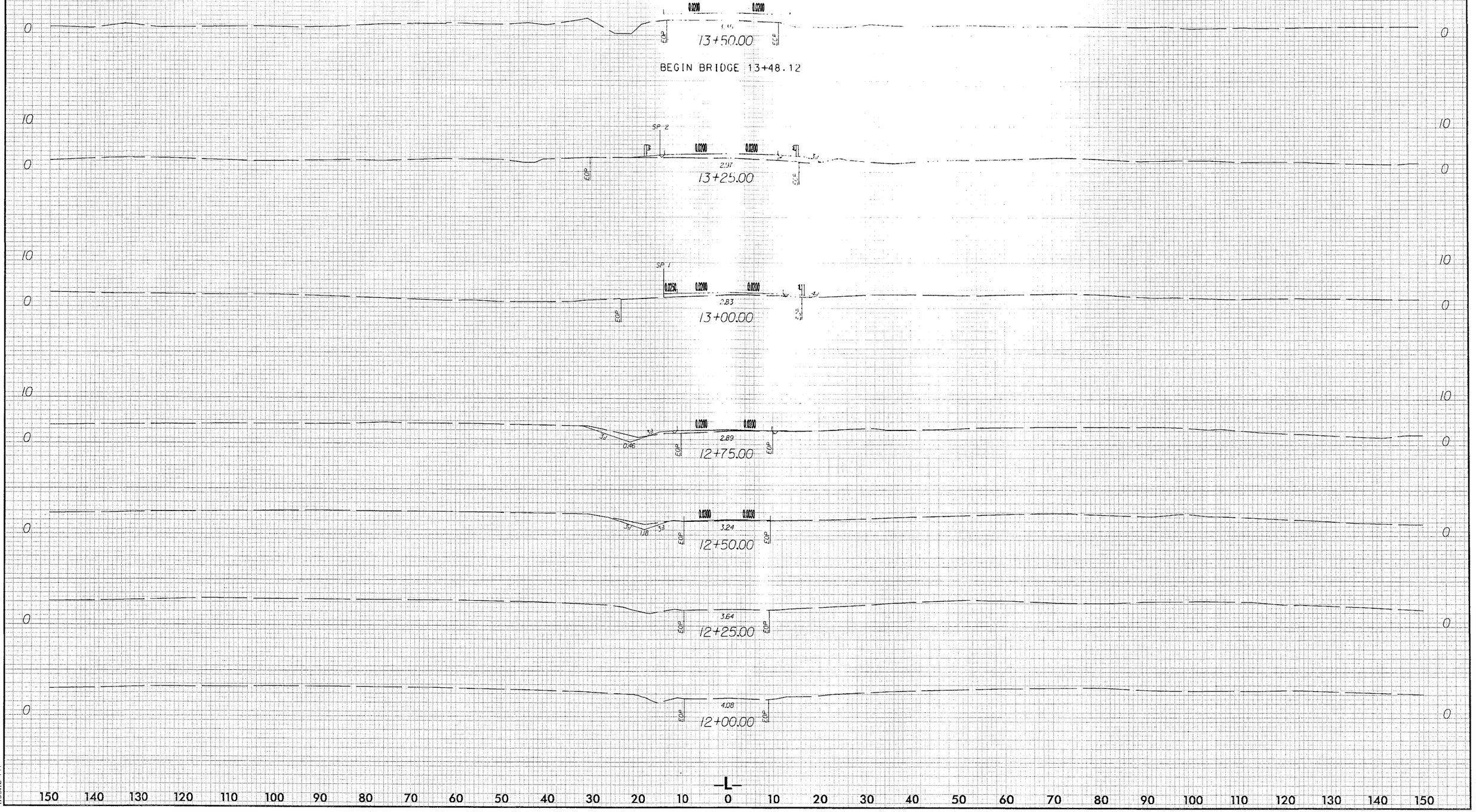
8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	B-4094	X-2

Permit Drawing
Sheet 7 of 10



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	B-4094	X-3

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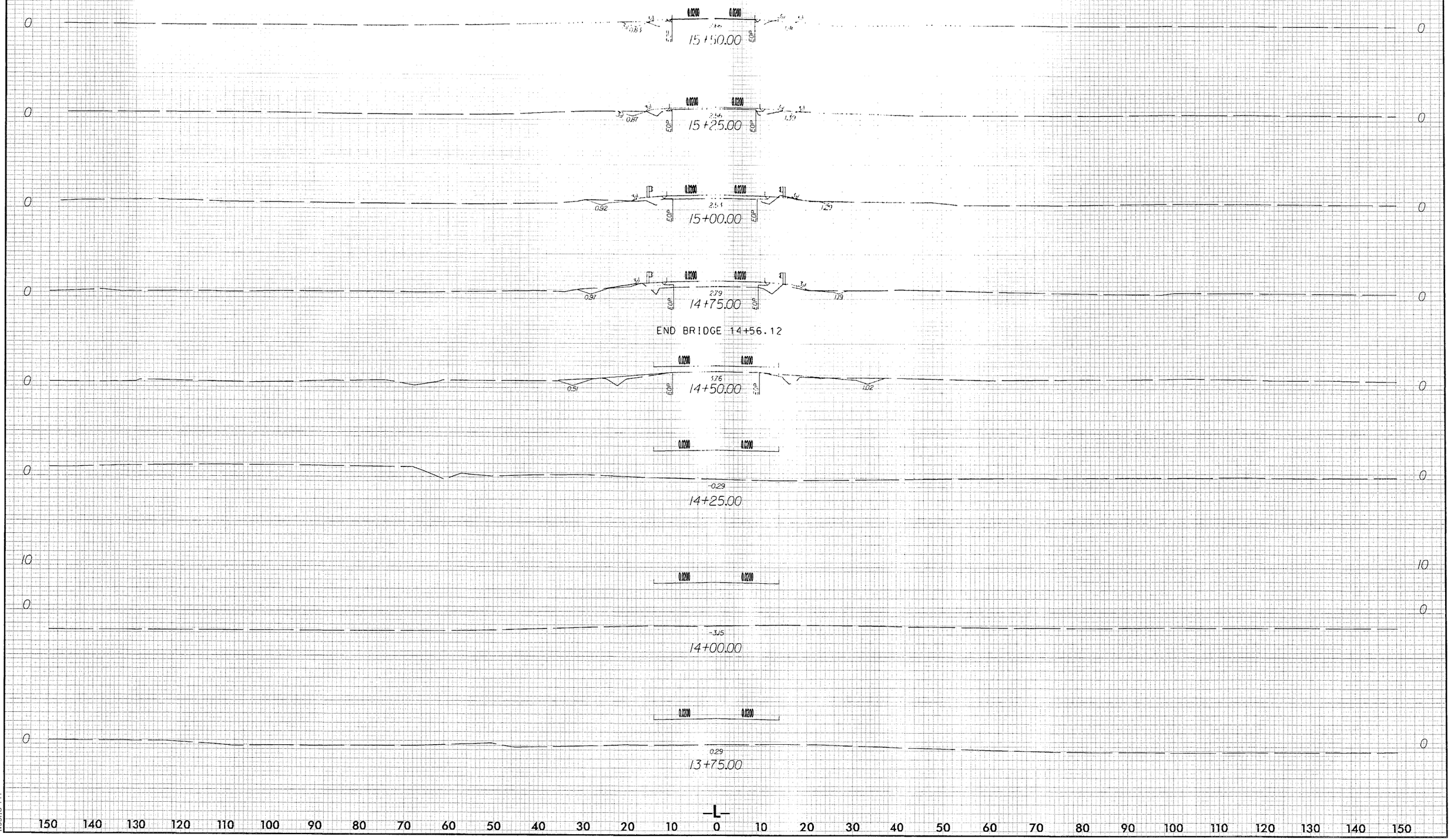
Permit Drawing
Sheet 8 of 10



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8/23/99

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	B-4094	X-4

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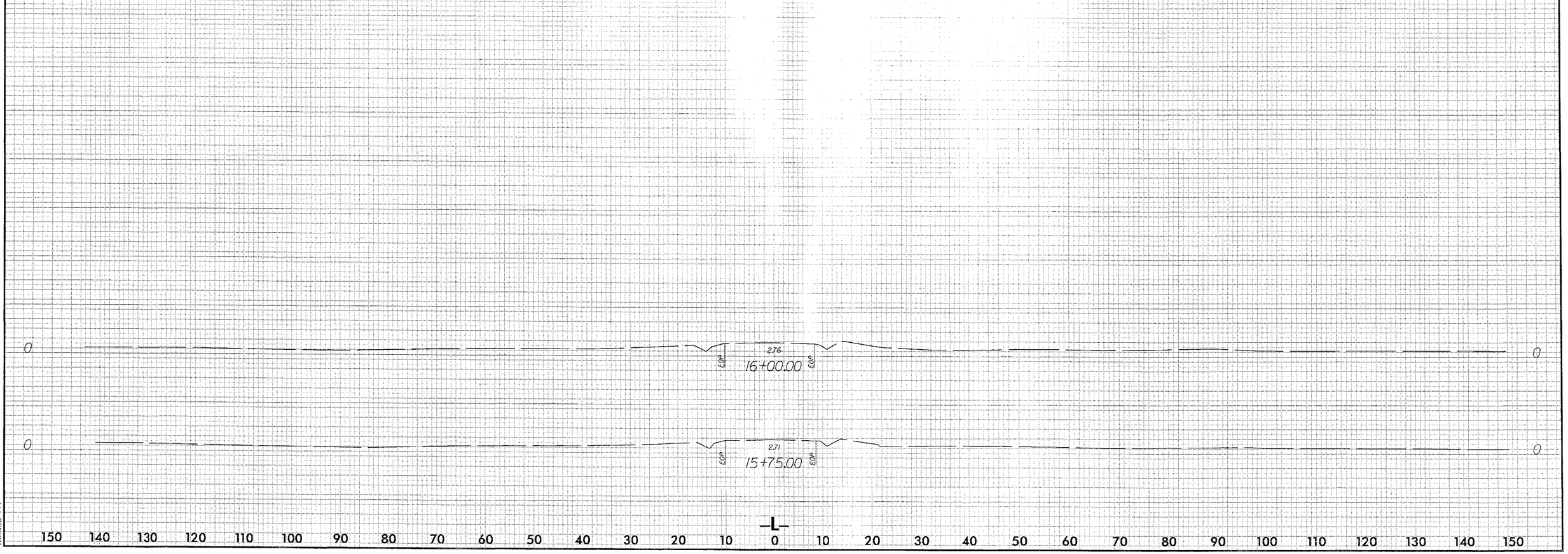
Permit Drawing
Sheet 9 OF 10



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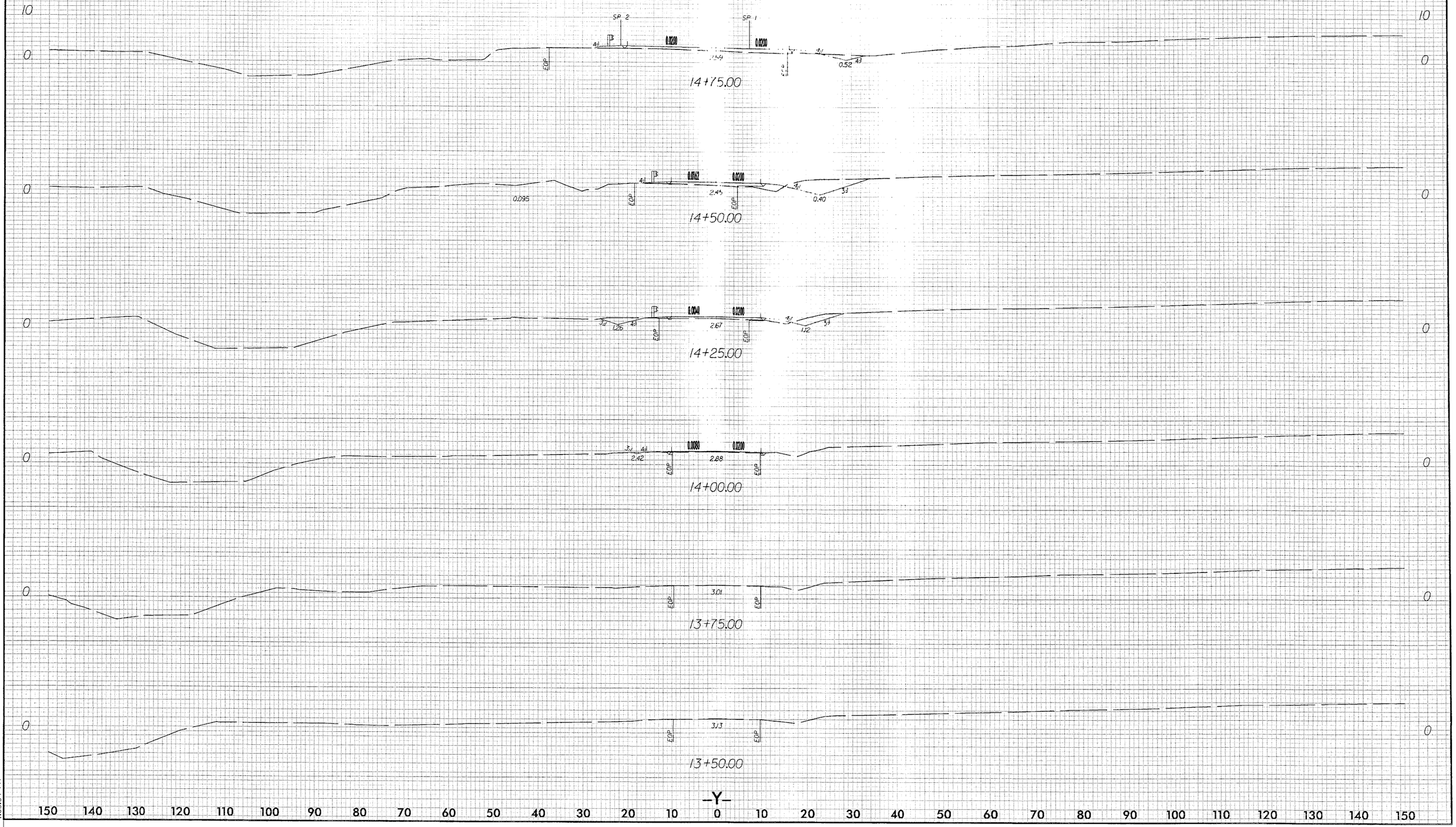
0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	B-4094	X-5

Permit Drawing
Sheet 10 of 10



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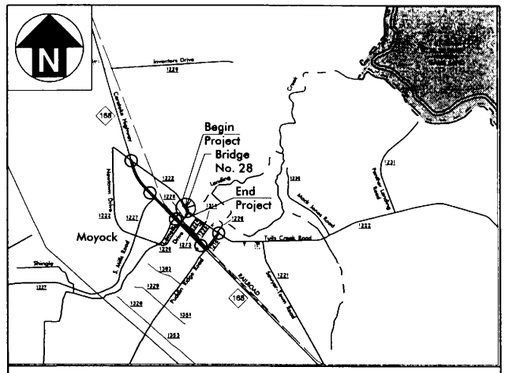
09/08/99

TIP PROJECT: B-4094

CONTRACT: C202101

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



VICINITY MAP — PROPOSED DETOUR ROUTE

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CURRITUCK COUNTY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4094	1	

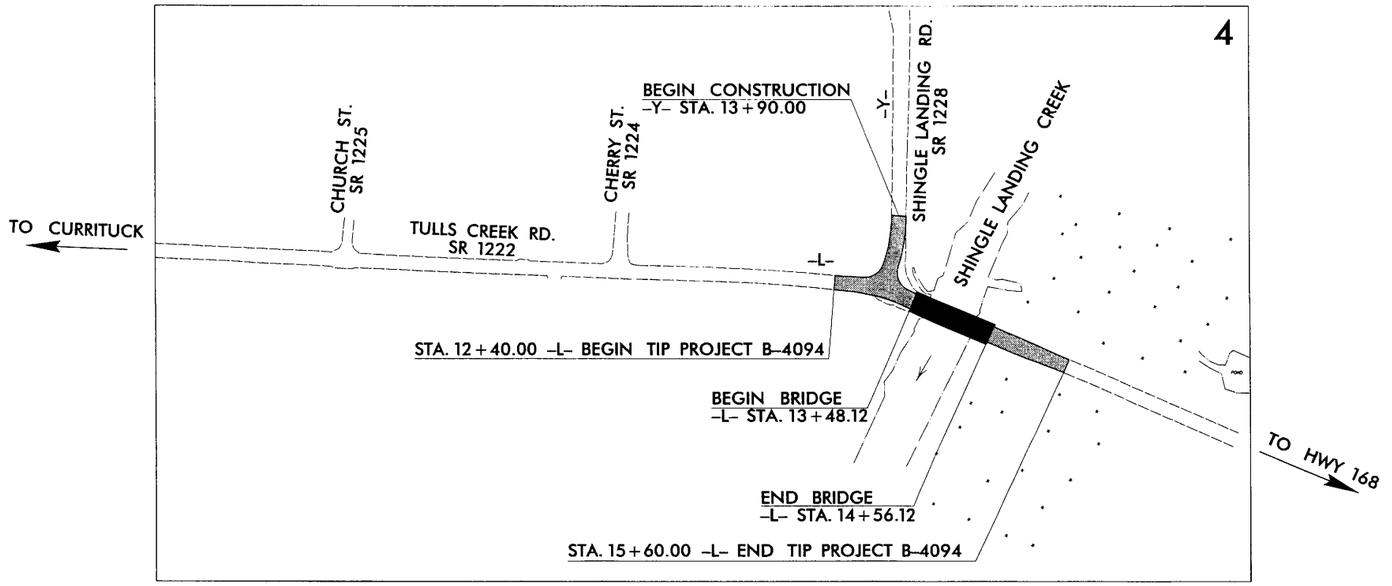
W.B.S. ELEMENT	F. A. PROJ. NO.	DESCRIPTION
33452.1.1	BRZ-1222(6)	P.E.
33452.2.1	BRZ-1222(6)	UTL /R/W
33452.3.1	BRZ-1222(6)	CONST.

LOCATION: BRIDGE NO. 28 OVER SHINGLE LANDING CREEK ON SR 1222

TYPE OF WORK: GRADING, PAVING, DRAINAGE AND STRUCTURE

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

NC GRID
NAD 83



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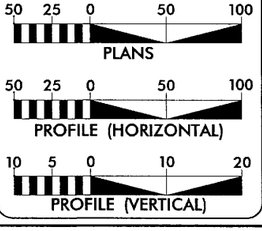
(919) 851-1918 (FAX)
WWW.MULKEYINC.COM

** Design Exception – Lane Width, Shoulder Width, Bridge Width, Sag Vertical Curve K, Crest Vertical Curve K, Vertical SSD and Horizontal Clearance.

GRAPHIC SCALES



DESIGN DATA

ADT 2009 = 2,700
ADT 2030 = 5,600
DHV = 12%
D = 70%
* T = 4%
** V = 35 mph
Func Class = Local Rural
* Duals 3% TTST 1%

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT B-4094 = 0.040 MILE

LENGTH STRUCTURE TIP PROJECT B-4094 = 0.021 MILE

TOTAL LENGTH STATE TIP PROJECT B-4094 = 0.061 MILE

Prepared in the Office of:
Mulkey Engineers & Consultants
FOR THE NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

2006 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: MARCH 5, 2008

LETTING DATE: MARCH 17, 2009

TIM JORDAN, PE
MULKEY E & C PROJECT MANAGER

KEVIN ALFORD, PE
MULKEY E & C HYDRAULICS ENGINEER

NCDOT CONTACT: CATHY S. HOUSER, PE
ROADWAY DESIGN - PROJECT ENGINEER

HYDRAULICS ENGINEER

P.E.
SIGNATURE:

ROADWAY DESIGN ENGINEER

P.E.
SIGNATURE:

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

P.E.
STATE HIGHWAY DESIGN ENGINEER

9/24/2008
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5/14/99

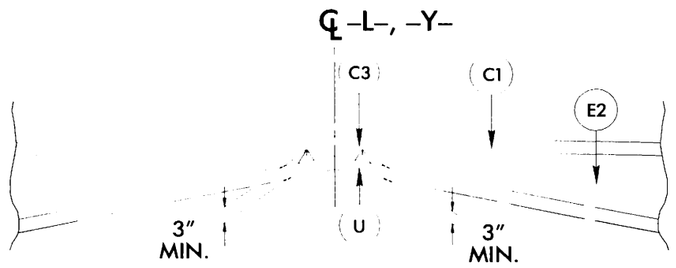
PROJECT REFERENCE NO.	SHEET NO.
B-4094	2
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

PAVEMENT SCHEDULE
(FINAL PAVEMENT DESIGN)

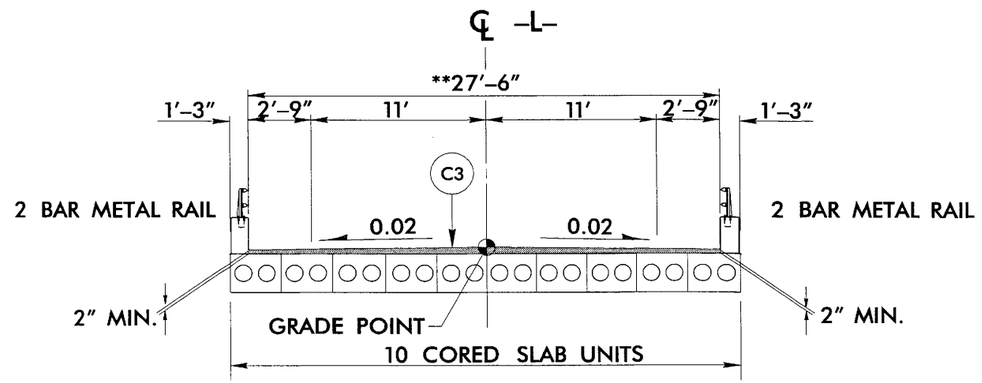
C1	PROP. APPROX. 1¼" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 137.5 LBS. PER SQ. YD.
C2	PROP. APPROX. 2.5" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 137.5 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
C3	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 110 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 1" IN DEPTH OR GREATER THAN 2" IN DEPTH.
E1	PROP. APPROX. 5" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 570 LBS. PER SQ. YD.
E2	PROP. VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 3" IN DEPTH OR GREATER THAN 5½" IN DEPTH.
T	EARTH MATERIAL.
U	EXISTING PAVEMENT.
W	VARIABLE DEPTH ASPHALT PAVEMENT (SEE STANDARD WEDGING DETAIL)

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



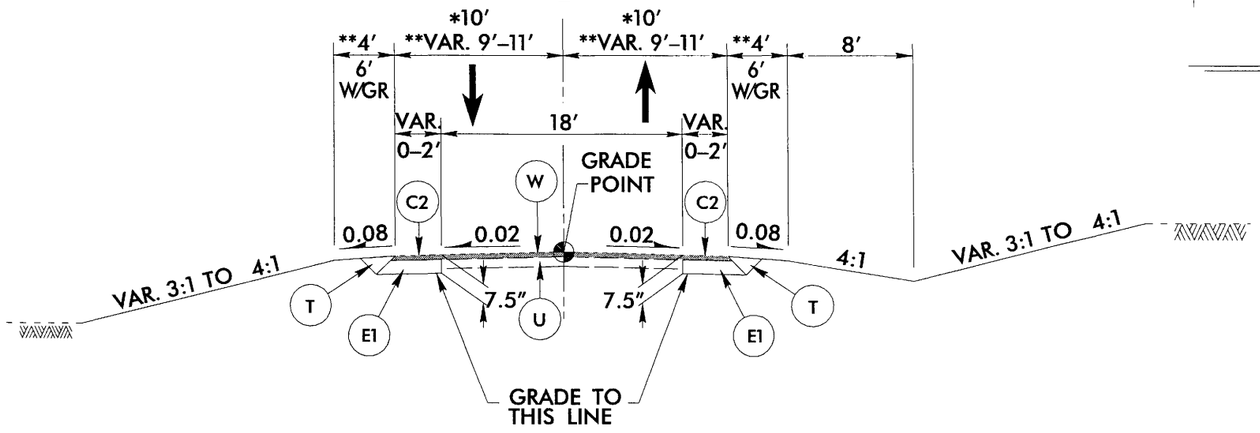
DETAIL SHOWING METHOD OF WEDGING

USE IN CONJUCTION WITH TYPICAL SECTION NO. 1



DETAIL OF BRIDGE

–L– STA 13+48.12 TO STA 14+56.12



TYPICAL SECTION NO. 1

USE TYPICAL SECTION NO. 1
AT THE FOLLOWING LOCATIONS

TRANSITION FROM EXISTING TO T.S. NO. 1 FROM
–L– STA. 11+50.00 TO STA. 12+00.00
–Y– STA. 13+00.00 TO STA. 13+50.00

–L– STA. 12+00.00 TO STA. 13+48.12 (BEGIN BRIDGE)
–L– STA. 14+56.12 (END BRIDGE) TO STA 15+50.00
* –Y– STA. 13+50 TO STA. 14+76.80

TRANSITION FROM T.S. NO. 1 TO EXISTING
–L– STA. 15+50.00 TO STA. 16+00.00

**DESIGN EXCEPTION – LANE WIDTH, SHOULDER WIDTH AND BRIDGE WIDTH

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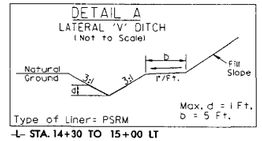
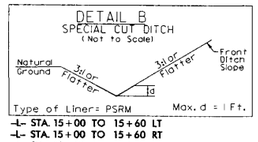
8/17/99

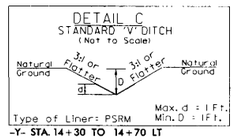
REVISIONS



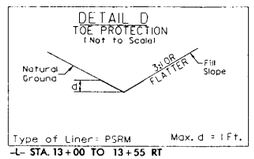
-L- STA. 14+30 TO 15+00 LT
-L- STA. 14+34 TO 15+00 RT



-L- STA. 15+00 TO 15+60 LT
-L- STA. 15+00 TO 15+60 RT
-L- STA. 12+50 TO 12+80 LT
-Y- STA. 13+90 TO 14+30 LT



-Y- STA. 14+30 TO 14+70 LT

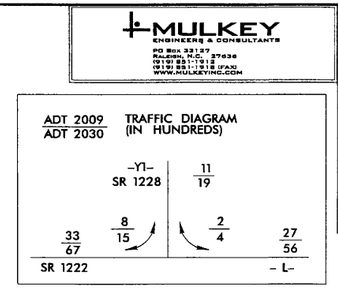


-L- STA. 13+00 TO 13+55 RT

NAD 83 NC GRID

NATIONAL REGISTER - HISTORIC DISTRICT BOUNDARY

-L-	-Y-
PI Sta 11+68.97	PI Sta 15+45.83	PI Sta 14+22.83
△ = 5° 04' 21.5" (RT)	△ = 0° 25' 56.8" (RT)	△ = 17° 10' 41.7" (RT)
D = 2° 08' 00.0"	D = 1° 07' 32.4"	D = 27° 56' 57.0"
L = 237.78'	L = 38.42'	L = 61.46'
T = 118.97'	T = 19.21'	T = 30.96'
R = 2,685.74'	R = 5,090.00'	R = 205.00'
SE = NC	SE = NC	SE = 04
DS = 35 mph	DS = 35 mph	DS = 25 mph



MULKEY
ENGINEERS & CONSULTANTS
PO Box 33157
Raleigh, NC 27636
(919) 851-1212
(919) 851-1213 (FAX)
www.mulkeyinc.com

PROJECT REFERENCE NO.	SHEET NO.
B-4094	4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

FOR -L- PROFILE SEE SHEET 5

EVELYN BALLANCE CREEKMORE
WILL 89-E-47

ROBERT E. LEE
DB 105 PG 787

JOSEPHINE MARIA WEST
DB 191 PG 251

SARA C. BELL LIFE ESTATE
WILL 78-E-87

WINNIE W. HUMPHRIES
DB 132 PG 348

MOYOCK BAPTIST CHURCH
DB 81 PG 51

CURRITUCK CO. BOARD OF EDUCATION
NO DEED FOUND

J. MARTIN JARVIS
DB 379 PG 901

LENORE E. FERRELL
WILL 89-E-109

WILLIAM A. THORN, III
NO DEED FOUND

WILLIAM A. THORN, III
DB 404 PG 915

OLD BROTHERS, LLC.
DB 492 PG 88
DB 51 PG 371 (MAP)

MARK ALLEN CHRISTIAN
DB 431 PG 884

PHYLLIS H. KITCHIN
DB 371 PG 876
DB 256 PG 834
PC D PG 72

MARY P. STOKES
WILL 02-E-43

MARY P. STOKES & CATHERINE P. GILLIKIN
WILL 02-E-43

HOLLY ANN HALL
DB 784 PG 794

JEFFREY LEWIS SHIFLETT
DB 508 PG 782

GEES GROUP OF NC, INC
DB 1019 PG 34

-Y- POT Sta. 13+00.00
-EY- POT Sta. 13+00.00

BEGIN CONSTRUCTION
-Y- POT Sta. 13+90.00

-Y- PT Sta. 14+53.32

N 50° 12' 21.5" E

-L- POT Sta. 10+00.00

-Y- PC Sta. 13+91.86

-L- PINC Sta. 13+04.88
-Y- POT Sta. 14+87.80

-BL- 7 9+47.32
(-L- 13+30.26 29.50' LT)
(-Y- 14+60.90 28.11' LT)

N 33° 01' 39.8" E

N 56° 57' 59.0" W

N 35° 14' 56.7" W

N 33° 48' 42.9" W

-L- PC Sta. 10+50.00
-EL- PC Sta. 10+50.00

-BL- 6 5+00.00

BEGIN PROJECT B-4094
-L- POC Sta. 12+40.00

-L- PT Sta. 12+87.78

N 51° 21' 37.5" W

-L- PT Sta. 15+65.03

END PROJECT B-4094
-L- POT Sta. 15+60.00

-L- PC Sta. 15+26.62

-L- POT Sta. 18+00.72
-EL- POT Sta. 18+00.00

BM #12
-BL- STA 12+65.04
204.84' RT
ELEV= 3.29'

SPECIAL CUT DITCH SEE DETAIL B

CLASS B RIP RAP EST. 3 TONS EST. 10 SY FIL FAB

STANDARD V DITCH SEE DETAIL C EST. 10 CY DDE

LATERAL V DITCH SEE DETAIL A EST. 15 CY DDE

CLASS B RIP RAP EST. 2 TONS EST. 7 SY FIL FAB

RETAIN

GRAU-350

GRAU-350 (TL-2)

TRANSITION

CLASS II RIP RAP STRUCTURE PAY ITEM

END SHOULDER BERM GUTTER -L- 14+78

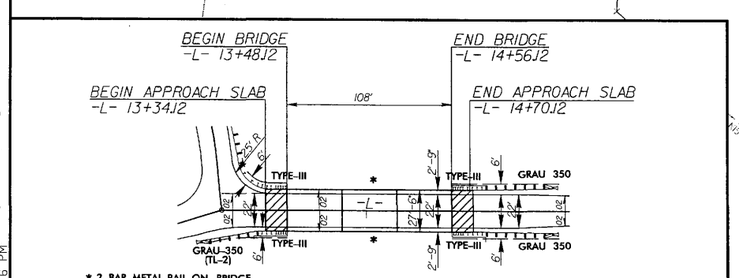
BEGIN SHOULDER BERM GUTTER -L- 13+26

TOE PROTECTION SEE DETAIL D

LATERAL V DITCH SEE DETAIL A EST. 10 CY DDE

SPECIAL CUT DITCH SEE DETAIL B

NATIONAL REGISTER - HISTORIC DISTRICT BOUNDARY



* 2 BAR METAL RAIL ON BRIDGE

SKETCH SHOWING RELATIONSHIP OF BRIDGE TO PAVEMENT AND SHOULDERS

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MULKEY ENGINEERS & CONSULTANTS
PROJECT REFERENCE NO. B-4094 | SHEET NO. 5
ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER

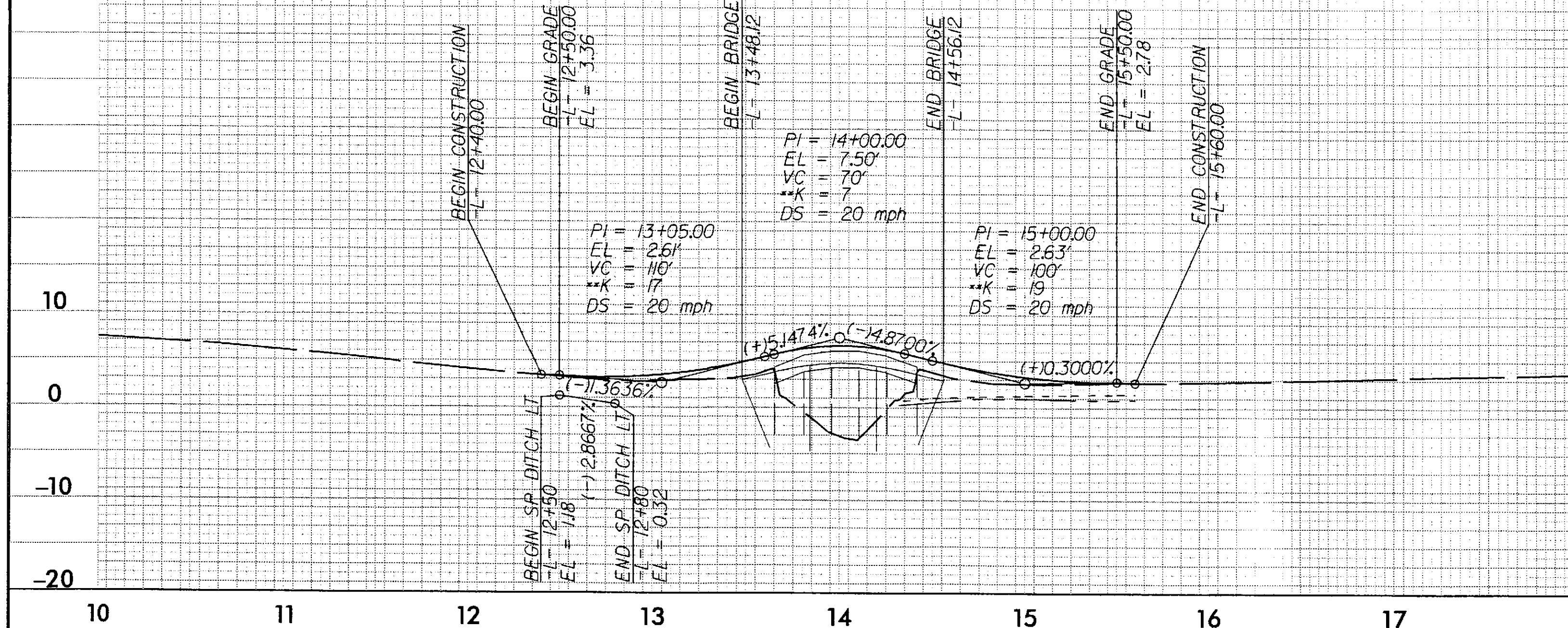
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

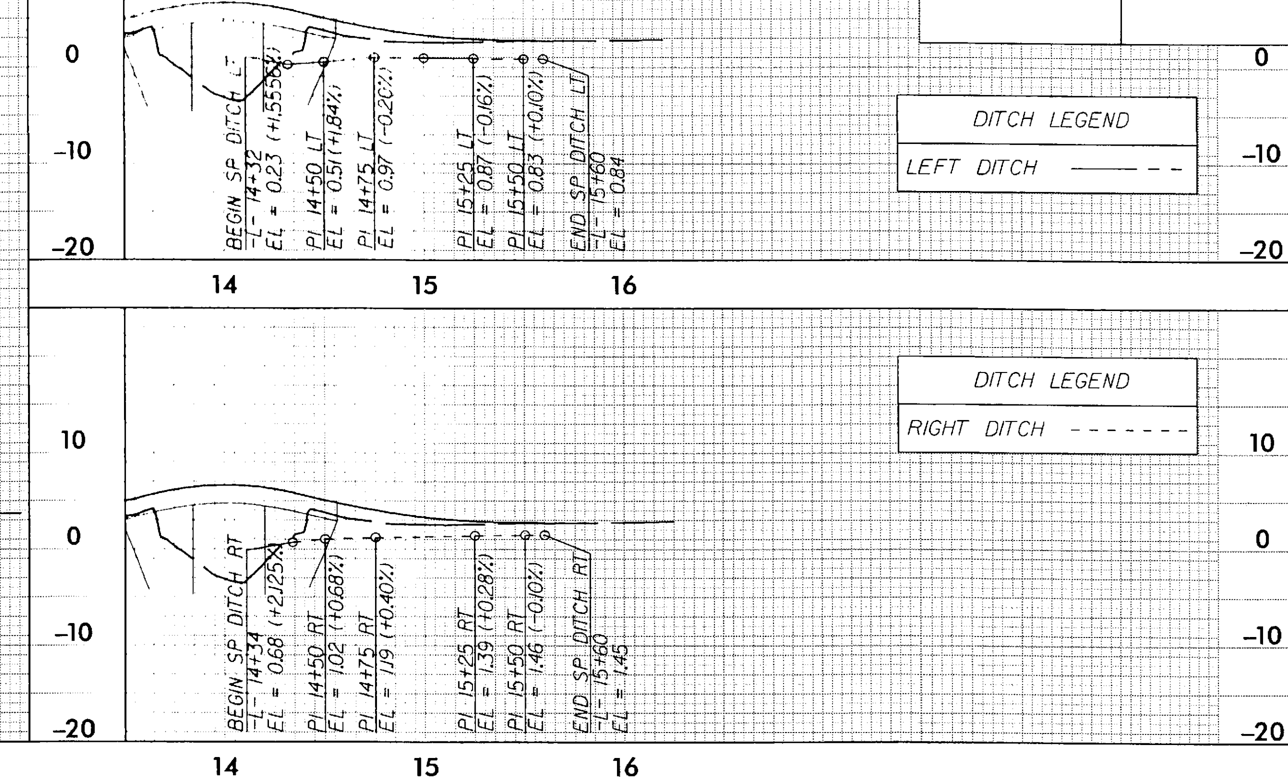
-L-

FOR -L- PLAN VIEW SEE SHEET 4

BM-#12
RAILROAD SPIKE IN 15" CYPRESS
-BL- 12+65.04 204.84' RT
EL = 3.29'

**DESIGN EXCEPTION - SAG VERTICAL CURVE K AND CREST VERTICAL CURVE K



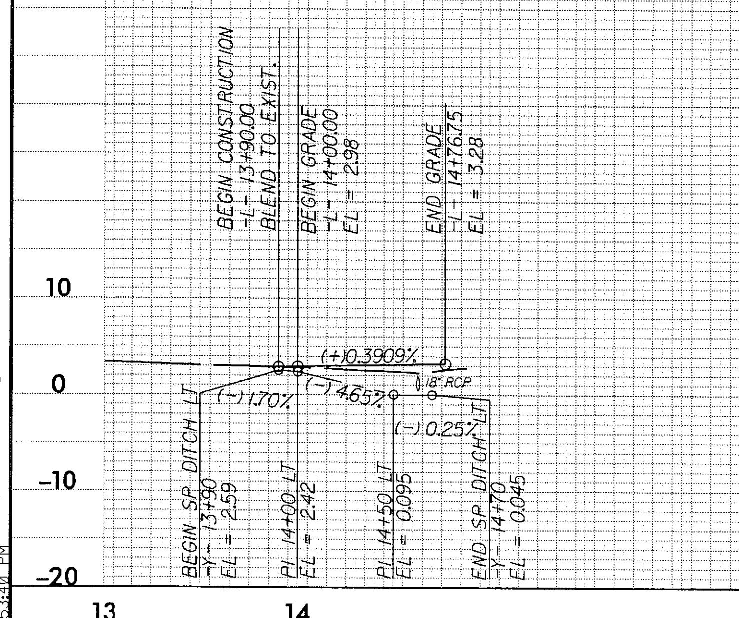


BRIDGE HYDRAULIC DATA

DESIGN DISCHARGE	= 1060 CFS
DESIGN FREQUENCY	= 25 YRS
DESIGN HW ELEVATION	= 3.1 FT
BASE DISCHARGE	= 1860 CFS
BASE FREQUENCY	= 100 YRS
BASE HW ELEVATION	= 4.5 FT
OVERTOPPING DISCHARGE	= 950 CFS
OVERTOPPING FREQUENCY	= 10+ YRS
OVERTOPPING ELEVATION	= 2.77 FT
DATE OF SURVEY	= 2/6/07
W.S. ELEVATION AT DATE OF SURVEY	= 0.3

-Y-

FOR -Y- PLAN VIEW SEE SHEET 4



PIPE HYDRAULIC DATA

DRAINAGE STRUCTURE NO.

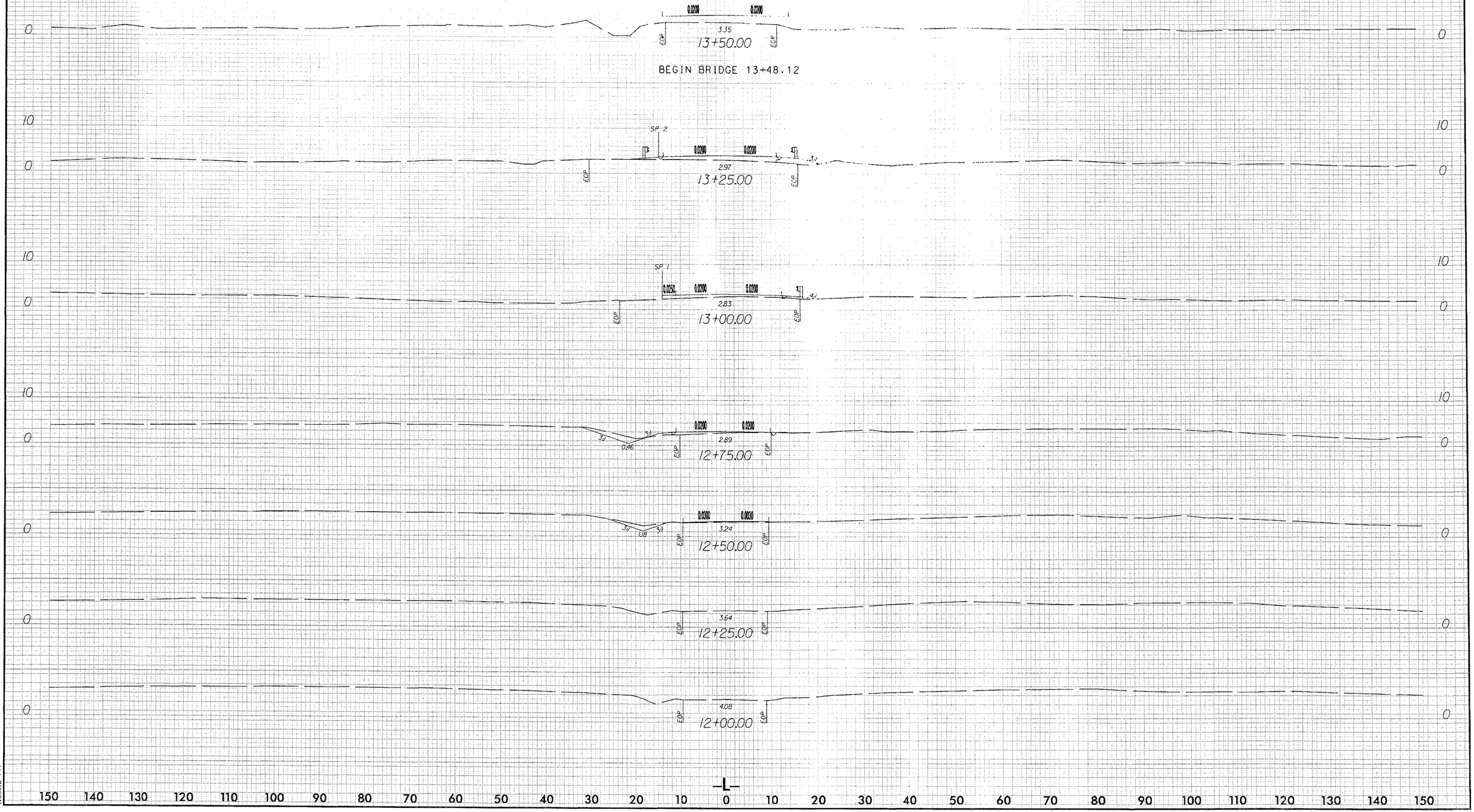
DRAINAGE AREA	= 3.2 AC
DESIGN FREQUENCY	= 25 YRS
DESIGN DISCHARGE	= 8.6 CFS
DESIGN HW ELEVATION	= 2.2 FT
100 YEAR DISCHARGE	= 10.3 CFS
100 YEAR HW ELEVATION	= 2.5 FT
OVERTOPPING FREQUENCY	= 500+ YRS
OVERTOPPING DISCHARGE	= 13 CFS
OVERTOPPING ELEVATION	= 3.0 FT

10
0
-10
-20

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	B-4094	X-2

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150



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0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	B-4094	X-3

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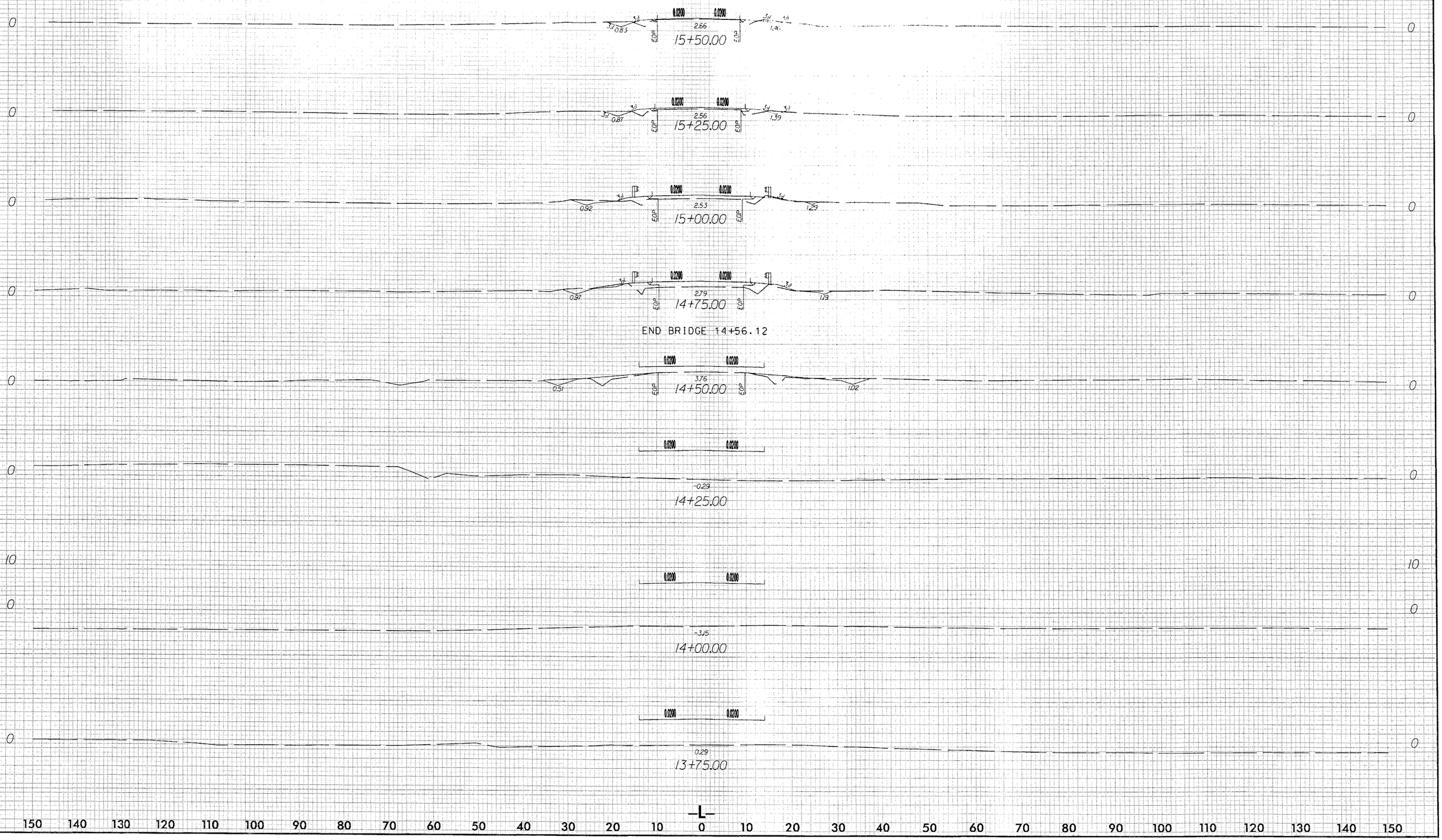

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	B-4094	X-4

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

0

EOP

276

16+00.00

EOP

0

0

EOP

271

15+75.00

EOP

0

–L–

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

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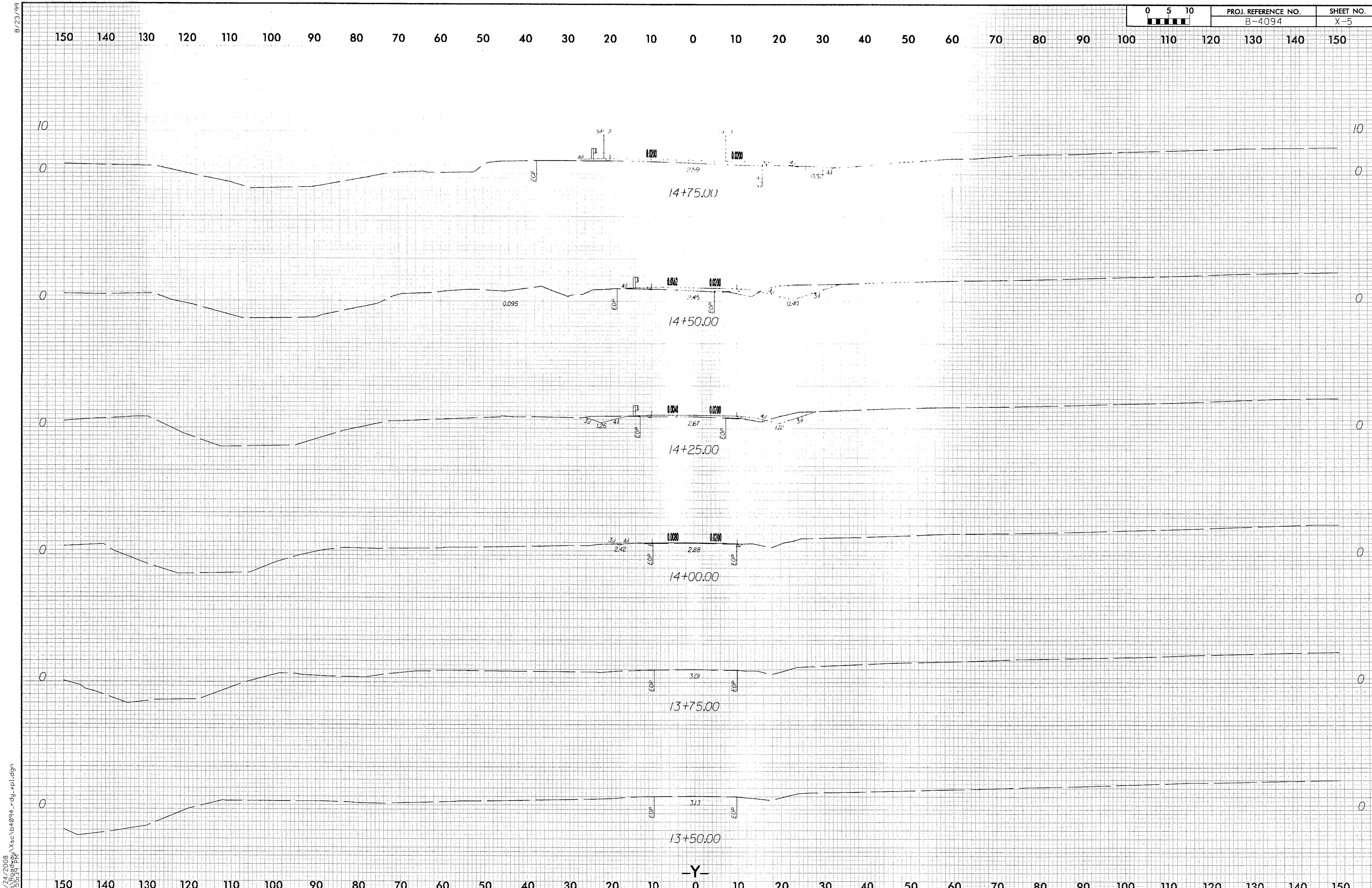
	B-4094	X-5



CURRITUCK COUNTY
BRIDGE NO. 28 ON SR 1222 OVER SHINGLE LANDING CREEK
FEDERAL-AID PROJECT NO. BRZ-1222(6)
STATE PROJECT NO. 8.2040401
WBS NO. 33452.1.1
T.I.P. NO. B-4094

CATEGORICAL EXCLUSION

UNITED STATES DEPARTMENT OF TRANSPORTATION

FEDERAL HIGHWAY ADMINISTRATION

AND

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

DIVISION OF HIGHWAYS

APPROVED:

02/15/05
Date

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

02/15/05
Date

for John F. Sullivan, III, PE
Division Administrator
Federal Highway Administration

CURRITUCK COUNTY
BRIDGE NO. 28 ON SR 1222 OVER SHINGLE LANDING CREEK
FEDERAL-AID PROJECT NO. BRZ-1222(6)
STATE PROJECT NO. 8.2040401
WBS NO. 33452.1.1
T.I.P. NO. B-4094

CATEGORICAL EXCLUSION

FEBRUARY 2005

DOCUMENT PREPARED BY:
MULKEY ENGINEERS & CONSULTANTS
CARY, NORTH CAROLINA

2-10-05
Date

J. A. Bissett, Jr.
J. A. Bissett, Jr., P.E.
Raleigh Branch Manager

2-10-05
Date

Pamela R. Williams
Pamela R. Williams
Project Manager

FOR THE NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

2/14/05
Date

Khaled Al-Akhdar
Khaled Al-Akhdar
Project Manager
Consultant Engineering Unit

PROJECT COMMITMENTS

CURRITUCK COUNTY
BRIDGE NO. 28 ON SR 1222 OVER SHINGLE LANDING CREEK
FEDERAL-AID PROJECT NO. BRZ-1222(6)
STATE PROJECT NO. 8.2040401
WBS NO. 33452.1.1
T.I.P. NO. B-4094

In addition to the standard Nationwide Permit No. 23 Conditions, the General Nationwide Permit Conditions, Section 404 Only Conditions, Regional Conditions, State Consistency Conditions, NCDOT's Guidelines for Best Management Practices for the Protection of Surface Waters, Erosion and Sediment Control Guidelines for Contract Construction, General Certification Conditions, and Section 401 Conditions of Certification, the following special commitments have been agreed to by NCDOT:

DIVISION ENGINEER/ROADWAY DESIGN/PROJECT DEVELOPMENT & ENVIRONMENTAL ANALYSIS BRANCH

The project will comply with the NCDOT policy entitled *Stream Crossing Guidelines for Anadromous Fish Passage.* A moratorium on in-water construction and demolition is in effect from February 15 to June 30.

Precautionary Guidelines for General Construction in Areas Which May be Used by the West Indian Manatee in North Carolina will be implemented as applicable.

All work within the limits of the Moyock Historic District will be contained within the existing highway right of way.

CURRITUCK COUNTY
BRIDGE NO. 28 ON SR 1222 OVER SHINGLE LANDING CREEK
FEDERAL-AID PROJECT NO. BRZ-1222(6)
STATE PROJECT NO. 8.2040401
WBS NO. 33452.1.1
T.I.P. NO. B-4094

INTRODUCTION: The replacement of Bridge No. 28 is included in the North Carolina Department of Transportation (NCDOT) 2004-2010 Transportation Improvement Program (T.I.P.) and in the Federal-Aid Bridge Replacement Program. The location of the bridge is shown in Figure 1. No substantial environmental impacts are anticipated. The project is classified as a Federal "Categorical Exclusion."

I. PURPOSE AND NEED STATEMENT

NCDOT Bridge Maintenance Unit records indicate that Bridge No. 28 has a sufficiency rating of 26.6 out of a possible 100 for a new structure. The bridge is considered functionally obsolete and structurally deficient.

II. EXISTING CONDITIONS

Bridge No. 28 is located on SR 1222 (Tulls Creek Road) over Shingle Landing Creek. It is within the city limits of Moyock, North Carolina (Figure 1). SR 1222 is classified as a rural local route by the statewide functional classification system. Land use in the project area is predominantly residential and woodlands.

The 2005 estimated average daily traffic (ADT) volume is 2,000 vehicles per day (vpd) on SR 1222. The projected ADT is 5,600 vpd by the year 2030. The percentage of truck traffic is 3% dual tired vehicles (DUALS) and 1% truck-tractor semi trailer (TTST). The posted speed limit is 35 miles per hour (mph).

Bridge No. 28 was built in 1967 with a crest over Shingle Landing Creek (Figure 2). The existing structure is 77 feet in length, which consists of 5 spans at approximately 15 feet. The clear roadway width is 24.8 feet, providing two 9-foot travel lanes. The superstructure consists of a timber floor on timber joists with an asphalt wearing surface. The substructure is a timber abutment design. The interior bents consist of timber caps on timber piles. Bridge No. 28 has a posted weight limit of 9 tons for single vehicles (SV) and 16 tons for TTST.

The existing bridge deck has a total thickness of 1.8 feet and is 8.2 feet above the creek bed at the peak of the bridge. The normal water depth of Shingle Landing Creek is approximately 4.5 feet. Boating traffic is restricted to small recreational watercraft.

SR 1222 has two 9-foot lanes with approximately 2-foot grass shoulders. The approach on SR 1222 from the north is tangent. A three-way stop intersection with SR 1228 (Shingle Landing Road) is located approximately 20 feet south of the bridge. SR 1228 approaches SR 1222 from the west and serves as a connector to NC 168.

Fiber optic underground lines are located on the southwest side of SR 1222. Underground telephone cables are present on the west side of SR 1222, and are aerial at Shingle Landing Creek. Utility impacts are expected to be low.

Moyock Elementary School is located approximately 1,000 feet south of the bridge. There are eight school buses that cross Bridge No. 28 twice per day.

There were two accidents reported in the project area from August 2000 to July 2003. Neither accident involved fatalities.

This section of SR 1222 in Currituck County is not part of a designated bicycle route nor is it listed in the T.I.P. as needing incidental bicycle accommodations. Tulls Creek Road has been designated in the County's land use plan as being appropriate for a bike path, and is currently used by cyclists to avoid high volume traffic on Highway 168.

III. ALTERNATIVES

A. BUILD ALTERNATIVES

Two build alternatives were studied for this project (Figures 3A, 3B, and 3C). Descriptions are provided below.

Alternative A involves replacing Bridge No. 28 along the existing alignment (Figure 3A). During construction, traffic will be maintained off-site along existing roads.

The proposed replacement structure consists of a bridge with a clear roadway width of 28 feet. Two 11-foot travel lanes with 3-foot shoulders will be provided. Based on a preliminary hydraulic analysis, the new structure will be approximately 85 feet in length. The roadway grade of the proposed structure will be raised approximately 2.5 feet to provide clearance underneath equivalent to the existing structure. The proposed bridge length may be increased or decreased as necessary to accommodate peak flows as determined by a detailed hydrologic study during final design.

The proposed approach roadway consists of a 22-foot travel way with two 11-foot lanes with 6-foot shoulders (Figure 4). The design speed will be 35 mph. The three-way stop will remain at the intersection of SR 1222 and SR 1228.

Alternative C involves preserving the existing bridge and closing it permanently to vehicular traffic. The bridge will remain accessible to pedestrian and bicycle traffic. A turn around will be provided north of Bridge No. 28 on SR 1222.

- **Alternative C Option 1** maintains current traffic patterns along all roads within the proposed historic district (Figure 3B).
- **Alternative C Option 2 (preferred)** provides one-way traffic along SR 1222 from Moyock Elementary School to Bridge No. 28 traveling north and one-way traffic along SR 1228 to SR 1273 traveling west (Figure 3C). A five-foot multi-use trail will be striped along the one-lane roads. All other roads will remain in the same traffic pattern.

Alternative C Option 2, closing the bridge to vehicular traffic, maintaining access for pedestrian traffic, and revising traffic patterns within the historic district was selected as the preferred alternative.

B. Alternatives Eliminated From Further Study

The "do-nothing" alternative will eventually necessitate removal of the bridge if vehicular traffic continues across the bridge. This is not desirable because of the value that the citizens of Moyock place upon the wooden humpback bridge.

Alternative B involves replacing Bridge No. 28 along the existing alignment. During construction, traffic will be maintained with an on-site temporary bridge detour west of the existing bridge. Alternative B was eliminated because of the additional impacts to wetlands for the on site detour.

C. Preferred Alternative

Alternative C Option 2 (preferred), which closes the bridge to vehicular traffic, maintains access for pedestrian traffic, and revises traffic patterns within the historic district was selected as the preferred alternative. It was selected because the traffic arrangement will minimize traffic in the historic district and in front of Moyock Elementary School. It will also provide safer walking areas in the community, maintains the uniqueness of the hump back wooden bridge, minimizes wetland impacts, and is in agreement with the desires of the citizens in the area.

The NCDOT Division Office concurs with Alternative C Option 2 as the preferred alternative.

IV. Estimated Cost

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

	Alternative A	Alternative C Option 1	Alternative C Option 2 (Preferred)
Structure Removal (Existing)	$ 23,400	$ 0	$ 0
Proposed Structure	$ 257,400	$ 0	$ 0
Roadway Approaches	$ 104,000	$ 34,200	$ 34,200
Miscellaneous and Mobilization	$ 89,200	$ 15,800	$ 15,400
Engineering Contingencies	$ 76,000	$ 10,000	$ 10,000
ROW/Const. Easements/Utilities	$ 153,300	$ 35,400	$ 35,400
TOTAL	$ 703,300	$ 95,400	$ 95,000

The estimated cost of the project as shown in the 2004-2010 Transportation Improvement Program is $850,000, including $100,000 for right-of-way and $600,000 for construction.

V. Natural Resources

A. Methodology

Field investigations along the project study area were conducted by qualified scientists during the month of October 2002. Pedestrian surveys were undertaken to determine natural resource conditions and to document natural communities, wildlife, and the presence of protected species or their habitats.

Published information regarding the project area and region was derived from a number of resources including: USGS 7.5-minute topographic quadrangle map (Moyock, North Carolina), United States Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI) map, NCDOT planimetric maps of the project area, and Natural Resources Conservation Service (NRCS) soil survey maps of Currituck County. Water resources information was obtained from publications of the North Carolina Division of Water Quality (NCDWQ). Information concerning the occurrence of federal and state protected species within the project area and vicinity was gathered from the USFWS list of protected species (updated February 11, 2003) and the North Carolina Natural Heritage Program (NCNHP) database of rare species and unique habitats (January 2004).

Dominant plant species were identified in each strata for all natural communities encountered. Plant community descriptions were based on those classified in Schafale and Weakley (1990), where applicable. These communities were subsequently compared with updated plant community descriptions in Weakley *et al.* (1998, draft). For the context of this report, community classifications have been modified in some instances to better reflect field observations. Names and descriptions of plant species generally follow Radford *et al.* (1968), unless more current information is available. Animal names and descriptions follow Martof *et al.* (1980), Stokes (1996), Rohde *et al.* (1994), and Webster *et al.* (1985). Scientific nomenclature and common names (when applicable) are provided for each plant and animal species listed. Subsequent references to the same organism include the common name only.

During surveys, wildlife identification involved a variety of observation techniques: active searching and capture, visual observations (both with and without the use of binoculars), and observation of the characteristic signs of wildlife (sounds, scats, tracks, and burrows). Organisms captured during these searches were identified and released without injury. Quantitative water sampling was not undertaken to support existing data.

Jurisdictional wetland delineations were performed using the three parameter approach as prescribed in the *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory, 1987). Supplementary technical literature describing the parameters of hydrophytic vegetation, hydric soils, and hydrological indicators was also utilized. Wetland functions were evaluated according to the Division of Water Quality's Rating System, 4th version (1995).

For the purposes of this document, the following terms are used concerning the limits of the natural resources investigations. "**Project area**" is defined as the proposed right-of-way limits along the full length of the proposed alignment. "**Project vicinity**" is defined as a 0.5-mile buffer around the project area. "**Project region**" generally denotes an area equivalent in size to the area represented by a 7.5-minute USGS quadrangle map, i.e. 61.8 square miles. Impacts to natural resources were calculated from the existing right-of-way outward to the proposed slope stake limit. Investigations included an Area of Potential Effect (APE) north of Shingle Landing Creek extending approximately 100 feet outward from the existing

centerline west of SR 1222, and approximately 50 feet outward from the existing centerline east of SR 1222. South of the creek, the APE ranged from 40 to 50 feet outward from the existing centerlines of SR 1222 and SR 1228.

B. Physiography and Soils

Currituck County is situated in the northeastern portion of the lower Coastal Plain physiographic province. The geology of the lower Coastal Plain is composed of undivided surficial deposits of the Quaternary Era. The deposits consist of sand, clay, gravel, and peat deposits in marine, fluvial, eolian and lacustrine environments. This geology is not found on lands with altitudes of greater than 25 feet above mean sea level (MSL), generally the regions west of the Suffolk Scarp (N.C. Division of Land Resources, 1985). Elevations in the project area range from approximately MSL to approximately 10 feet above MSL, as depicted on the Moyock, North Carolina, USGS topographic quadrangle map.

The process of soil development depends on both biotic and abiotic influences. These influences include past geologic activities, nature of parent materials, environmental and human influences, plant and animal activity, time, climate, and topographic position. Three soil associations converge within the project area: Conetoe-Dragston-Munden, Roanoke-Tomotley, and Currituck associations. Soil associations are defined as landscapes that exhibit distinctive proportional patterns of soils consisting of one or more major soils and at least one minor soil. The soils within an association generally vary in slope, depth, stoniness, drainage, and other characteristics (USDA, 1982).

Based on information obtained from USDA (1982), the Conetoe-Dragston-Munden association is comprised of nearly level and gently sloping, well drained, moderately well drained, and somewhat poorly drained soils that exhibit a sandy surface layer and loamy subsoil. The association occupies approximately 16 percent of Currituck County and is present along the southern portion of the study area. It consists of about 33 percent Conetoe soils, 14 percent Dragston soils, 7 percent Munden soils, and 46 percent minor soils consisting of the Augusta, Altavista, Wando, State, Nimmo, Bojac, and Wahee series. The major soils within this association are utilized for cropland, and to a lesser extent, as pasture and woodland. Wetness, leaching of plant nutrients, slow blowing, and drought are the main limitations.

The Roanoke-Tomotley association consists of nearly level, poorly drained soils that have a loamy surface layer and loamy or clayey subsoil. These soils are found along broad flats and in slightly depressed drainage ways along the northern edge of the study area. The Roanoke-Tomotley association covers approximately 22 percent of the county. It consists of nearly 76 percent Roanoke soils, 19 percent Tomotley soils, and 5 percent of minor soils including the Pasquotank, Cape Fear, Portsmouth, and Nimmo soils. The major soils within this unit are utilized mainly for cropland; however, small acreages do exist for pasture and woodland. Wetness and flooding are the main limitations to use and management (USDA, 1982).

The eastern portion of the study area is underlain by the Currituck soil association. This association consists of broad, flat marshes along the Currituck and Albemarle Sounds, including Shingle Landing Creek. It is characterized by nearly level, very poorly drained soils that have a mucky surface layer and sandy underlying material. This unit covers approximately 18 percent of the county. It is comprised of approximately 94 percent Currituck soils and 6 percent soils of minor extent, including the Dorovan and Duckston soils (USDA, 1982). Table 1 identifies and briefly describes the three soil series occurring within the project area: Altavista, Dorovan, and Wahee.

Table 1. Soils Summary – B-4094, Currituck County, NC				
Soil Name	**Taxonomic Name**	**Type**	**Slope**	**General Characteristics**
Altavista (AaA)	Aquic Hapludults	Sandy Loam	0-2%	Moderately well drained soils found along smooth ridges near streams and rivers. Permeability is moderate and the available water capacity is medium. Strongly acidic soil with water table averaging between 1.5 and 2.5 feet below the surface.
Dorovan (Do)*	Typic Medisaprists	Mucky Peat	0-1%	Poorly drained soils on the floodplains of the Currituck Sound and its tributaries. Soil is highly decomposed organic matter. Permeability is moderate and the soil is extremely acidic. The seasonal high water table is at or near the surface.
Wahee (Wa)	Aeric Ochraquults	Fine Sandy Loam	0-2%	Somewhat poorly drained soils on broad ridges. Permeability is slow and available water capacity is medium. Reaction is strongly acid or very strongly acid unless the surface has been limed. The seasonal high water table averages 0.5 to 1.5 feet below the surface.

* Denotes Hydric Soil

Hydric soils are defined as soils that are saturated, flooded, or ponded long enough during the growing season to develop anaerobic conditions that favor the growth and regeneration of hydrophytic vegetation (Environmental Laboratory, 1987). According to the USDA (1991), the Dorovan series is mapped as a "Hydric A" soil.

C. WATER RESOURCES

The project region is in the Pasquotank River basin, a drainage basin covering approximately 3,635 square miles in North Carolina's lower Coastal Plain physiographic province. The Pasquotank River basin includes portions of Camden, Currituck, Dare, Gates, Hyde, Pasquotank, Perquimans, Tyrrell, and Washington Counties. It encompasses numerous small watersheds that empty into Currituck Sound and includes the Albemarle, Croatan, Roanoke, and Pamlico Sounds. Land use within the Currituck County portion of this basin, including the study area, consists of residential, undeveloped swamp forests, and agricultural lands. The geology of the area consists of alternating layers of sand, silt, clay, and limestone.

C.1. WATERS IMPACTED

The project crosses Shingle Landing Creek (identified as Moyock Run by the USGS). Shingle Landing Creek is a tributary of the Northwest River, which empties into Tull Bay, North Landing River, and Currituck Sound. The waters from Currituck Sound drain into the Albemarle and Pamlico Sounds and ultimately into the Atlantic Ocean through Oregon Inlet.

Bridge No. 28 lies within the North Carolina Division of Water Quality (NCDWQ) Subbasin 03-01-54, and USGS Hydrologic Unit 03020105. Subbasin 03-01-54 covers Currituck Sound and the North River and its tributaries in Currituck and Camden Counties. This subbasin contains multiple public lands and Significant Natural Heritage Areas including several National Wildlife Refuges, the Currituck Banks National Estuarine Research Reserve, Northwest River Marsh Game Land, North River Game Land, and portions of the Great Marsh.

C.2. Water Resource Characteristics

Shingle Landing Creek is identified by NCDWQ Stream Index No. 30-1-2-2-1. The project area contains approximately 150 linear feet of the creek. Shingle Landing Creek ranges between approximately 40 and 50 feet in width and 3 to 6 feet in depth through the project area. Both banks are relatively stable and bank height ratios (top of bank elevation/ bankfull elevation) average 1.0. The creek is bordered by a riparian buffer throughout the majority of the project area aside from the area south and east of the bridge, which consists of grass. The bed of Shingle Landing Creek is comprised of sand, silt, and muck. The waters are characteristic of waters in the lower Coastal Plain; stained with little to no flow.

NCDWQ classifies surface waters of the state based on their intended best uses. Shingle Landing Creek and its tributaries are classified as "C; Sw " waters. Class C denotes waters suitable for all general uses including aquatic life propagation and survival, fishing, wildlife, secondary recreation, and agriculture. "Sw" denotes swamp waters, which are topographically located so as to generally have very low velocities and other characteristics which are different from adjacent streams draining steeper topography (NCDWQ, 2002). No High Quality Waters (HQW), Water Supplies (WS-I or WS-II), or Outstanding Resource Waters (ORW) occur within the project area or vicinity.

The Ambient Monitoring System (AMS) is a network of stream, lake, and estuarine water quality monitoring stations strategically located for the collection of physical and chemical water quality data. The type of water quality data or parameters collected is determined by the water bodies' classification and corresponding water quality standards. The AMS determines the "use support" status of water bodies, meaning how well a water body supports its designated uses. The waters in the project area have not been assigned a rating (NCDWQ, 2000). No benthic macroinvertebrate sampling areas exist along Shingle Landing Creek or the Northwest River, downstream of the project area (NCDWQ, 2000).

Point source dischargers located throughout North Carolina are regulated through the National Pollutant Discharge Elimination System (NPDES) program. Dischargers are required by law to register for a permit. According to NCDWQ (2000), there are two permitted NPDES dischargers in the subbasin. These dischargers are listed as minor (<1.0 MGD), non-municipal, and occur outside of the project vicinity. No dischargers are situated upstream of the project area.

C.3. Anticipated Impacts to Water Resources

C.3.a. General Impacts

The primary sources of water quality degradation in rural or undeveloped areas are agriculture and construction. The construction associated with this roadway project will replace some land currently being used for recreation/wildlife and residences, with additional roadway and rights-of-way. Increased impervious areas may introduce elements of degradation to water resources. These elements include hydrocarbons, toxic substances, debris, and other pollutants. Anticipated impacts to water resources may

include additional substrate destabilization, erosion, increased turbidity, altered flow patterns, and possible temperature fluctuations within smaller stream channels caused by the removal of streamside vegetation.

The primary sources of water-quality degradation in developed areas are replacement of natural vegetation with pavement and artificial drainage systems, removal of sound-side buffers, and managed lawns which further reduce the ability of the watershed to filter pollutants before they enter surface waters. Artificial drainage systems, including curb and guttered roadways, also allow urban pollutants to reach surface waters quickly, with little or no filtering. Pollutants include lawn care products such as pesticides and fertilizers, automobile-related pollutants such as fuel and lubricants, and fecal coliform bacteria (from animals and failing septic systems). Concentrated areas of urban development contribute to impaired water quality.

In the short term, construction and approach work could increase sediment loads in the creek and adjacent wetlands. The NCDOT, in cooperation with the NCDWQ, has developed a sedimentation control program for highway projects which adopts formal best management practices (BMPs) for the protection of surface waters and wetlands. The following are some of the standard methods to reduce sedimentation and water quality impacts:

- Strict adherence to BMPs for the protection of surface waters during the life of the project.
- Reduction and elimination of direct and non-point discharge into water bodies and minimization of activities conducted in the water and adjacent wetlands.
- Placement of temporary ground cover or re-seeding of disturbed sites to reduce runoff and decrease sediment loadings.
- Reduction of clearing and grubbing along stream banks.

Precautions will be taken to minimize impacts to water resources in the project area. Construction related impacts to water resources include loss of aesthetic values, substrate destabilization, and increased turbidity of adjacent waters due to sedimentation from runoff and erosion. Aquatic organisms are very sensitive to changes in water quality due to discharges and inputs resulting from construction. Appropriate measures must be taken to avoid runoff, erosion, and spillage. Such measures should include an erosion and sedimentation control plan, provisions for waste materials and storage, stormwater management measures, and appropriate road maintenance measures. The NCDOT's *Best Management Practices for Protection of Surface Waters* and sedimentation control guidelines will be strictly enforced during the construction stages of the project.

C.4. Impacts Related to Bridge Demolition and Removal

Since Bridge No. 28 will remain in place, there will be no impacts associated with bridge demolition and removal.

D. Biotic Resources

This section describes the existing vegetation and associated wildlife for both terrestrial and aquatic communities that occur within the study area. The study area is composed of different vegetative communities based on topography, soils, hydrology, and disturbance. These systems are interrelated and in many aspects interdependent. Potential impacts affecting these communities are also discussed. Scientific nomenclature and common name (when applicable) are provided for each plant and animal species listed. Subsequent references to the same organism include only the common name.

D.1. Plant Communities

Terrestrial communities in the study area are represented by two major community types: cypress-gum swamp and man-dominated community. Community boundaries are frequently ill-defined; contiguous communities generally merge without transition zones. Distribution and composition of these communities reflect variations in topography, soils, hydrology, disturbance, and past and present land uses. The terrestrial communities at the project site separate into relatively distinct zones based on their proximity to the residential homes and elevation above sea level.

D.1.a. Cypress – Gum Swamp (Blackwater Subtype)

Cypress – gum swamp is found in the project area along both sides of the existing right-of-way north of the Shingle Landing Creek crossing and along the southern edge, west of the existing bridge structure. This community occurs as backswamps, sloughs, swales, and featureless floodplains of blackwater rivers. Underlying soils are of both mineral and organic nature. Hydrology is palustrine, seasonally to semipermanently flooded. The dominant canopy species observed within this community were bald cypress (*Taxodium distichum*), blackgum (*Nyssa aquatica*), sweetgum (*Liquidambar styraciflua*), red maple (*Acer rubrum*), laurel and water oaks (*Quercus laurifolia* and *Q. nigra*) and hickories (*Carya* spp.). Shrub and vine species observed were black willow (*Salix nigra*), viburnum (*Viburnum* sp.), silky dogwood (*Cornus amomum*), poison ivy (*Toxicodendron radicans*), cross vine (*Bignonia capreolata*), and muscadine (*Vitis* sp.). The herb layer was very sparse and composed of lizard's tail (*Saururus cernuus*), giant cane (*Arundinaria gigantea*), and royal fern (*Osmunda regalis*).

D.1.b. Man-Dominated Community

The majority of the land use south of the stream crossing is composed of residential communities. In addition, a utility easement is situated along the western side of SR 1222. Both of these areas are maintained on a regular basis either for aesthetic values or access reasons. The vegetation occurring in these areas is kept at a low rate of succession. Species observed were polygonum (*Polygonum* sp.), Japanese honeysuckle (*Lonicera japonica*), false nettle (*Boehmeria cylindrica*), privet (*Ligustrum sinense*), poison ivy, royal fern, and seedlings of American elm (*Ulmus americana*), hickory, and cypress. Surrounding the houses and commercial properties are cultivated grass lawns consisting of St. Augustine grass (*Stenotaphrum secundatum*) and centipede grass (*Eremochloa ophiuroides*).

D.2. Wildlife

Wildlife species identified in the field were based upon sight, sound, or other characteristic signs. Field guides were also utilized to determine additional species that may find suitable habitat in the project area, but were not identified during the site investigation. During the site visit, the weather consisted of rain showers; some heavy at times. This hampered wildlife identification. The cypress-gum swamp community extends both upstream and downstream of Shingle Landing Creek. It provides excellent habitat for many types of wildlife downstream of the project area where development is sparse. Evidence of or direct sightings were made only on a few avian species in the project area. Species observed in the area are indicated with an "*."

Mammal species expected to occur within the two communities at the project site are Virginia opossum (*Didelphis virginiana*), raccoon (*Procyon lotor*), Norway rat (*Rattus norvegicus*), white-footed mouse (*Peromyscus*

leucopus), red bat (*Lasiurus borealis*), and an occasional white-tailed deer (*Odocoileus virginianus*). No mammal species or characteristic signs were observed during the site investigation. In addition, river otter (*Lutra canadensis*) may also occur in the project area, though no signs of existence were observed. The majority of these species, aside from the river otter, likely traverse through both terrestrial communities at the project site.

Reptilian species likely occurring in the project area include five-lined skink (*Eumeces fasciatus*), southeastern five-lined skink (*E. inexpectatus*), six-lined racerunner (*Cnemidophorus sexlineatus*), worm snake (*Carphophis amoenus*), scarlet snake (*Cemophora coccinea*), and possibly ringneck snake (*Diadophis punctatus*). These species likely inhabit both terrestrial communities due to their close proximity to each other. Other species may include eastern box turtle (*Terrapene carolina*), eastern kingsnake (*Lampropeltis getulus*), rat snake (*Elaphe obsoleta*), and eastern ribbon snake (*Thamnophis sauritus*).

Three-lined salamander (*Eurycea guttolineata*), green treefrog (*Hyla cinerea*), gray treefrog (*H. chrysoscelis*) and little grass frog (*Limnaoedus ocularis*) are several of the amphibians potentially occurring in the project area. These amphibians likely occur in the forested portions of the cypress-gum swamp community. Occurrences of amphibians throughout the man-dominated community likely include American toad (*Bufo americanus*) and Fowler's toad (*B. woodhousei*).

Many birds utilize the existing forested, disturbed, and edge-type communities in the project vicinity. Belted kingfisher (*Ceryle alcyon*), great blue heron* (*Ardea herodias*), green heron (*Butorides virescens*), wood duck (*Aix sponsa*), mallard (*Anas platyrhynchos*), black duck* (*Anas rubripes*), and merganser* (*Mergus* spp.) are several of the species that likely occur in close proximity of Shingle Landing Creek. Other species likely occurring throughout the project area are gray catbird (*Dumetella carolinensis*), wood thrush (*Hylocichla mustelina*), Carolina chickadee (*Parus carolinensis*), cardinal (*Cardinalis cardinalis*), mourning dove (*Zenaida macroura*), boat-tailed grackle* (*Quiscalus major*), and European starling* (*Sturnus vulgaris*).

D.3. Aquatic Communities

Shingle Landing Creek is characteristic of blackwater streams throughout the Coastal Plain. It provides spawning and nesting habitat for several anadromous fish species, including blueback herring (*Alosa aestivalis*) and alewife (*A. pseudoharengus*), which return to their natal fresh waters to spawn. Other fish species may include longnose gar (*Lepisosteus osseus*), bowfin (*Amia calva*), American eel (*Anguilla rostrata*), eastern silvery minnow (*Hybognathus regius*), redfin pickerel (*Esox americanus*), eastern mosquitofish (*Gambusia holbrooki*), pumpkinseed (*Lepomis gibbosus*), bluegill (*L. macrochirus*), and yellow perch (*Perca flavescens*).

Animals possibly inhabiting the aquatic communities are river otter and beaver (*Castor canadensis*). Many of the avian species identified above such as great blue heron, green heron, wood duck, mallard, black duck, and merganser are likely present at some time during the year. Snapping turtle (*Chelydra serpentina*), eastern musk turtle (*Stenothernus odoratus*), painted turtle (*Chrysemys picta*), northern water snake (*Nerodia sipedon*), and cottonmouth (*Agkistrodon piscivorus*) are a few of the reptiles potentially occurring within the aquatic areas associated with the project area. Amphibians may include bullfrog (*Rana catesbeiana*) and green frog (*R. clamitans*), as well as eastern newt (*Notophthalmus viridescens*) and two-toed amphiuma (*Amphiuma means*).

Agency representatives from the North Carolina Division of Marine Fisheries (NCDMF), National Marine Fisheries Service (NMFS), USFWS, and the North Carolina Wildlife Resources Commission (NCWRC) requested moratoriums on in-water work. **The project will comply with the NCDOT policy entitled "Stream Crossing Guidelines for Anadromous Fish Passage." All agency representatives requested**

a moratorium on in-water construction and demolition beginning on February 15. The NMFS extended the moratorium to June 1, the USFWS to June 30, and the NCDMF to June 30 (Appendix).

D.4. Anticipated Impacts to Biotic Communities

D.4.a. Terrestrial and Wetland Communities

Temporary fluctuation in populations of animal species that utilize terrestrial areas is anticipated during the course of construction. Slow-moving, burrowing, and/or subterranean organisms will be directly impacted by construction activities, while more mobile organisms will be displaced to adjacent communities. Competitive forces in the adapted communities may result in a redefinition of population equilibria. Table 2 presents anticipated impacts to terrestrial and wetland communities occurring in the project area. No wetlands will be impacted by the preferred alternative.

Table 2. Impacts to Terrestrial and Wetland Communities

Community Type	Alternative A (No On-Site Detour)	Alternative C Options 1 & 2
Cypress-Gum Swamp	0.17 acres	0.0 acres
Man-Dominated Community	0.03 acres	0.09 acres
Totals	**0.20 acres**	**0.09 acres**

D.4.b. Aquatic Communities

Aquatic communities are acutely sensitive to changes in their environment. Environmental impacts from construction activities may result in long-term or irreversible effects to these areas. Impacts associated with in-water construction activities include scouring of the substrate, which can increase siltation and turbidity. This siltation can clog the gills and/or feeding mechanisms of benthic and aquatic organisms. Bridge demolition and construction may also result in discharges of highway construction materials, and pollutants that are detrimental to early life stages of fishery resources. Settling of sediments on aquatic vegetation can reduce or prevent photosynthesis and thereby cause die-off. Table 3 notes impacts to surface waters, both in terms of area and linear feet. Impacts were derived by estimating the footprints of the bridge replacement piers in the water. Linear impacts were calculated by noting the width of the replacement structure over the creek.

Table 3. Impacts to Aquatic Communities

Community	Alternative A (No On-Site Detour)		Alternative C Option 1 & 2	
	Surface Area	Distance	Surface Area	Distance
Shingle Landing Creek	0.02 acres	15.0 linear feet	0	0

E. Special Topics

E.1. "Waters of the United States": Jurisdictional Wetlands

Wetlands and surface waters fall under the broad category of "Waters of the United States" as defined in 33 CFR 328.3 and in accordance with provisions of Section 404 of the Clean Water Act (33 U.S.C. 1344). Waters within the banks of Shingle Landing Creek and adjacent wetlands are considered jurisdictional as Waters of the United States and are regulated by the USACE. The USACE regulatory program is defined in 33 CFR 320-330. Wetlands, defined in 33 CFR 328.3, are those areas that are inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support, and under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Any action that proposes to place fill into these areas falls under the jurisdiction of the USACE under Section 404 of the Clean Water Act (33 U.S.C. 1344).

Jurisdictional wetlands are situated within the APE along both sides of SR 1222. Wetland delineations were conducted on October 28, 2002, using the *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory, 1987). The manual provides guidelines and methods for determining jurisdictional wetlands for purposes of Section 404 of the Clean Water Act. This technical guidance requires that a positive wetland indicator be present for each of the delineation parameters (hydrophytic vegetation, hydric soils, and hydrology). The wetland boundaries were flagged and GPS surveyed. Wetland data forms were also completed for each wetland and its associated upland. In addition, wetland functions and values were qualitatively assessed using the wetland rating worksheet (Fourth Version) provided by NCDWQ. Based on the calculated information, the Cypress-Gum Swamp Community possesses a score of 67 out of a possible 100. Field observations verified that these wetlands are considered above-average quality.

Jurisdictional wetlands within the project area are palustrine in nature (defined in Cowardin *et al.*, 1979). Palustrine wetlands include all nontidal wetlands dominated by trees, shrubs, persistent emergents, emergent mosses or lichens, and all such wetlands that occur in tidal areas where salinity due to ocean-derived salts is below 0.5 percent. Palustrine wetlands are generally less than 20 acres in size. In addition, several other modifiers are placed on this wetland system. The Cypress-Gum Swamp Community is classified as "Palustrine Forested, Broad-leaved Deciduous and Needle-leaved Deciduous, Temporarily Flooded."

The NCDWQ defines a perennial stream as a clearly defined channel that contains water for the majority of the year. These channels usually have some or all of the following characteristics: distinctive streambed and bank, aquatic life, and groundwater flow or discharge. One perennial stream was identified in the project area; Shingle Landing Creek. Detailed stream characteristics are presented in Section C.2. of this report.

E.2. Permits

In accordance with Section 404 of the Clean Water Act (CWA) (33 U.S.C. 1344), a permit is required from the USACE for projects of this type for the discharge of dredged or fill material into Waters of the United States. The USACE issues two types of permits for these activities. A general permit may be issued on a nationwide or regional basis for a category or categories of activities when: those activities are substantially similar in nature and cause only minimal individual and cumulative environmental impacts, or when the general permit would result in avoiding unnecessary duplication or regulatory control exercised by another federal, state, or local agency. This is provided that the environmental consequences of the action are individually and cumulatively minimal. If a general permit is not appropriate for a particular activity, then an

individual permit must be utilized. Individual permits are authorized on a case-by-case evaluation of a specific project involving the proposed discharges.

Section 401 of the Clean Water Act delegates authority to the states for issuing 401 water quality certification for projects that also require a federal permit. A Section 401 General Water Quality Certification is also required for any activity which may result in a discharge into Waters of the United States or for which an issuance of a federal Section 404 permit is required. The USACE can not issue a Section 404 permit until a Section 401 certification is issued. Certifications are administered through the North Carolina Department of Environment and Natural Resources (NCDENR). The NCDOT will coordinate with the USACE and NCDENR after the completion of final design to obtain the necessary permits.

The Rivers and Harbors Act of 1899 (33 U.S.C. 403) prohibits the creation of any obstruction to the navigable capacity of any Waters of the United States without approval of the USACE. Section 10 of this Act requires permits to be issued whenever Section 404 permits are issued for wetlands that are defined as navigable. Section 9 of this Act prohibits the construction of any bridge, dam, dike or causeway over or in navigable waterways of the United States without approval. Structures authorized by State legislatures may be built if the affected navigable waters are totally within one state, provided that the plan is approved by the USACE (33 U.S.C. 401). Under Section 10 of the Act, the building of any wharfs, piers, jetties, and other structures is prohibited without approval, and excavation or fill within navigable waters requires the approval of the USACE.

The DCM provides leadership and guidance in the protection, conservation and management of North Carolina's coastal resources through a comprehensive planning and resource management program. The division carries out the state's Coastal Area Management Act (CAMA), the Dredge and Fill Law, and the federal Coastal Zone Management Act of 1972 (CZMA) using rules and policies of the North Carolina Coastal Resources Commission (CRC). The CRC has established four categories of Areas of Environmental Concern (AEC), which are those areas of natural importance that may be easily destroyed by erosion or flooding or which may have environmental, social, economic, or aesthetic values. The four categories of AECs are the estuarine system, ocean hazard system, public supply waters, and natural and cultural resource areas. Any development in these AECs, including dredging or filling of wetlands or waters and construction of roads and piers, will require a CAMA "major" permit. Major permits are required when activities will also require other state or federal permits. The study area qualifies as an AEC.

The NCDOT is subject to the NPDES stormwater permitting program for roadway construction and material storage facilities. The permit requirements include the implementation of a comprehensive stormwater management program, monitoring of the program, and annual reports to outline the program's effectiveness and direction (NCDWQ, 1997).

The United States Coast Guard (USCG) is responsible for authorizing bridges pursuant to Section 9 of the Rivers and Harbors Act of 1899 and the General Bridge Act of 1946. The purpose of these Acts is to preserve the public right of navigation and to prevent interference with interstate and foreign commerce. Bridge construction or replacement over navigable waters may require USCG authorization pursuant to 33 CFR 114-115. According to USCG letter dated June 5, 2000, Shingle Landing Creek meets the criteria for advance approval waterways outlined in Title 33, "Code of Federal Regulations," Section 115.70. An individual permit will not be required for this project.

E.3. MITIGATION

The USACE has adopted, through the Council on Environmental Quality (CEQ), a mitigation policy which embraces the concepts 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, specifically wetlands. Mitigation of wetland impacts has been defined by the CEQ to include avoidance of impacts (to wetlands), minimizing impacts, rectifying impacts, reducing impacts over time, and compensating for impacts (40 CFR 1508.20). Each of these three aspects (avoidance, minimization, and compensatory mitigation) must be considered in sequential order.

Avoidance examines all appropriate and practicable possibilities of averting impacts to Waters of the United States. According to a 1990 Memorandum of Agreement (MOA) between the United States Environmental Protection Agency (USEPA) 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.

Minimization includes the examination of appropriate and practicable steps to reduce the 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 median widths, right-of-way widths, fill slopes, and/or road shoulder widths. The following methods are suggested to minimize adverse impacts to Waters of the United States:

1. Strictly enforce Best Management Practices (BMPs) to control sedimentation during project construction.
2. Minimize clearing and grubbing activity.
3. Decrease or eliminate discharges into Shingle Landing Creek.
4. Reestablish vegetation on exposed areas with judicious pesticide and herbicide management.
5. Minimize "in-stream" activity.
6. Use responsible litter control practices.

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 each and every permit action. Appropriate and practicable compensatory mitigation is required for unavoidable adverse impacts which remain after all appropriate and practicable minimization has been required. Compensatory actions often include restoration, creation and enhancement of Waters of the United States, specifically wetlands. Such action should be undertaken in areas adjacent to or contiguous to the discharge site.

F. PROTECTED SPECIES

Some populations of fauna and flora have been, or are in the process of decline due to either natural forces or other factors such as their inability to coexist with humans, habitat destruction, and competition with introduced species. Federal law (under the provisions of Section 7 of the Endangered Species Act (ESA) of 1973, as amended) requires that any action likely to adversely affect a species classified as federally-protected be subject to review by the USFWS.

F.1. Federally Protected Species

As of February 11, 2003, (reviewed via internet February 10, 2005) the USFWS identified three endangered species and four threatened species as potentially occurring in Currituck County. Table 4 lists these species and their status. Shortnose sturgeon (*Acipenser brevirostrum*) is not listed by USFWS as occurring in Currituck County, but is included in Table 4 since potential habitat is present for the species at the project site and there is an NCNHP historic record of its occurrence in the county. Descriptions of species and their habitats are presented after the table.

Table 4. Federally Protected Species Potentially Occurring in Currituck County, NC

Scientific Name	Common Name	Federal Status
Acipenser brevirostrum	Shortnose sturgeon*	Endangered
Amaranthus pumilus	Seabeach amaranth	Threatened
Caretta caretta	Loggerhead sea turtle	Threatened
Charadrius melodus	Piping Plover	Threatened
Dermochelys coriacea	Leatherback sea turtle	Endangered
Haliaeetus leucocephalus	Bald eagle	Threatened
Picoides borealis	Red-cockaded woodpecker	Endangered
Trichechus manatus	West Indian manatee	Endangered

Source: USFWS, 2003, (reviewed via internet February 10, 2005)

*Not listed by USFWS for this county but included due to habitat potential in the study area and an NCNHP historic record of the species in the county.

Shortnose sturgeon (*Acipenser brevirostrum*)
Federal Status: ENDANGERED
State Status: ENDANGERED

The shortnose sturgeon was listed as endangered throughout its range on March 11, 1967. It is an anadromous fish that spawns in the coastal rivers along the east coast of North America from the St. John River in Canada to the St. Johns River in Florida. It prefers the nearshore marine, estuarine and riverine habitat of large river systems. Shortnose sturgeon, unlike other anadromous species in the region such as shad or salmon, do not appear to make long distance offshore migrations.

No estimate of the historical population size of shortnose sturgeon is available. While the shortnose sturgeon was rarely the target of a commercial fishery, it often was taken incidentally in the commercial fishery for Atlantic sturgeon. In the 1950s, sturgeon fisheries declined on the east coast which resulted in a lack of records of shortnose sturgeon. This led the USFWS to conclude that the fish had been eliminated from the rivers in its historic range (except the Hudson River) and was in danger of extinction. USFWS believed the population level of the shortnose sturgeon had declined because of pollution and overfishing, both directly and incidentally in shad gillnets.

Shortnose sturgeon occur in most major river systems along the eastern seaboard of the United States. In the southern portion of the range, they are found in the St. Johns River in Florida; the Altamaha, Ogeechee, and Savannah Rivers in Georgia; and, in South Carolina, the river systems that empty into Winyah Bay and the Santee/Cooper River complex that forms Lake Marion. Data are lacking for the rivers of North Carolina. In the northern portion of the range, shortnose sturgeon are found in the Chesapeake Bay system, Delaware River from Philadelphia, Pennsylvania to Trenton, New Jersey; the Hudson River in New York; the Connecticut River; the lower Merrimack River in Massachusetts and the Piscataqua River in New Hampshire; the Kennebec River in Maine; and the St. John River in New Brunswick, Canada.

The sturgeon family is among the most primitive of the bony fishes. The shortnose sturgeon shares the same general external morphology of all sturgeon. Its elongated fusiform body is moderately depressed, and its protractable subterminal mouth with barbels is well suited for bottom feeding and a generally benthic existence. The body surface contains five rows of bony plates or scutes. Sturgeon are large, long-lived fish that inhabit a great diversity of riverine habitat. Sturgeon are found from the fast-moving freshwater riverine environment downstream and, for some species, into the offshore marine environment of the continental shelf.

The shortnose sturgeon is the smallest of the three sturgeon species that occur in eastern North America, having a maximum known total length of 56.3 inches and weight of 51 pounds. Growth rate and maximum size vary with latitude, with the fastest growth occurring among southern populations. Maximum known age is 67 years for females, but males seldom exceed 30 years of age. Sex ratio among young adults is 1:1 but changes to a predominance of females (4:1) for fish larger than 35 inches fork length.

Males and females mature at the same length (18 to 22 inches fork length) throughout their range. However, age of maturation varies from north to south due to a slower growth rate in the north. Generally, females spawn every three years, although males may spawn every year. Juveniles are believed to feed on benthic insects and crustaceans. Molluscs and large crustaceans are the primary food of adult shortnose sturgeon.

Threats

- Construction of dams and pollution of many large northeastern river systems during the period of industrial growth in the late 1800's and early 1900's may have resulted in substantial loss of suitable habitat. In addition, habitat alterations from discharges, dredging or disposal of material into rivers, or related development activities involving estuarine/riverine mudflats and marshes, remain constant threats.
- Commercial exploitation of shortnose sturgeon occurred throughout its range starting in colonial times and continued periodically into the 1950's.

Biological Conclusion: ***May Affect-Not Likely to Adversely Affect***

Technically, suitable habitat for the shortnose sturgeon exists in the project study area. No attempts were made to survey for the species. Informal consultation with the NMFS's Protected Species Office in St. Petersburg, Florida confirmed that there are no historical records for this species in the drainages of the Pasquotank River in Currituck County. The NMFS gave verbal concurrence with the biological conclusion, May Affect-Not Likely to Adversely Affect, and followed with written concurrence in a letter dated June 2, 2004 (Appendix).

Seabeach amaranth (*Amaranthus pumilus*)
Federal Status: THREATENED
State Status: THREATENED

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

Biological Conclusion: *No Effect*

Suitable habitats associated with seabeach amaranth do not exist in the project vicinity. The NCNHP database was searched and there are no historical records for the occurrence of this species in the Moyock area. No overwash flats, dunes, beaches, or dredge spoil sites are present. The project vicinity is moderately to well vegetated and would not support any populations of the species. Therefore, no impacts will occur to seabeach amaranth as a result of project construction.

Loggerhead sea turtle (*Caretta caretta*)
Federal Status: THREATENED
State Status: THREATENED

A medium sized sea turtle, the loggerhead ranges from 31 to 45 inches in length and weighs from 170 to 350 pounds. It is easily identified by reddish-brown coloration. The carapace has five or more costals on each side, with the first one always touching the nuchal. The underside usually has three large scutes on the bridge between the shells. There is also a middorsal keel, although it may be low and inconspicuous in larger turtles. Hatchlings range in size from 1.6 to 1.9 inches and are brown above and either whitish, yellowish, or tan beneath. Young turtles have three dorsal keels and two plastral keels. Loggerhead turtles are nocturnal nesters. Each nest may contain as many as 120 eggs. The hatchlings emerge approximately two months from the time the eggs are laid. This turtle species is carnivorous throughout its life, with the young obtaining food from living fauna of seagrass beds and mats. Loggerheads eat jellyfish, gastropods, crustaceans, mollusks, fish, and squid (NMFS, 1991b).

Biological Conclusion: *No Effect*

The project study area is greater than 10 miles inland from the waters of the Currituck Sound. Ocean access would be via Back Bay in Virginia since Currituck Sound does not have an inlet to the ocean. The species

has been known to travel some distance upstream while foraging, but in this mode its mobility would allow individuals to easily avoid activities associated with bridge replacement. It is the nesting activity that would be of concern and there is no suitable nesting habitat within the project vicinity. A review of NCNHP data confirms that no turtle nesting sites are recorded for the Moyock area. The loggerhead sea turtle will not be impacted as a result of project construction.

Piping plover (*Charadrius melodus*)
Federal Status: THREATENED
State Status: THREATENED

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

Biological Conclusion: *No Effect*

Wintering piping plovers can be found along the North Carolina coast from the fall to the early spring. Recent summer records of breeding bird populations along the Outer Banks coast indicate that piping plovers may be trying to establish a breeding range in North Carolina. Records at the NCNHP confirm that no historical records exist for piping plover nest sites near Moyock. Surveys that were conducted during 1993 along the Pamlico Sound near the Buxton/Cape Point vicinity did not report any sightings of nesting piping plovers. Appropriate nesting habitat for the piping plover does not exist in the project vicinity. Therefore, no impacts will occur to the piping plover as a result of project construction.

Leatherback sea turtle (*Dermochelys coriacea*)
Federal Status: ENDANGERED
State Status: ENDANGERED

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

Biological Conclusion: *No Effect*

The project study area is greater than 10 miles inland from the waters of the Currituck Sound. Ocean access would be via Back Bay in Virginia since Currituck Sound does not have an inlet to the ocean. The species has been known to travel some distance upstream while foraging, but in this mode its mobility would allow individuals to easily avoid activities associated with bridge replacement. It is the nesting activity that would be of concern and there is no suitable nesting habitat within the project vicinity. A review of NCNHP data confirms that no turtle nesting sites are recorded for the Moyock area. The leatherback sea turtle will not be impacted as a result of project construction.

Bald eagle (*Haliaeetus leucocephalus*
Federal Status: THREATENED (Proposed for De-listing)
State Status: ENDANGERED

The bald eagle is a very large bird of prey that is from 32 to 43 inches tall, and has a wingspan of more than 6.0 feet. Adult body plumage is dark brown to chocolate-brown with a white head and tail, while immatures are brown and irregularly marked with white until their fourth year. They are primarily associated with large bodies of water where food is plentiful. Eagle nests are found in close proximity to water [usually within 0.5 miles with a clear flight path to the water], in the largest living tree in an area, with an open view of the surrounding land. Human disturbance can cause nest abandonment. Nests as large of 6.0 feet across are made of sticks and vegetation in the tops of tall trees; these platform nests may be used for many years. Breeding begins in December or January and the young remain in the nest at least 10 weeks after hatching. Bald eagles eat mostly fish robbed from ospreys or picked up dead on the shore. They may also capture small mammals such as rabbits, some birds, wounded ducks and carrion.

Biological Conclusion: ***May Affect-Not Likely to Adversely Affect***

This species is currently under consideration by the USFWS for de-listing. However, this raptor will still be protected under the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act, and populations will continue to be monitored for at least another five years under provisions of the Endangered Species Act. As defined in the literature, suitable habitat technically exists within the study area for the bald eagle. A review of the NCNHP database does not confirm an element occurrence for the bald eagle at or near the project site. Bald eagles are a year-round transient species to this coastal region. No eagles or nests were observed during the field surveys of the project area. No impacts to this species from project construction are anticipated. A copy of the USFWS concurrence letter dated February 18, 2004 is included in the Appendix.

Red-cockaded woodpecker (*Picoides borealis*)
Federal Status: ENDANGERED
State Status: ENDANGERED

This bird is a small, 7.0 to 8.0-inch tall woodpecker with a black and white barred back and conspicuous large white cheek surrounded by a black cap, nape, and throat. Males have a very small red mark at the upper edge of the white cheek and just behind the eye. The red-cockaded woodpecker (RCW) is found in open pine forests in the southeastern United States. The RCW uses open old growth stands of southern pines, particularly longleaf pine, for foraging and nesting habitat. A forested stand optimally should contain at least 50 percent pine and lack a thick understory. The RCW is unique among woodpeckers because it nests exclusively in living pine trees. These birds excavate nests in pines greater than 60 years old that are

contiguous with open, pine dominated foraging habitat. The foraging range of the RCW may extend 500 acres and must be contiguous with suitable nesting sites.

Living pines infected with red-heart disease (*Formes pini*) are often selected for cavity excavation because the inner heartwood is usually weakened. Cavities are located from 12 to 100 feet above ground level and below live branches. These trees can be identified by "candles," a large encrustation of running sap that surrounds the tree. Colonies consist of one to many of these candle trees. The RCW lays its eggs in April, May, and June; the eggs hatch approximately 38 days later.

Biological Conclusion: ***No Effect***

Suitable habitat for RCW does not exist within the project area. There are no stands of pine-dominated forest within the project area that have trees $\geq$ 10 inch in diameter. Furthermore, NCNHP data confirm that no records exist for the occurrence of RCW in the Moyock vicinity. Proposed project construction will not impact this species.

West Indian manatee (*Trichechus manatus*)
Federal Status: ENDANGERED
State Status: ENDANGERED

The West Indian manatee is a Sirenian, which is sometimes called a sea cow. They are large mammals that spend their entire lives in water. These manatees are about 10 feet long and can weigh as much as 1,000 pounds. Their forelimbs are modified to form flippers, their hind limbs are reduced to nothing more than a vestigial pelvis, and their tail is enlarged and flattened horizontally to form a fluke or paddle. Their nostrils are located on top of their snouts and are closed by valves when they surface to breathe about every three to four minutes. The lips are large and mobile, and they are covered with stiff bristles. Manatees are herbivores whose main food sources are submerged, emergent, and floating aquatic plants, but they will occasionally eat small fish. They can consume as much as 10 percent of their body weight in wet vegetation each day. Manatees spend their time eating, resting, and traveling. Between October and April, or months when the water temperature falls below 70 degrees Fahrenheit, they can be found in warm coastal waters or near warm water outfalls around southern Florida. During summer months, they may migrate as far north as coastal Virginia in search of an adequate food supply (USFWS, 1993).

Biological Conclusion: ***May Affect-Not Likely to Adversely Affect***

Threats are mainly due to human activities and include boat or barge collisions, habitat loss, crushing or drowning in flood gates and canal locks; cold-related illnesses, ingestion of fish hooks and monofilament line, entanglement in crab trap lines and fishing trawl nets; and pollution. Critical habitat areas have been designated in Florida as required by the current recovery plan. Other objectives of the recovery plan that are also applicable outside these designated critical habitat areas include minimization of alterations, degradation, and destruction of habitat used by the manatees. The project area is greater than 10 miles from the Currituck Sound. Preferred food sources including submerged, emergent, or floating aquatic plants are very sporadic throughout the project vicinity. A review of the NCNHP database confirms that there are no records for the manatee at or near the project site. No impacts to this species are anticipated during project construction; however, the NCDOT will coordinate with the USFWS in regard to construction moratoriums and other methods to potentially protect the species during construction. A copy of the USFWS concurrence letter dated February 18, 2004 is included in the Appendix.

F.2. Federal Species of Concern

Federal Species of Concern (FSC) are not legally protected under the Endangered Species Act and are not subject to any of its provisions, including Section 7, until they are formally proposed or listed as Threatened or Endangered. Species designated as FSC are defined as taxa which may or may not be listed in the future. These species were formerly Candidate 2 (C2) species or species under consideration for listing for which there is insufficient information to support listing.

Some of these species are listed as Endangered, Threatened, or Special Concern by the NCNHP list of rare plant and animal species and are afforded state protection under the State Endangered Species Act and the North Carolina Plant Protection and Conservation Act of 1979. Table 5 provides the Federal Species of Concern in Currituck County and their state classifications.

On occasion, NCNHP records differ from USFWS records. Sometimes a species may be listed by one agency and not the other, or there may be discrepancies in whether the species record is considered Historic or Obscure. The USFWS listing is deferred to in this report for species spellings and listings as FSC's. Both agency records are noted in the table regarding Historic and Obscure status.

Table 5. Federal Species of Concern Potentially Occurring in Currituck County and State Status.

Scientific Name	Common Name	Federal Status	State Status	Habitat Requirements	Habitat Available
Ludwigia brevipes	Long beach seed box	FSC	SR-T	Lake shores and marshes	No
Laterallus jamaicensis	Black rail	FSC	SR	Brackish marshes, rarely freshwater marshes (breeding season only)	No
Trillium pusillum var. virginianum	Virginia least trillium	FSC	E	Mesic to swampy hardwood forests	Yes

F.3. Summary of Anticipated Impacts

Jurisdictional wetlands are not anticipated to be impacted by the proposed project. Efforts have been made to minimize the impacts by closing the bridge to vehicular traffic. No impacts to protected species are anticipated as a result of project construction.

VI. Cultural Resources

A. Compliance Guidelines

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

B. Historic Architecture

A field survey of the Area of Potential Effects (APE) was conducted on May 31, 2000. All structures over 50 years of age within the APE were identified and recorded, and later reviewed by the North Carolina State Historic Preservation Office (HPO). Historic resources were found in the project area and a study was conducted. A *Historic Architectural Resources Survey Report* submitted in February 2001 determined that Bridge No. 28 was not eligible for listing in the National Register of Historic Places. Moyock Historic District was determined eligible for listing in the National Register of Historic Places.

In a memorandum dated June 13, 2001 the State Historic Preservation Officer (SHPO) concurred with the findings of the Historic Architectural Resources Survey Report. Moyock Historic District is eligible under Criterion A for community development as a representative of revitalization of small communities in rural northeastern North Carolina; and Criterion C for architectural significance as a representative example of late nineteenth and early twentieth-century building types in relatively unaltered condition. A copy of the memorandum is included in the Appendix.

A concurrence form, dated August 30, 2004, documents HPO concurrence that the preferred Alternative C Option 2 affects the Historic District due to changing the traffic pattern on SR 1222 from the school to Bridge No. 28 from two lanes of traffic to one way traffic traveling north. The effect is not adverse because minimal work will be required at the district end near Bridge No. 28 and all work will be contained in the existing right of way.

C. Archaeology

The HPO, in a memorandum dated June 29, 2000 stated, "We have conducted a review of the project and are aware of no properties of ... archaeological significance which would be affected by the project. Therefore, we have no comment on the project as currently proposed." A copy of the HPO memorandum is included in the Appendix.

VII. Environmental Effects

The project is expected to have an overall positive impact. Closing the bridge to vehicular traffic and changing the traffic pattern to a one way street will provide Moyock Historic District's a more pedestrian and bicycle friendly community and minimize traffic in front of Moyock Elementary School.

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

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

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

No adverse impact on families or communities is anticipated. Right-of-way acquisition will be limited. No relocations of residents or businesses are expected with implementation of the proposed alternative.

In compliance with Executive Order 12898 (Federal Actions to Address Environmental Justice in Minority Populations and Low Income Populations) a visual review of the project area was conducted to determine whether minority or low-income populations were receiving disproportionately high and adverse human health or environmental impacts as a result of this project. The investigation determined the project would not disproportionately impact any minority or low-income populations.

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

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

The Farmland Protection Policy Act requires all federal agencies or their representatives to consider the potential impacts to prime and important farmland soils by all land acquisition and construction projects. Prime and important farmland soils are defined by the Natural Resources Conservation Service (NRCS). Since the proposed bridge will remain at the existing location the Farmland Protection Policy does not apply.

The project is located in Currituck County, which has been determined to be in compliance with the National Ambient Air Quality Standards. 40 CFR Parts 51 and 93 are not applicable, because the proposed project is located in an attainment area. This project is not anticipated to create any adverse effects on the air quality of this attainment area.

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

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

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

An examination of records at the North Carolina Department of Environment and Natural Resources, Division of Water Quality, Groundwater Section and the North Carolina Division of Solid Waste Management revealed no hazardous waste sites in the project area. If any unregulated underground storage tanks or any potential source of contamination is discovered during right-of-way initial contacts with impacted property owners, then an assessment will be conducted to determine the extent of any contamination at that time.

Currituck County is currently participating in the National Flood Insurance Program. This crossing of Shingle Landing Creek is in an approximate flood hazard zone. A floodway modification will not be required since the bridge will remain in place. A copy of the Flood Insurance Rate Map showing the approximately limits of the 100-year flood plain in the vicinity of the project is included in the Appendix (Figure 5).

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

VIII. Public Involvement

Efforts were undertaken early in the planning process to contact local officials to involve them in the project development with scoping letters. Scoping letters were also sent to various agencies.

A Local Officials Meeting and Citizens Informational Workshop was held at Moyock Elementary School on July 11, 2000. The preliminary alternative to replace the bridge at existing location with road closure was reviewed and discussed with concerned citizens and officials. Approximately 48 citizens attended the workshop. Concerns and suggestions expressed by meeting participants included:

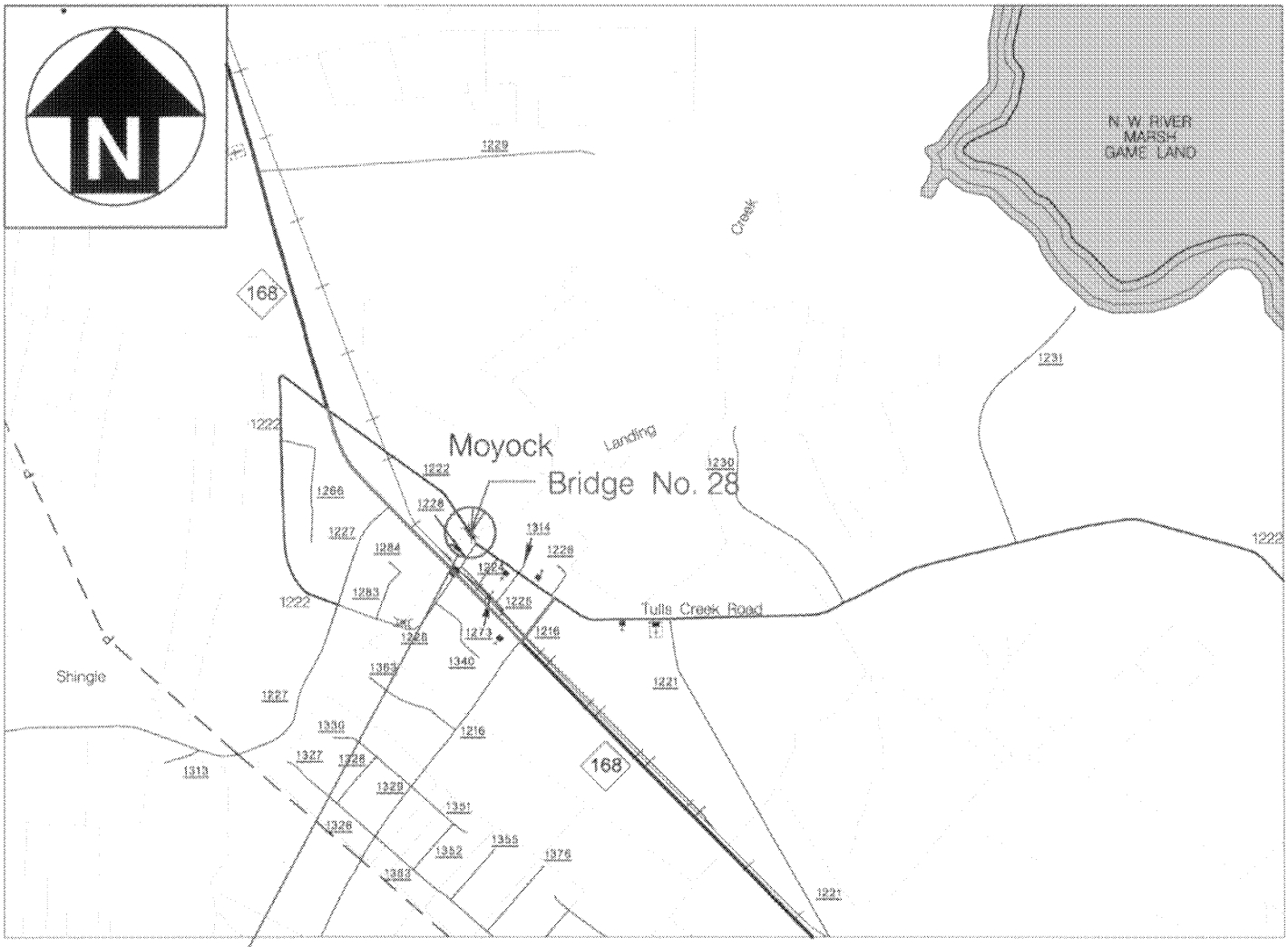
- Designating the bridge and the area south as a historic district.
- Providing the bridge with wooden rails.
- Keeping the hump in the bridge.
- Safety.
- Widening the bridge for pedestrians.

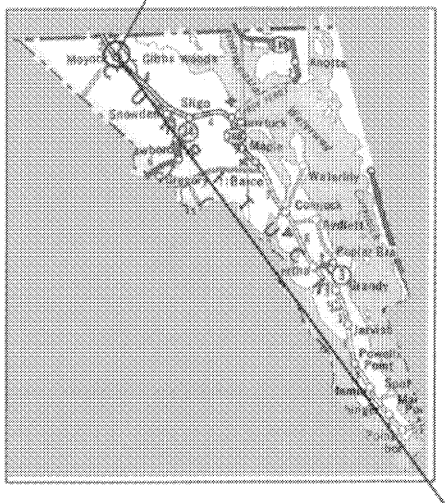
A meeting was held November 18, 2003 with representatives from Moyock and NCDOT at the County Commissioner's Room in Currituck to explore ideas to replace or not replace Bridge No. 28. Retaining Bridge No. 28 and slowing the traffic down through the historic district are of great interest to the community. Alternatives suggested to present to the public included closing the bridge to vehicular traffic (Alternative C) and replacing the bridge at the existing location with an off-site detour during construction (Alternative A).

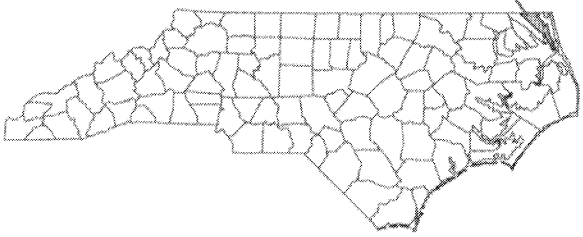
A second workshop was held on January 13, 2004 at Moyock Elementary School to present Alternatives A and C. Approximately 29 citizens attended. Citizens received comment sheets to fill out and their concerns were taken into consideration as the project progressed.

IX. Agency Comments

All comments from agencies and local officials have been addressed elsewhere in the document.





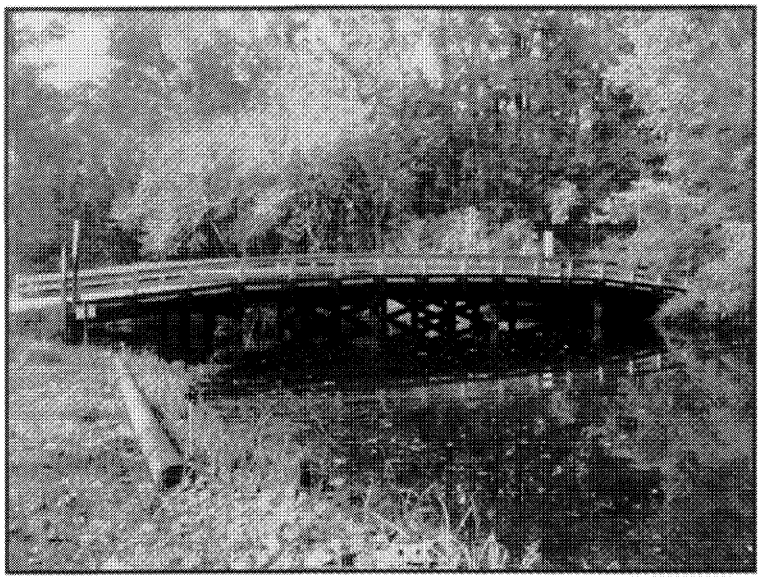


PROPOSED DETOUR ROUTE

North Carolina Department of Transportation
Project Development & Environmental Analysis

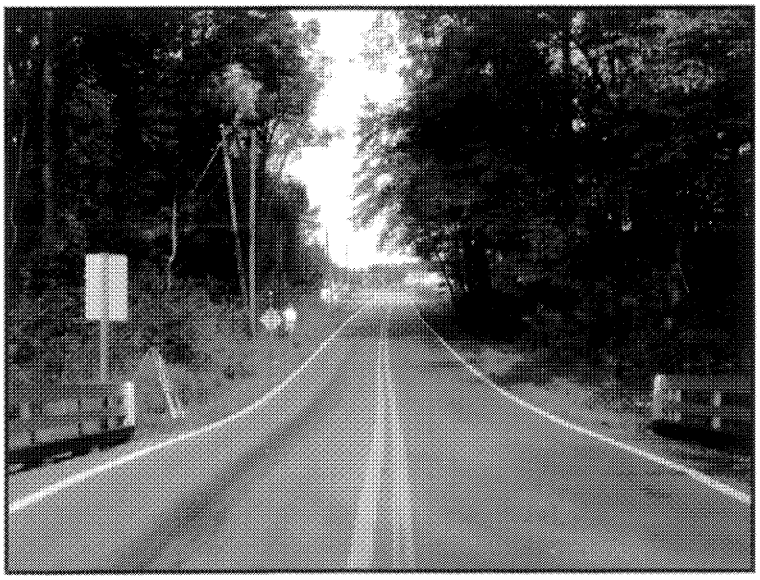
CURRITUCK COUNTY
BRIDGE NO. 28
ON TULLS CREEK ROAD (SR 1222)
OVER SHINGLE LANDING CREEK
B-4094

FIGURE 1



Bridge No. 28

View of south approach to
Bridge No. 28



View of north approach to
Bridge No. 28

FIGURE 2

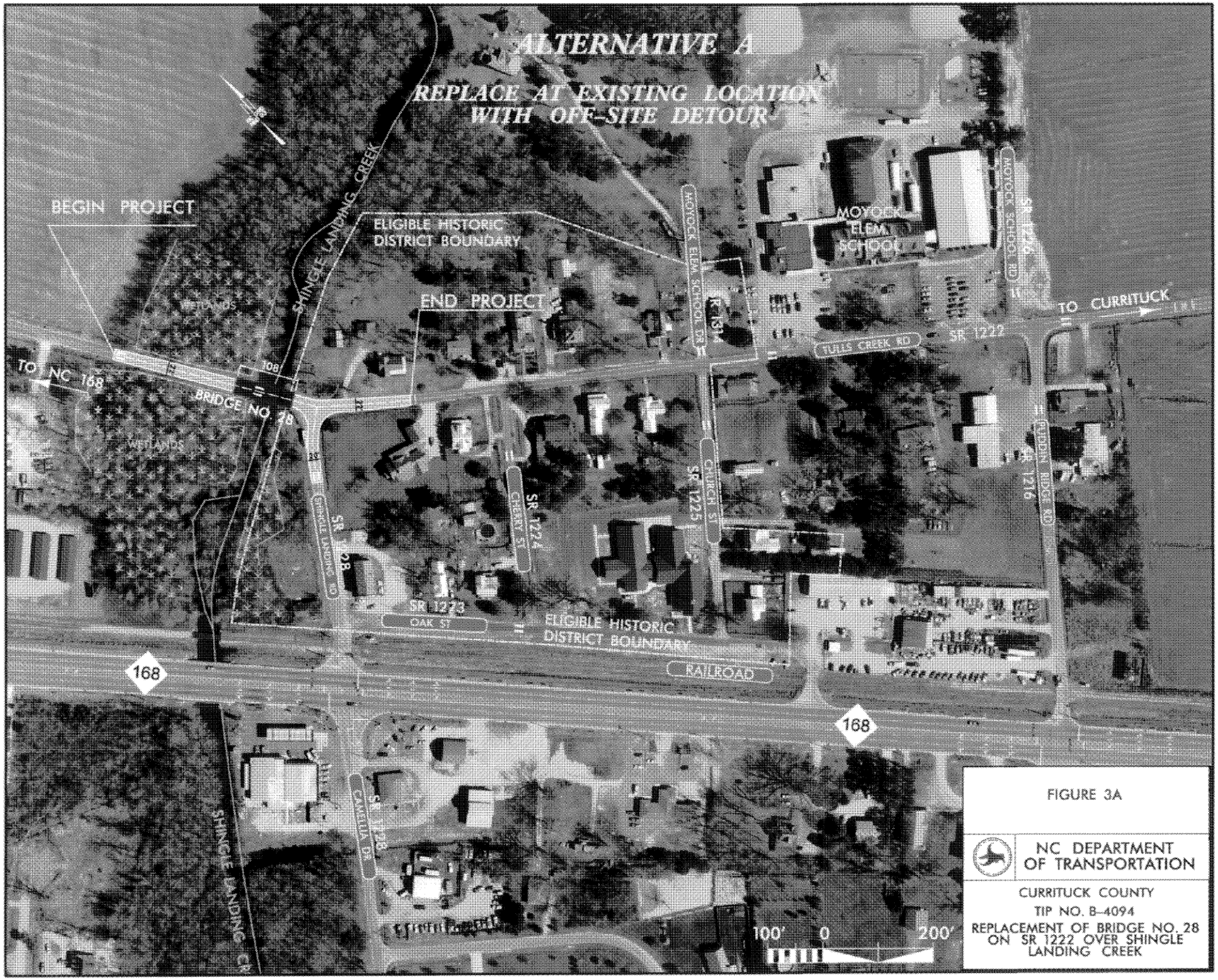


FIGURE 3A

NC DEPARTMENT OF TRANSPORTATION

CURRITUCK COUNTY

TIP NO. B-4094

REPLACEMENT OF BRIDGE NO. 28 ON SR 1222 OVER SHINGLE LANDING CREEK

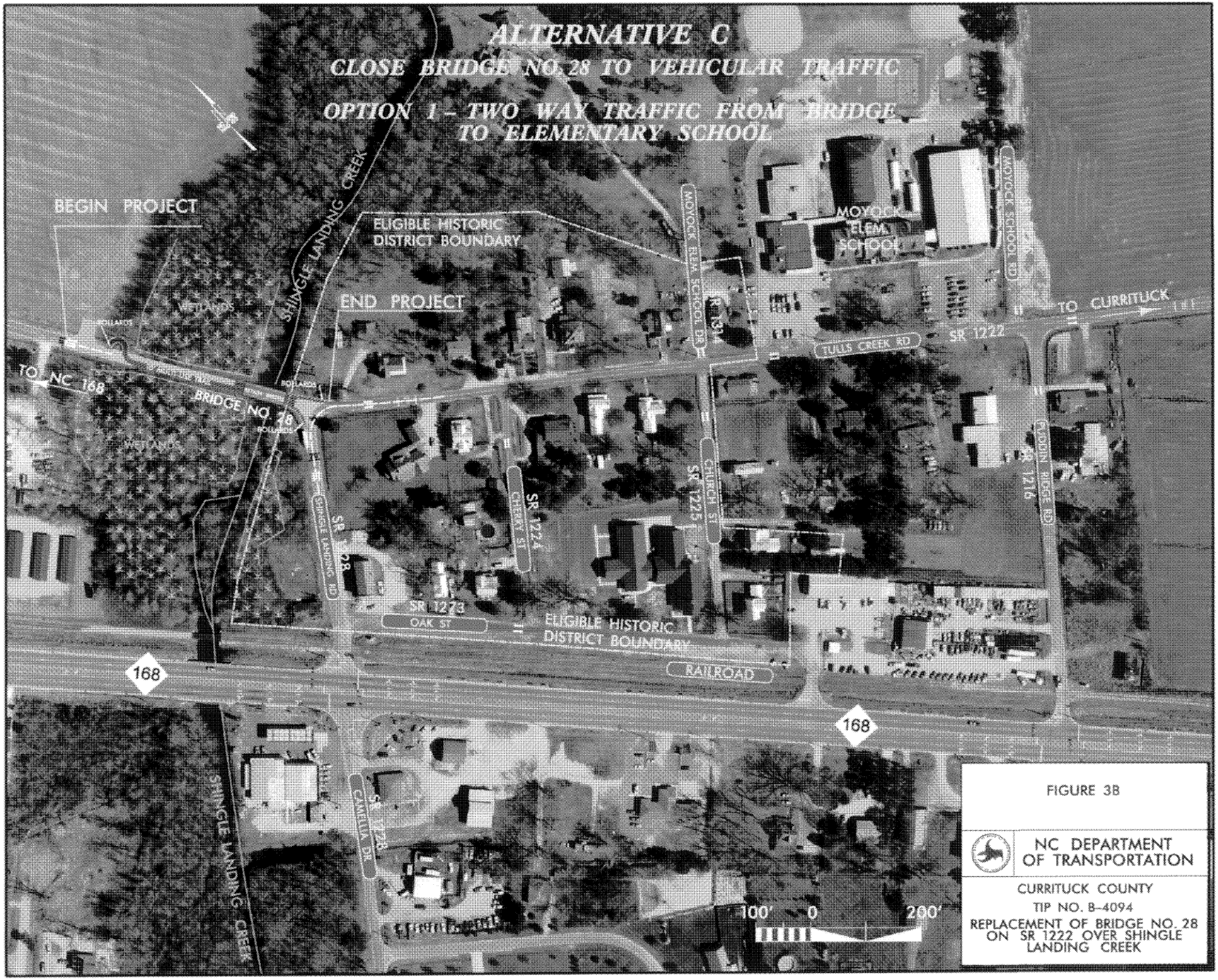


FIGURE 3B

NC DEPARTMENT OF TRANSPORTATION

CURRITUCK COUNTY

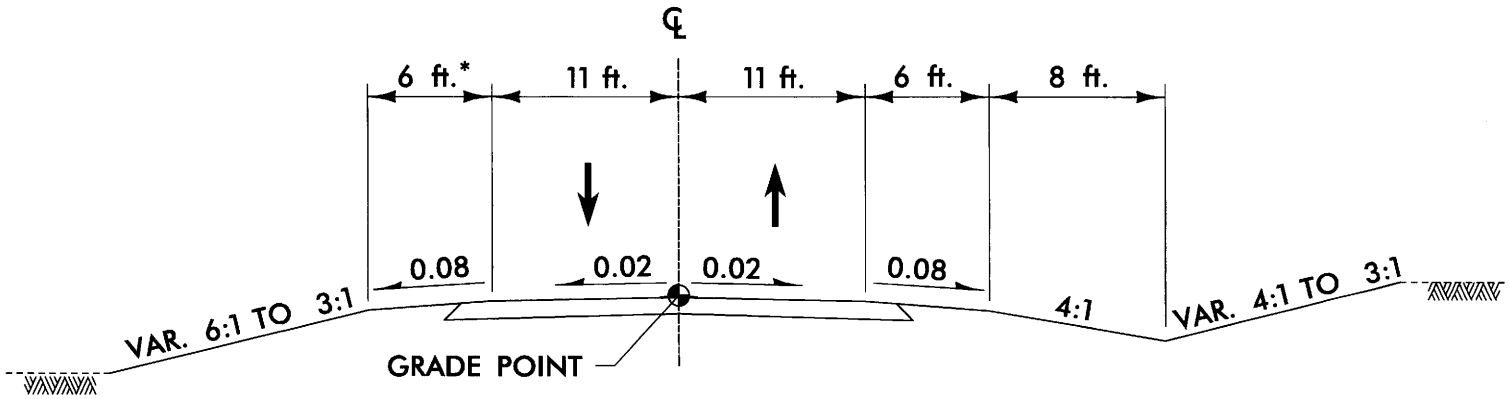
TIP NO. B-4094

REPLACEMENT OF BRIDGE NO. 28 ON SR 1222 OVER SHINGLE LANDING CREEK

FIGURE 3C
(PREFERRED)

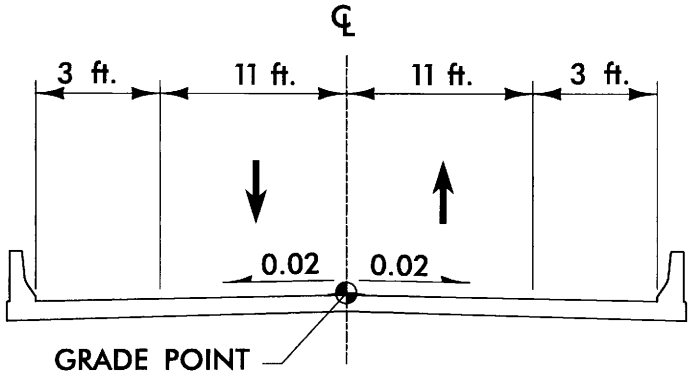
NC DEPARTMENT OF TRANSPORTATION

CURRITUCK COUNTY
TIP NO. B-4094
REPLACEMENT OF BRIDGE NO. 28 ON SR 1222 OVER SHINGLE LANDING CREEK



TYPICAL APPROACH SECTION
(PROPOSED)

* 9 ft. WHEN GUARDRAIL IS WARRANTED



TYPICAL BRIDGE SECTION
(PROPOSED)

TRAFFIC DATA

(EXISTING)	2005 ADT	=	2,000
(CONST. YR.)	2006 ADT	=	2,300
(DESIGN YR.)	2030 ADT	=	5,600
DUAL	3 %		
TTST	1%		

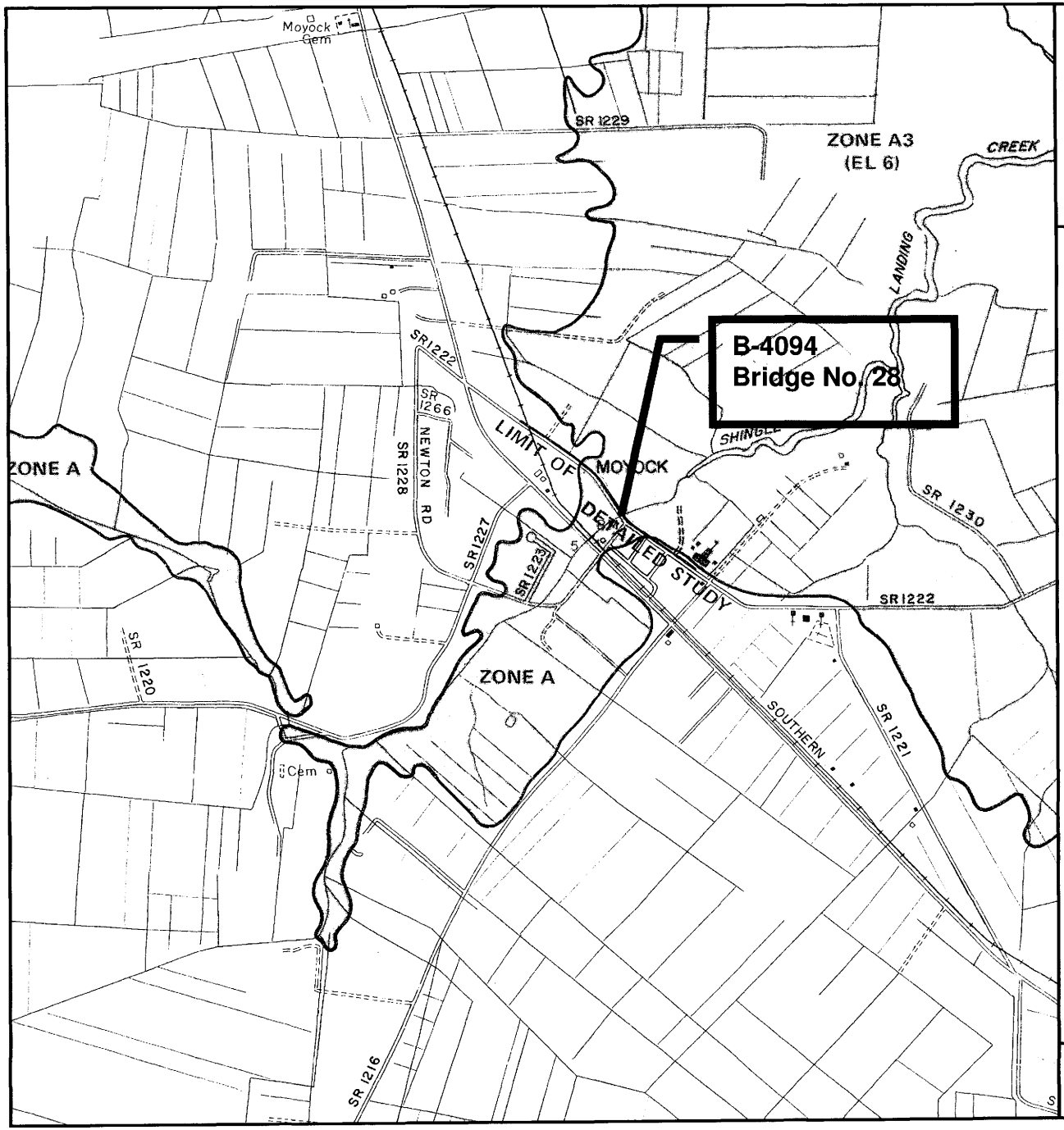
FUNCTIONAL CLASSIFICATION :
LOCAL – RURAL

North Carolina Department
Of Transportation
Project Development &
Environmental Analysis

CURRITUCK COUNTY
BRIDGE NO. 28 ON SR 1222
(TULLS CREEK RD)
OVER SHINGLE LANDING CREEK
TIP NO: B–4094

FIGURE 4

1014/02



N

APPROXIMATE SCALE

2000 0 2000 FEET

NATIONAL FLOOD INSURANCE PROGRAM

FIRM

FLOOD INSURANCE RATE MAP

CURRITUCK COUNTY,
NORTH CAROLINA
(UNINCORPORATED AREAS)

PANEL 50 OF 425
(SEE MAP INDEX FOR PANELS NOT PRINTED)

COMMUNITY-PANEL NUMBER
370078 0050 C

EFFECTIVE DATE:
NOVEMBER 1, 1984

Federal Emergency Management Agency

FIGURE 5

APPENDIX

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Southeast Regional Office
9721 Executive Center Drive North
St. Petersburg, FL 33702
(727) 570-5312; Fax 570-5517
http://sero.nmfs.noaa.gov

JUN 2 2004

F/SER3:JAM

Mr. T. Lindsey Riddick
Project Development and Environmental Analysis Branch
North Carolina Department of Transportation
1548 Mail Service Center
Raleigh, NC 27699-1548

Dear Mr. Riddick:

This responds to your January 20, 2004, letter regarding the replacement of bridge No. 28 over Shingle Landing Creek on SR 1222 in Currituck County, North Carolina. We have reviewed the material submitted by the North Carolina Department of Transportation (NCDOT), with respect to possible effects on the species listed and the critical habitat designated under the Endangered Species Act (ESA) under the purview of the National Marine Fisheries Service (NOAA Fisheries). This consultation is being conducted with the NCDOT as designated by the Federal Highways Administration, North Carolina Division (letter dated April 8, 2003), pursuant to 50 CFR 402.08.

Replacement of bridge No. 28 on SR 1222 will consist of removal of the existing bridge and construction of the new bridge within the existing alignment. The project location is in Shingle Landing Creek, which you have described as potentially providing suitable habitat for shortnose sturgeon. The endangered shortnose sturgeon (*Acipenser brevirostrum*) occurs within the state of North Carolina; however, there have been no documented records of this species within the drainage of the Pasquotank River in Currituck County. Therefore, NOAA Fisheries believes it is unlikely that shortnose sturgeon will occur in the project area and we concur with your finding that the proposed project is not likely to adversely affect the shortnose sturgeon, nor will the action impact habitat of the listed species to the extent that it would actually injure or kill the listed species, because the action will not result in the permanent modification of the habitat.

This concludes your consultation responsibilities under section 7 of the ESA. A new consultation should be initiated if there is a take, if new information reveals effects of the action that may affect listed species or critical habitat in a manner or to an extent that was not previously considered; if the identified action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not previously considered; or if a new species is listed or critical habitat designated that may be affected by the identified action.

In addition to its protected species/critical habitat consultation requirements with NOAA Fisheries' Protected Resources Division (PRD) pursuant to section 7 of the ESA, prior to

proceeding with the proposed action the action agency must also consult with NOAA Fisheries' Habitat Conservation Division (HCD) pursuant to the Magnuson-Stevens Fishery Conservation and Management Act's requirements for essential fish habitat (EFH) consultation (16 U.S.C. 1855(b)(2) and 50 CFR 600.905-.930, subpart K). Consultation is not complete until EFH and ESA concerns have been addressed. If you have any questions about EFH consultation for this project, please contact Mr. Ron Sechler, HCD, at (252) 728-5090.

We look forward to continued cooperation with the NCDOT in conserving our endangered and threatened resources. If you have any questions, please contact Ms. Jennifer Moore, natural resource specialist, at (727) 570-5312, or by e-mail at jennifer.moore@noaa.gov.

Sincerely,

Roy E. Crabtree, Ph.D.
Regional Administrator

cc: F/SER4 (R. Sechler)

Ref: I\SER\2004\00251
File: 1514-22.L.2 (NCDOT)

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE

Southeast Regional Office
9721 Executive Center Drive N
St. Petersburg, Florida 33702

July 18, 2000

Colonel James W. DeLony
District Engineer, Wilmington District
Department of the Army, Corps of Engineers
P. O. Box 1890
Wilmington, North Carolina 28402-1890

Attention Mike Bell

Dear Colonel DeLony:

Please reference the June 22, 2000, letter (copy enclosed) from the North Carolina Department of Transportation requesting the National Marine Fisheries Service's comments on the proposed replacement of Bridge No. 28 on SR 1222 (TIP No. B-4094) over Shingle Landing Creek in Currituck County, North Carolina, under the Federal Categorical Exclusion (CE). The letter specifically addresses the potential impacts of demolition, the removal of the existing structure, and environmental concerns in the project area. We have reviewed the information provided with the letter and offer the following comments for consideration.

Shingle Landing Creek, a tributary of the Northwest River and Currituck Sound, provides spawning and nursery habitat for anadromous fishery resources for which we are responsible. Bridge demolition and construction can result in sediment disturbing activities (e.g., placement and removal of piles), discharges of highway construction materials (e.g., asphalt), and pollutants (e.g., petroleum products) that are detrimental to early life history stages of fishery resources. Therefore, in order to minimize adverse impacts to fishery resources, we recommend that this work not be processed under the Federal CE unless the following condition is incorporated:

> "No construction or demolition activities shall be allowed in the waters of Shingle Landing Creek between February 15 and June 1 of any year."

Thank you for the opportunity to provide these comments. If we can be of further assistance, please advise.

Sincerely,

for Andreas Mager, Jr.
Assistant Regional Administrator
Habitat Conservation Division

cc: FWS, ATLA, GA
FWS, Raleigh, NC
EPA, ATLA, GA
NCDENR, Raleigh, NC
NCDENR, Morehead City, NC
NCDOT, Raleigh, NC
F/SER4

United States Department of the Interior

B-4094

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

February 18, 2004

Lindsey Riddick
North Carolina Department of Transportation
Project Development and Environmental Analysis
1548 Mail Service Center
Raleigh, North Carolina 27699-1548

Dear Mr. Riddick:

This letter is in response to your letter of January 21, 2004 which provided the U.S. Fish and Wildlife Service (Service) with the biological conclusion of the North Carolina Department of Transportation (NCDOT) that the replacement of Bridge No. 28 on SR 1222 over Shingle Landing Creek in Currituck County (TIP No. B-4094) may affect, but is not likely to adversely affect the federally listed bald eagle (*Haliaeetus leucocephalus*) and West Indian manatee (*Trichechus manatus*). These comments are provided in accordance with section 7 of the Endangered Species Act (ESA) of 1973, as amended (16 U.S.C. 1531-1543).

The information provided states that a bald eagle nest survey was conducted at the project site, though the information does not state the time the survey was conducted or how far from the project site the survey extended. From a review of recent aerial photography of the site, it appears that the project site and surrounding area provides poor habitat for bald eagles. Shingle Landing Creek and its narrow forested riparian area are likely too small to attract nesting bald eagles. Based on the information provided and other information available, the Service concurs that the project may affect, but is not likely to adversely affect the bald eagle.

Due to the high mobility of the West Indian manatee, and because the project site is located on a stream several miles upstream of a large water body, the Service concurs that the project may affect, but is not likely to adversely affect the West Indian manatee. However, the Service recommends that NCDOT implement the following: *Precautionary Guidelines for General Construction in Areas Which May Be Used by the West Indian Manatee in North Carolina.* A copy of this document is enclosed.

We believe that the requirements of section 7 (a)(2) of the ESA have been satisfied. We remind you that obligations under section 7 consultation must be reconsidered if: (1) new information reveals impacts of this identified action that may affect listed species or critical habitat in a manner not previously considered in this review; (2) this action is subsequently modified in a manner that was not considered in this review; or (3) a new species is listed or critical habitat determined that may be affected by this identified action.

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

Sincerely,

Garland B. Pardue

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

cc: Bill Biddlecome, USACE, Washington, NC
John Hennessy, NCDWQ, Raleigh, NC
Travis Wilson, NCWRC, Creedmoor, NC
Chris Militscher, USEPA, Raleigh, NC

Precautionary Guidelines for General Construction in Areas Which May Be Used by the West Indian Manatee in North Carolina

1. The applicant will inform all personnel associated with the project that manatees may be present in the project area, primarily during the months June through October, and the need to avoid any harm to these endangered mammals. The applicant will ensure that all construction personnel know the general appearance of the species and their habit of moving about completely or partially submerged in shallow water. All construction personnel will be informed that they are responsible for observing water-related activities for the presence of manatees.

2. The applicant will advise all construction personnel that there are civil and criminal penalties for harming, harassing, or killing manatees which are protected under the Endangered Species Act of 1973, as amended, and the Marine Mammal Protection Act of 1972, as amended.

3. If a manatee is seen within 300 ft of the active daily construction/dredging operation or vessel movement, all appropriate precautions must be implemented to ensure protection of the manatee. The precautions must include the operation of all moving equipment no closer than 50 ft of a manatee. Operation of any equipment closer than 50 ft to a manatee must necessitate immediate shutdown of the equipment. Activities will not resume until the manatee has departed the project area on its own volition. Manatees should not be herded away or harassed into leaving.

4. Any collision with and/or injury to a manatee will be reported immediately. The report must be made to the U.S. Fish and Wildlife Service and the North Carolina Wildlife Resources Commission immediately, and dredging should be postponed until cause of injury or mortality can be determined and a revised dredging and or monitoring plan is produced and approved by the Service.

5. A sign must be posted in all vessels associated with the project where it is clearly visible to the vessel operator. The sign should state:

> CAUTION: The endangered manatee may occur in these waters during the warmer months, primarily from June through October. Idle speed is required if operating this vessel in shallow water during these months. All equipment must be shut down if a manatee comes with 50 ft of operating equipment. A collision with and/or injury to a manatee will be reported immediately to the U.S. Fish and Wildlife Service and the North Carolina Wildlife Resources Commission.

6. The applicant/contractor will maintain a log detailing sightings, collisions, or injuries to manatees during project construction. After construction, the applicant/contractor will prepare a report which summarizes all information on manatees during construction. This report will be submitted to the U.S. Fish and Wildlife Service and the North Carolina Wildlife Resources Commission.

7. All vessels associated with the construction project will operate at "no wake/idle" speeds at all times while in water where the draft of the vessel provides less than 4 ft clearance from the bottom. All vessels will follow routes of deep water whenever possible.

8. If siltation barriers must be placed in shallow water, these barriers will be: (a) made of material in which manatees cannot become entangled; (b) secured in a manner that they cannot break free and entangle manatees; and, (c) regularly monitored to ensure that manatees have not become entangled. Barriers will be placed in a manner to allow manatees entry to or exit from essential habitat.

United States Department of the Interior

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

June 22, 2000

Ms. Pamela R. Williams
Wang Engineering Company
119 SW Maynard Road
Cary, NC 27513-8620

Dear Ms. Williams:

Thank you for your letter of May 1, 2000 requesting comments from the U.S. Fish and Wildlife Service (Service) on the proposed replacement of Bridge No. 28 on SR 1222 over Shingle Landing Creek at Moyock, Currituck County, North Carolina (TIP No. B-4094). This report is provided in accordance with provisions of the Fish and Wildlife Coordination Act (FWCA) (16 U.S.C. 661-667d) and Section 7 of the Endangered Species Act (ESA) of 1973, as amended (16 U.S.C. 1531-1543).

The North Carolina Department of Transportation (NCDOT) has retained Wang Engineering Company to prepare the federal Categorical Exclusion for this bridge replacement project. The following comments address Service concerns for potential environmental impacts related to this project.

Enclosed is a summary of federally-listed threatened and endangered species, and Federal Species of Concern (FSC), known to occur in Currituck County. Note: the Dismal Swamp southeastern shrew was de-listed effective February 28, 2000. Species with 3 asterisks behind them indicate an incidental record, i.e. the species was observed outside of its normal range or habitat. Although several of the listed species are obviously associated with coastal beach habitats, the project site should be surveyed by trained personnel for any appropriate listed species and their habitats, and the results of any surveys forwarded to this office for review.

Federal Species of Concern are those plant and animal species for which the Service remains concerned, but further biological research and field studies are needed to resolve the conservation status of these taxa. Although FSC's receive no statutory protection under the ESA, we would encourage the NCDOT to be alert to their potential presence, and to make every reasonable effort to conserve them if found. The North Carolina Natural Heritage Program should be contacted for information on species under state protection.

According to the North Carolina Division of Marine Fisheries, Shingle Landing Creek functions as a spawning and nursery area for the blueback herring (*Alosa aestivalis*) and the alewife (*Alosa*

pseudoharengus). They have recommended a moratorium on all in-water work from February 15 to June 30, and the use of turbidity curtains during and after pile removal. The Service concurs with these recommendations.

It is our understanding that there is a wetland adjoining the project area. Should this project require a Department of the Army permit for work in navigable waters or wetlands of the United States, the Service will provide specific comments upon review of the Public Notice advertising the intent to construct this project.

Thank you for the opportunity to comment on this proposal. Please keep us informed of any changes in project plans. If you have any questions regarding these comments, contact Tom McCartney at (919) 856-4520, ext. 32

Sincerely

Dr. Garland B. Pardue
Ecological Services Supervisor

cc:
COE, Washington, NC (Michael Bell)
NCDOT, Raleigh, NC (Stacy Harris)
NCWRC, Creedmoor, NC (David Cox)
NCDWQ, Raleigh, NC (John Hennessy)

FWS/R4:TMcCartney:TM:06/22/00:919/856-4520 extension 32:\B-4094.tip

N 36.5258
W 76.1775

U.S. ARMY CORPS OF ENGINEERS
WILMINGTON DISTRICT

Action ID **200310159** County **Currituck**

NOTIFICATION OF JURISDICTIONAL DETERMINATION

Property Owner/Agent: **North Carolina Department of Transportation, Attn: Stacey Harris, PDEA**

Address: **1 South Wilmington Street**
Raleigh, North Carolina 27699-1557

Telephone No.: (252) 482-7977

Size and location of property (waterbody, highway name/number, town, etc.) Project is located along NCSR 1222 at Bridge Number 28, just north of NCSR 1228 adjacent to Shingle Landing Creek (Moyock Run).

Indicate Which of the Following Apply:

_ There are waters of the U.S. and/or wetlands, on the above described property which we strongly suggest should be delineated and surveyed. The surveyed wetland lines must be verified by our staff before the Corps will make a final jurisdictional determination on your property.

_ Because of the size of your property and our present workload, our identification and delineation of your wetlands cannot be accomplished in a timely manner. You may wish to obtain a consultant to obtain a more timely delineation of the wetlands. Once the consultant has flagged a wetland line on the property, Corps staff will review it, and, if it is accurate, we strongly recommend that you have the line surveyed for final approval by the Corps. The Corps will not make a final jurisdictional determination on your property without an approved survey.

X The waters of the U.S. and/or wetlands, on your project area have been delineated, and the limits of the Corps jurisdiction have been explained to you. Unless there is a change in the law or our published regulations, this determination may be relied upon for a period not to exceed five years from the date of this notification.

_ There are no waters of the U.S., to include wetlands, present on the above described property which are subject to the permit requirements of Section 404 of the Clean Water Act (33 USC 1344). Unless there is a change in the law or our published regulations, this determination may be relied upon for a period not to exceed five years from the date of this notification.

X The property is located in one of the 20 Coastal Counties subject to regulation under the Coastal Area Management Act (CAMA). You should contact the Division of Coastal Management in Morehead City, NC, at (252) 808-2808 to determine their requirements.

Placement of dredged or fill material in Waters of the US and/or wetlands on this property without a Department of the Army permit may constitute a violation of Section 301 of the Clean Water Act (33 USC 1311). A permit is not required for work restricted entirely to existing non-wetland area. If you have any questions regarding this determination and/or the Corps of Engineers regulatory program, please contact **Bill Biddlecome** at **(252) 975-1616 ext 31**.

Basis For Determination: **The wetlands are a broad continuum and are contiguous to Moyock Run which is a tributary to Northwest River which is a tributary to North Landing River.**

Property Owner/Authorized Agent Signature _____

Corps Regulatory Official William J. Biddlecome

Date **2/13/03** Expiration Date **2/13/08**

SURVEY PLAT OR FIELD SKETCH OF THE DESCRIBED PROPERTY AND THE WETLAND DELINEATION FORM MUST BE ATTACHED TO THE FILE COPY OF THIS FORM

U.S. Department of Transportation
United States Coast Guard

Commander
United States Coast Guard
Atlantic Area

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

Norris

16590
5 June 00

Mr. William D. Gilmore, P.E.
North Carolina Department of Transportation
P.O. Box 25201
Raleigh, North Carolina 27611-5201

Dear Mr. Gilmore:

B-4094

This is in response to your application letter dated May 1, 2000, requesting a Coast Guard permit for a project to replace the bridge (B-28) over Shingle Landing Creek in Currituck County, North Carolina.

Since this stream is subject to tidal influence, it is considered legally navigable for Bridge Administration purposes. This stream at the crossing site also meets the criteria for advance approval waterways outlined in Title 33, Code of Federal Regulations, Section 115.70. Advance approval waterways are those that are navigable in law, but not actually navigated by other than small boats. The Commandant of the Coast Guard has given his advance approval to the construction of bridges across such waterways; therefore, an individual permit will not be required for this project.

If you have any questions regarding this matter, please contact Mr. Terrance Knowles, at the phone number or address shown above.

Sincerely,

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

Copy: NOAA

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

James B. Hunt, Jr., Governor
Bill Holman, Secretary
Preston P. Pate, Jr., Director

NCDENR
NORTH CAROLINA DEPARTMENT OF
ENVIRONMENT AND NATURAL RESOURCES

MEMORANDUM

TO: William D. Gilmore, NCDOT, P.E. Manager
Planning and Environmental Branch
N.C.Division of Highways
P.O. Box 25201
Raleigh, NC 27611

DATE: July 28, 2000

FROM: Michael W. Street

SUBJECT: Draft EIS – Bridge Replacement/Demolition – B-4094 Currituck County, Replace Bridge No. 28 on SR 1222 over Shingle Landing Creek

Attached is the Division's reply for the above referenced project. If you have any questions, please don't hesitate to contact me.

MS/cld
permits\admin\sbcover.ltr

P.O. Box 769, Morehead City, North Carolina 28557-0769 Telephone 919-726-7021 FAX 919-726-0254

NCDENR

JAMES B. HUNT JR.
GOVERNOR

BILL HOLMAN
SECRETARY

DONNA D. MOFFITT
DIRECTOR

NORTH CAROLINA DEPARTMENT OF
ENVIRONMENT AND NATURAL RESOURCES
DIVISION OF COASTAL MANAGEMENT

June 29, 2000

Ms. Stacy Harris
Project Development and Environmental Analysis Branch
State of North Carolina Department of Transportation
1548 Mail Service Center
Raleigh, NC 27699-1548

Dear Ms. Harris:

SUBJECT: Request for Comments on NC DOT Bridge Replacement Project B-4094, Replace Bridge No. 28 on SR 1222 over Shingle Landing Creek in Moyock, Currituck County.

Regulatory staff at the Division of Coastal Management (DCM) have reviewed the Department of Transportation's (DOT's) written request for comments dated 5/8/00 on the project referenced above. DCM also attended a meeting with staff from DOT, Wang Engineering and the U.S. Army Corps of Engineers about the proposed project on 6/21/00.

At the 6/21/00 meeting, DOT stated that only one alternative is being considered, replacing the bridge along the existing alignment. During construction, traffic will be maintained off-site along existing roads.

In accordance with the Coastal Area Management Act (CAMA), this project will require a CAMA Major Permit from DCM prior to construction. Based on the anticipated wetland impacts of 0.39 acres provided at the 6/21/00 meeting, we have determined that this project will not qualify for CAMA General Permit 7H .2300, replacement of existing bridges and culverts in estuarine waters, estuarine shorelines, public trust areas, and coastal wetlands. Specific conditions of CAMA General Permit 7H .2300 state that the total area of public trust area, estuarine waters, and wetlands to be excavated or filled shall not exceed 2,500 square feet except that the wetland component shall not exceed 500 square feet.

During the permitting process, we may have additional comments on the project's environmental impacts, and may place conditions on the permit to minimize any environmental impacts. The information provided in this letter shall not preclude us from requesting additional information throughout the permitting process, and following normal permitting procedures.

Please contact me at (919) 733-2293 x 238 or via e-mail at Cathy.Brittingham@ncmail.net if you have any questions or concerns.

Sincerely,

Cathy Brittingham
Transportation Project Coordinator

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

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

Harris

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

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

NCDENR
North Carolina Department of
Environment and Natural Resources

MEMORANDUM:

TO: William D. Gilmore, NC DOT Project Development and Environmental Analysis Branch

FROM: Sara E. Winslow, Biologist Supervisor SEW

SUBJECT: Bridge Replacement/Demolition – B-4094 Currituck County, Replace Bridge No. 28 on SR 1222 over Shingle Landing Creek

DATE: May 22, 2000

The North Carolina Division of Marine Fisheries has reviewed the information supplied relative to the removal of Bridge No. 28 on SR 1222 in Moyock and submits the following comments. These comments are provided pursuant to General Statute 113-131.

This agency has documented Shingle Landing Creek to function as a spawning and nursery area for blueback herring and alewife. Other commercially and recreationally important species utilize the area.

Due to the importance of the area, this agency requests an in-water moratorium for demolition and construction from February 15 through June 30. Turbidity levels will increase from removal of the piles. This agency would recommend turbidity curtains be employed during pile removal and remain in place until sediments have settled back out.

The Division assumes a new bridge will be constructed once the old one is removed. This agency would request the above mentioned moratorium for new in-water work as well.

Cc: Mike Street

Federal Aid # **BRZ-1222(6)** *TIP #* **B-4094** *County*: **Currituck**

CONCURRENCE FORM FOR ASSESSMENT OF EFFECTS

Project Description: Replace Bridge No. 28 on SR 1222 over Shingle Landing Creek

On August 30, 2004 representatives of the

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

Reviewed the subject project and agreed MOYOCK HD (DOE)

☐ There are no effects on the National Register-listed property/properties located within the project's area of potential effect and listed on the reverse.

☒ There are no effects on the National Register-eligible property/properties located within the project's area of potential effect and listed on the reverse. ALTERNATIVE C OPTION 1

☐ There is an effect on the National Register-listed property/properties located within the project's area of potential effect. The property/properties and the effect(s) are listed on the reverse.

☒ There is an effect on the National Register-eligible property/properties located within the project's area of potential effect. The property/properties and effect(s) are listed on the reverse. ALTERNATIVE A
ALTERNATIVE C - OPTION 2

Signed:

Vanessa E. Patrick 8-30-04
Representative, NCDOT Date

8/30/04
FHWA, for the Division Administrator, or other Federal Agency Date

Erin O. Kane 8/30/04
Representative, HPO Date

Renee Gledhill-Earley 8/30/04
State Historic Preservation Officer Date

Federal Aid # **BRZ-1222(6)** *TIP #* **B-4094** *County:* **Currituck**

Properties within the area of potential effect for which there is no effect. Indicate if property is National Register-listed (NR) or determined eligible (DE).

MOYOCK HD (DOE) – ALTERNATIVE C OPTION 1 (close Bridge 28 to vehicular traffic; maintain 2x traffic through HD)

Properties within the area of potential effect for which there is an effect. Indicate property status (NR or DE) and describe the effect.

MOYOCK HD (DOE) – ALTERNATIVE A (replace Bridge 28 at existing location)
(preferred) ALTERNATIVE C – OPTION 2 (close Bridge 28 to vehicular traffic; 1x traffic on SR 1222 from school to bridge & on SR 1228 from bridge to Oak St.)

Reason(s) why the effect is not adverse (if applicable).

MINIMAL WORK AT DISTRICT END OF BRIDGE 28 (especially ALT. C – OPT. 2)

Initialed: NCDOT VEP FHWA RHA HPO EAK

North Carolina Department of Cultural Resources
State Historic Preservation Office
David L. S. Brook, Administrator

Michael F. Easley, Governor
Lisbeth C. Evans, Secretary

Division of Archives and History
Jeffrey J. Crow, Director

June 13, 2001

MEMORANDUM

To: William Gilmore
Project Development & Environmental Analysis, NCDOT

From: David Brook RSE for David Brook

Re: Replace Bridge 28 on SR 1222 over Shingle Landing Creek, B-4094, Currituck County, ER 01-8988

Thank you for your letter of March 9, 2000, transmitting the survey report by Heather Fernbach for the above project. We apologize for the delay in our response.

The report meets our office's guidelines and those of the Secretary of the Interior. For purposes of compliance with Section 106 of the National Historic Preservation Act, we concur that the following property is eligible for listing in the National Register of Historic Places under the criterion cited:

- Moyock Historic District under Criterion A for community development, as a representative of the revitalization of small communities in rural northeastern North Carolina; and Criterion C for architectural significance, as a representative example of late nineteenth and early twentieth-century building types in relatively unaltered condition. The boundaries shown are appropriate.

The following property was determined not eligible for listing in the National Register of Historic Places:

- Bridge #28 over Shingle Landing Creek

The above comments are offered in accord with Section 106 of the National Historic Preservation Act and the regulations of the Advisory Council on Historic Preservation at 36 CFR 800. If you have any questions concerning them, please contact Renee Gledhill-Earley at 733-4763. Thank you.

cc: Mary Pope Furr, NCDOT
Nicholas Graf, FHwA

	Location	Mailing Address	Telephone/Fax
Administration	507 N. Blount St, Raleigh, NC	4617 Mail Service Center, Raleigh 27699-4617	(919) 733-4763 •733-8653
Restoration	515 N. Blount St, Raleigh , NC	4613 Mail Service Center, Raleigh 27699-4613	(919) 733-6547 •715-4801
Survey & Planning	515 N. Blount St, Raleigh, NC	4618 Mail Service Center, Raleigh 27699-4618	(919) 733-4763 •715-4801

North Carolina Department of Cultural Resources
State Historic Preservation Office

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

Division of Archives and History
Jeffrey J. Crow, Director

July 11, 2000

Mr. William D. Gilmore
Project Development and Environmental Analysis Branch
NCDOT
Raleigh, North Carolina 27611-5201

Re: Replacement of Bridge No. 28 on SR 1222 over Shingle Landing Creek, Currituck County, North Carolina, ER 00-9927

Dear Mr. Gilmore:

One June 29, 2000, our office issued a letter stating that we were aware of no properties of architectural, historic, or archaeological significance which would be affected by the project. We have since discovered that Bridge No. 28 is adjacent to the Moyock Historic District, which was determined eligible for listing in the National Register of Historic Places on April 10, 1995. Therefore, the proposed replacement of Bridge No. 28 on SR 1222 over Shingle Landing Creek is likely to have an effect upon the Moyock Historic District.

We apologize for any inconvenience this may have caused and look forward to further consultation on this project.

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

Thank you for your cooperation and consideration. If you have questions concerning the above comment, please contact Renee Gledhill-Earley, environmental review coordinator, at 919/733-6545.

Sincerely,

Renee Gledhill-Earley

for Davis Brook
Deputy State Historic Preservation Officer

	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
ARCHAEOLOGY	421 N. Blount St., Raleigh NC	4619 Mail Service Center, Raleigh NC 27699-4619	(919) 733-7342/715-2671
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

Hanna

North Carolina Department of Cultural Resources

State Historic Preservation Office

David L. S. Brook, Administrator

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

Division of Archives and History
Jeffrey J. Crow, Director

June 29, 2000

Mr. William D. Gilmore
Project Development and Environmental Analysis Branch
NCDOT
Raleigh, North Carolina 27611-5201

Re: Replacement of Bridge No. 28 on SR 1222 over Shingle Landing Creek, Currituck County, North Carolina, ER 00-9927

Dear Mr. Gilmore:

Thank you for your letter of May 8, 2000, concerning the above project.

We have conducted a review of the project and are aware of no properties of architectural, historic, or archaeological significance which would be affected by the project. Therefore, we have no comment on the project as currently proposed.

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

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

Sincerely,

Renee Gledhill-Earley

for David Brook
Deputy State Historic Preservation Officer

	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
ARCHAEOLOGY	421 N. Blount St., Raleigh NC	4619 Mail Service Center, Raleigh NC 27699-4619	(919) 733-7342 • 715-2671
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

Hassle

COUNTY OF CURRITUCK

Post Office Box 39
Currituck, North Carolina 27929-0039
Telephone (252) 232-2075 / FAX (252) 232-3551
State Courier # 10-69-17

June 29, 2000

Mr. William D. Gilmore, P.E., Manager
Project Development and Environmental Analysis Branch
NC Department of Transportation
P. O. Box 25201
Raleigh, NC 27611-5201

Re: Project 8.2040401, B-4094, Currituck County
Replacement of Bridge No. 28 on SR 1222, Shingle Landing Creek

Dear Mr. Gilmore:

Thank you for the opportunity to comment on the Shingle Landing Creek Bridge replacement (B-4094). To that end, I would like to offer the following comments in preparation for the July 11, 2000 public meeting:

1) The wooden hump bridge is a unique feature that fits with the historical context of the Moyock Community. Replacement with a typical concrete structure will be out of character of the surrounding area. If feasible, the County would like to see the existing bridge strengthened, bringing it up to current safety standards. If that is not feasible, a humpback bridge would do much to maintain the unique feel of the community. The hump bridge also acts as a traffic calming feature by slowing traffic in the area.

2) This area is popular with residents who like fishing. It would be of great value to have a sidewalk on the bridge to accommodate people fishing as well as those who walk.

3) Tulls Creek Road has been designated in the County's land use plan as being appropriate for a bike path. In fact, it is currently being used by people on bicycles who wish to avoid the high volume traffic on Highway 168. Currituck County requests the new bridge be able to accommodate bicycles while maintaining its historic character.

4) The area adjoining the bridge contains wetlands. Filling the bridge approaches will result in loss of wetlands and could cause water flowing down Shingle Landing Creek to back up during major storm events. It would be better to keep the hump in the bridge and low at the approaches. As was mentioned in (1) above, maintaining a humpback bridge will also be in keeping with the character of the original structure.

If you should have any questions, please do not hesitate to call me.

Sincerely,

William S. Richardson
County Manager

WRS/mg
Cc: Board of Commissioners
Jack Simoneau, Planning and Inspections Director

(CM:Ltr2000:Shingle Ldg.Bridge:DOT/BRIDGES)

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	*B-4094 SR 1222 Moyock, NC*	Date:	*28-Oct-02*
Applicant/Owner:	*NCDOT*	County:	*Currituck*
Investigator(s):	*Lane Sauls - Barbara H. Mulkey Engineering, Inc.*	State:	*North Carolina*
Do Normal Circumstances exist on the site?	Yes / No	Community ID:	*Wetland A*
Is the site significantly disturbed (Atypical Situation)?	Yes / No	Transect ID:	
Is this area a potential Problem Area? (If needed, explain on reverse)	Yes / No	Plot ID:	

VEGETATION

	Dominant Plant Species	Stratum	Indicator		Dominant Plant Species	Stratum	Indicator
1.	*Taxodium distichum*	*canopy*	*OBL*	9.	*Saururus cernuus*	*herb*	*OBL*
2.	*Acer rubrum*	*canopy*	*FAC*	10.	*Osmunda regalis*	*herb*	*OBL*
3.	*Nyssa aquatica*	*canopy*	*OBL*	11.			
4.	*Ulmus americana*	*shrub*	*FACW*	12.			
5.	*Cornus amomum*	*shrub*	*FACW*	13.			
6.	*Vitis sp.*	*vine*	*FAC*	14.			
7.	*Quercus nigra*	*shrub*	*FAC*	15.			
8.	*Arundinaria gigantea*	*herb*	*FACW*	16.			

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-). *100%*

Remarks: *Vegetation is characteristic of cypress-gum swamp with minor disturbances (ie. Past timbering).*

HYDROLOGY

Recorded Data (Describe in Remarks)
- ____ Stream, Lake, or tide Gauge
- ____ Aerial Photographs
- ____ Other
- x No Recorded Data Available

Field Observations:
- Depth of Surface Water: 0-2 (in.)
- Depth to Free Water in Pit: n/a (in.)
- Depth to Saturated Soil: 0-1 (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- x Inundated
- x Saturated in Upper 12 Inches
- x Water Marks
- x Drift Lines
- ____ Sediment Deposits
- x Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- x Oxidized Root Channels in Upper 12 Inches
- x Water-Stained Leaves
- x Local Soil Survey Data
- ____ FAC-Neutral Test
- ____ Other (Explain in Remarks)

Remarks: *Saturation at or immediately below the surface was commonly observed. Portions of the area were inundated also.*

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	*B-4094 SR 1222 Moyock, NC*	Date:	*28-Oct-02*
Applicant/Owner:	*NCDOT*	County:	*Currituck*
Investigator(s):	*Lane Sauls - Barbara H. Mulkey Engineering, Inc.*	State:	*North Carolina*
Do Normal Circumstances exist on the site?	Yes / No	Community ID:	*Upland A*
Is the site significantly disturbed (Atypical Situation)?	Yes / No	Transect ID:	
Is this area a potential Problem Area? (If needed, explain on reverse)	Yes / No	Plot ID:	

VEGETATION

	Dominant Plant Species	Stratum	Indicator		Dominant Plant Species	Stratum	Indicator
1.	*cultivated crops*	*herb*	*UPL*	9.			
2.	*Plantain sp.*	*herb*	*FAC*	10.			
3.	*Lonicera japonica*	*herb*	*FAC*	11.			
4.	*Bidens sp.*	*herb*	*FAC*	12.			
5.				13.			
6.				14.			
7.				15.			
8.				16.			

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-). *<50%*

Remarks: *Agricultural field*

HYDROLOGY

___ Recorded Data (Describe in Remarks)
- ___ Stream, Lake, or tide Gauge
- ___ Aerial Photographs
- ___ Other

x No Recorded Data Available

Field Observations:

- Depth of Surface Water: n/a (in.)
- Depth to Free Water in Pit: n/a (in.)
- Depth to Saturated Soil: n/a (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: *No hydrological indicators were observed.*

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	*B-4094 SR 1222 Moyock, NC*	Date:	*28-Oct-02*
Applicant/Owner:	*NCDOT*	County:	*Currituck*
Investigator(s):	*Lane Sauls - Barbara H. Mulkey Engineering, Inc.*	State:	*North Carolina*
Do Normal Circumstances exist on the site?	**Yes** No	Community ID:	*Wetland B*
Is the site significantly disturbed (Atypical Situation)?	Yes **No**	Transect ID:	
Is this area a potential Problem Area?	Yes **No**	Plot ID:	
(If needed, explain on reverse)			

VEGETATION

	Dominant Plant Species	Stratum	Indicator		Dominant Plant Species	Stratum	Indicator
1.	*Taxodium distichum*	*canopy*	*OBL*	9.	*Saururus cernuus*	*herb*	*OBL*
2.	*Acer rubrum*	*canopy*	*FAC*	10.			
3.	*Nyssa aquatica*	*canopy*	*OBL*	11.			
4.	*Carya aquatica*	*canopy*	*OBL*	12.			
5.	*Cornus amomum*	*shrub*	*FACW*	13.			
6.	*Toxicodendron radicans*	*vine*	*FAC*	14.			
7.	*Viburnum sp.*	*shrub*	*FAC*	15.			
8.	*Osmunda regalis*	*herb*	*OBL*	16.			

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-). *100%*

Remarks: *Vegetation is characteristic of cypress-gum swamp with minor disturbances (ie. Past timbering).*

HYDROLOGY

___ Recorded Data (Describe in Remarks)
- ___ Stream, Lake, or tide Gauge
- ___ Aerial Photographs
- ___ Other

x No Recorded Data Available

Field Observations:

- Depth of Surface Water: **0-6** (in.)
- Depth to Free Water in Pit: **n/a** (in.)
- Depth to Saturated Soil: **0-1** (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- **x** Inundated
- **x** Saturated in Upper 12 Inches
- **x** Water Marks
- **x** Drift Lines
- **x** Sediment Deposits
- **x** Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- **x** Oxidized Root Channels in Upper 12 Inches
- **x** Water-Stained Leaves
- **x** Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: *Saturation at or immediately below the surface was commonly observed. Portions of the area were inundated also.*

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	*B-4094 SR 1222 Moyock, NC*			Date:	*28-Oct-02*
Applicant/Owner:	*NCDOT*			County:	*Currituck*
Investigator(s):	*Lane Sauls - Barbara H. Mulkey Engineering, Inc.*			State:	*North Carolina*
Do Normal Circumstances exist on the site?		**Yes**	No	Community ID:	*Upland B*
Is the site significantly disturbed (Atypical Situation)?		Yes	**No**	Transect ID:	
Is this area a potential Problem Area?		Yes	**No**	Plot ID:	
(If needed, explain on reverse)					

VEGETATION

	Dominant Plant Species	Stratum	Indicator		Dominant Plant Species	Stratum	Indicator
1.	*Festuca sp.*	*herb*	*FAC*	9.			
2.				10.			
3.				11.			
4.				12.			
5.				13.			
6.				14.			
7.				15.			
8.				16.			

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-). *< 50%*

Remarks: *Agricultural field*

HYDROLOGY

____ Recorded Data (Describe in Remarks)
- _____ Stream, Lake, or tide Gauge
- _____ Aerial Photographs
- _____ Other

__x__ No Recorded Data Available

Field Observations:

Depth of Surface Water: __n/a__ (in.)

Depth to Free Water in Pit: __n/a__ (in.)

Depth to Saturated Soil: __n/a__ (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ____ Inundated
- ____ Saturated in Upper 12 Inches
- ____ Water Marks
- ____ Drift Lines
- ____ Sediment Deposits
- ____ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ____ Oxidized Root Channels in Upper 12 Inches
- ____ Water-Stained Leaves
- ____ Local Soil Survey Data
- ____ FAC-Neutral Test
- ____ Other (Explain in Remarks)

Remarks: *No hydrological indicators were observed.*

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	*B-4094 SR 1222 Moyock, NC*	Date:	*28-Oct-02*
Applicant/Owner:	*NCDOT*	County:	*Currituck*
Investigator(s):	*Lane Sauls - Barbara H. Mulkey Engineering, Inc.*	State:	*North Carolina*
Do Normal Circumstances exist on the site?	Yes / No	Community ID:	*Wetland C*
Is the site significantly disturbed (Atypical Situation)?	Yes / No	Transect ID:	
Is this area a potential Problem Area? (If needed, explain on reverse)	Yes / No	Plot ID:	

VEGETATION

	Dominant Plant Species	Stratum	Indicator		Dominant Plant Species	Stratum	Indicator
1.	*Taxodium distichum*	*canopy*	*OBL*	9.			
2.	*Acer rubrum*	*canopy*	*FAC*	10.			
3.	*Salix nigra*	*canopy*	*OBL*	11.			
4.	*Carya aquatica*	*canopy*	*OBL*	12.			
5.	*Ligustrum sinense*	*shrub*	*FAC*	13.			
6.	*Toxicodendron radicans*	*vine*	*FAC*	14.			
7.	*Campsis radicans*	*vine*	*FAC*	15.			
8.	*Saururus cernuus*	*herb*	*OBL*	16.			

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-). *100%*

Remarks: *Vegetation is characteristic of cypress-gum swamp with minor disturbances (ie. Past timbering and clearing for easements).*

HYDROLOGY

___ Recorded Data (Describe in Remarks)
- ___ Stream, Lake, or tide Gauge
- ___ Aerial Photographs
- ___ Other

x No Recorded Data Available

Field Observations:

- Depth of Surface Water: 0-6 (in.)
- Depth to Free Water in Pit: n/a (in.)
- Depth to Saturated Soil: 0-1 (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- x Inundated
- x Saturated in Upper 12 Inches
- x Water Marks
- x Drift Lines
- x Sediment Deposits
- x Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- x Water-Stained Leaves
- x Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: *Saturation at or immediately below the surface was commonly observed. Portions of the area were inundated also.*

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	*B-4094 SR 1222 Moyock, NC*	Date:	*28-Oct-02*
Applicant/Owner:	*NCDOT*	County:	*Currituck*
Investigator(s):	*Lane Sauls - Barbara H. Mulkey Engineering, Inc.*	State:	*North Carolina*
Do Normal Circumstances exist on the site?	Yes / No	Community ID:	*Upland C*
Is the site significantly disturbed (Atypical Situation)?	Yes / No	Transect ID:	
Is this area a potential Problem Area? (If needed, explain on reverse)	Yes / No	Plot ID:	

VEGETATION

	Dominant Plant Species	Stratum	Indicator		Dominant Plant Species	Stratum	Indicator
1.	*Platanus occidentalis*	*canopy*	*FACW*	9.			
2.	*Ligustrum sinense*	*shrub*	*FAC*	10.			
3.	*Cornus florida*	*shrub*	*FAC*	11.			
4.	*Festuca sp.*	*herb*	*FAC*	12.			
5.				13.			
6.				14.			
7.				15.			
8.				16.			

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-). *<50%*

Remarks: *maintained lawn*

HYDROLOGY

___ Recorded Data (Describe in Remarks)
- ___ Stream, Lake, or tide Gauge
- ___ Aerial Photographs
- ___ Other

x No Recorded Data Available

Field Observations:

- Depth of Surface Water: n/a (in.)
- Depth to Free Water in Pit: n/a (in.)
- Depth to Saturated Soil: n/a (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: *No hydrological indicators were observed.*

WETLAND RATING WORKSHEET Fourth Version

Project Name *NCDOT B-4094* Nearest Road *SR 1222*
County *Currituck* Wetland Area *>10* acres Wetland width *approx. 150* feet
Name of Evaluator(s) *Lane Sauls* Date *28-Oct-02*

Wetland Location

- ____ on pond or lake
- x on perennial stream
- ____ on intermittent stream
- ____ within interstream divide
- ____ other ____

Soil Series *Dorovan Mucky Peat*

- x predominately organic- humus, muck or peat
- ____ predominately mineral - non-sandy
- ____ predominately sandy

Hydraulic factors

- ____ steep topography
- ____ ditched or channelized
- x total wetland width >100 feet

Adjacent land use
(within 1/2 mile upstream, upslope, or radius)

- x forested/natural vegetation *23%*
- x agriculture, urban/suburban *75%*
- x impervious surface *2%*

Dominant vegetation

Taxodium distichum

Nyssa aquatica

Acer rubrum

Flooding and Wetness

- ____ semipermanently to permanently flooded or inundated
- x seasonally flooded or inundated
- ____ intermittanly flooded or temporarily surface water
- ____ no evidence of flooding or surface water

Wetland type (select one)*

- ____ Bottomland hardwood forest
- ____ Headwater forest
- x Swamp forest
- ____ Wet flat
- ____ Pocosin
- ____ Bog Forest
- ____ Pine Savanna
- ____ Freshwater Marsh
- ____ Bog/Fen
- ____ Ephemeral Wetland
- ____ Carolina Bay
- ____ Other ____

* the rating system cannot be applied to salt or brackish marshes or stream channels

				weight			
R	Water Storage	*4*	x	4.00	=	*16*	**Wetland**
A	Bank/Shoreline Stabilization	*3*	x	4.00	=	*12*	**Rating**
T	Pollutant Removal	*4*	x	5.00	=	*20*	
I	Wildlife Habitat	*2*	x	2.00	=	*4*	*67*
N	Aquatic Life Value	*3*	x	4.00	=	*12*	
G	Recreation/ Education	*3*	x	1.00	=	*3*	

* Add 1 point if in sensitive watershed and > 10% nonpoint disturbance with 1/2 mile upstream, upslope, or radius.

CURRITUCK COUNTY
BRIDGE NO. 28 ON SR 1222 OVER SHINGLE LANDING CREEK
FEDERAL-AID PROJECT NO. BRZ-1222(6)
STATE PROJECT NO. 8.2040401
WBS NO. 33452.1.1
T.I.P. NO. B-4094

ADDENDUM TO

CATEGORICAL EXCLUSION

UNITED STATES DEPARTMENT OF TRANSPORTATION

FEDERAL HIGHWAY ADMINISTRATION

AND

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

DIVISION OF HIGHWAYS

APPROVED:

6/27/07
Date

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

6-27-07
Date

for John F. Sullivan, III, P.E.
Division Administrator
Federal Highway Administration

CURRITUCK COUNTY
BRIDGE NO. 28 ON SR 1222 OVER SHINGLE LANDING CREEK
FEDERAL-AID PROJECT NO. BRZ-1222(6)
STATE PROJECT NO. 8.2040401
WBS NO. 33452.1.1
T.I.P. NO. B-4094

ADDENDUM TO

CATEGORICAL EXCLUSION

MAY 2007

DOCUMENT PREPARED BY:
MULKEY ENGINEERS & CONSULTANTS
CARY, NORTH CAROLINA

6-27-07
Date

J. A. Bissett, Jr., P.E.
Vice President

NORTH CAROLINA PROFESSIONAL SEAL 14842 ENGINEER JAMES A. BISSETT, JR.

6-27-07
Date

Nicole H. Bennett, AICP
Project Manager

For the North Carolina Department of Transportation

6-27-07
Date

Joseph Miller, PE
Project Manager
Consultant Engineering Group, Western Region

PROJECT COMMITMENTS

CURRITUCK COUNTY
BRIDGE NO. 28 ON SR 1222 OVER SHINGLE LANDING CREEK
FEDERAL-AID PROJECT NO. BRZ-1222(6)
STATE PROJECT NO. 8.2040401
WBS NO. 33452.1.1
T.I.P. NO. B-4094

DIVISION 1

The project will comply with the NCDOT policy entitled *Stream Crossing Guidelines for Anadromous Fish Passage.* A moratorium on in-water construction and demolition is in effect from February 15 to June 30.

Precautionary Guidelines for General Construction in Areas Which May be Used by the West Indian Manatee in North Carolina will be implemented as applicable.

DIVISION 1/ROADWAY DESIGN UNIT/STRUCTURE DESIGN UNIT/ROADSIDE ENVIRONMENTAL UNIT

In coordination with the Historic Preservation office (HPO), the following measures will be provided to minimize impacts to Moyock Historic District:

- Minimal right-of-way acquisition at contributing historic property, the Martin C. Poyner House (NE of Bridge No. 28)
- Tree protection
- Landscape restoration at south end of bridge
- Driveway restoration at contributing historic property, the Martin C. Poyner House
- Two-bar metal rail for new bridge

CURRITUCK COUNTY
BRIDGE NO. 28 ON SR 1222 OVER SHINGLE LANDING CREEK
FEDERAL-AID PROJECT NO. BRZ-1222(6)
STATE PROJECT NO. 8.2040401
WBS NO. 33452.1.1
T.I.P. NO. B-4094

INTRODUCTION: NCDOT Bridge Maintenance Unit records indicate that Bridge No. 28 has a sufficiency rating of 26.3 out of a possible 100 for a new structure. The current weight limit posting prohibits school bus crossings. The bridge is considered functionally obsolete and structurally deficient. Updated accident data indicate that there were no reported accidents for the period October 2003 through September 2006. A Categorical Exclusion (CE) for the replacement of Bridge No. 28 was signed on February 15, 2005. Subsequent to the signing of the CE, the Preferred Alternative changed. This Addendum describes the new Preferred Alternative and associated impacts, public involvement, and supporting information (see Figure 1 for project location).

1. PREFERRED ALTERNATIVE

The February 2005 CE identified Alternative C Option 2, closing the bridge to vehicular traffic, maintaining access for pedestrian traffic, and revising traffic patterns within the Moyock Historic District, as the Preferred Alternative. Replacing the bridge at its existing location (Alternative A) was eliminated as an alternative in order to minimize impacts to the Moyock Historic District.

Based upon input from the public and the Currituck County Commissioners, closing the bridge to vehicular traffic was deemed unacceptable. Many comments indicated that the bridge relieves traffic congestion, particularly during the summer months, and it provides access for buses and emergency response vehicles. Based on this input and a reassessment of the alternatives, the preferred alternative recommendation changed to replacing the bridge along the existing alignment. This alternative (Alternative A) is described below:

Alternative A (preferred) replaces Bridge No. 28 along the existing alignment (Figure 2). During construction, traffic will be maintained off-site along existing roads.

The proposed replacement structure consists of a bridge with a clear roadway width of 27-feet 5-inches. Two 11-foot travel lanes with 2-foot 8.5-inch shoulders will be provided. Based on a preliminary hydraulic analysis, the new structure will be approximately 108 feet in length. The roadway grade of the proposed structure will be raised approximately 1.5 feet to provide clearance underneath equivalent to the existing structure. The proposed bridge length may be increased or decreased as necessary to accommodate peak flows as determined by a detailed hydrologic study during final design.

The proposed approach roadway consists of two 11-foot lanes with 4-foot shoulders. The shoulder widths were reduced from 6 feet as described in the 2005 CE to minimize impacts to the Martin C. Poyner House (a contributing historic property within the Moyock Historic

District). The design speed will be 35 mph. (See Figure 3.) Six foot shoulders will be provided in guardrail sections. The three-way stop will remain at the intersection of SR 1222 and SR 1228.

A design exception will be required for the sag vertical curve "k" factor, vertical stopping sight distance and horizontal curve radius.

II. Estimated Costs

The estimated costs of replacing Bridge No. 28, based on current prices, are shown in Table 1. The estimated cost of the project as shown in the Draft 2007-2013 (STIP) is $282,000, including $150,000 prior years cost, $35,000 for right-of-way, $27,000 for mitigation, and $70,000 for construction.

Table 1. Estimated Costs

	Alternative A
Structure Removal (Existing)	$ 23,400
Proposed Structure	$ 302,400
Roadway Approaches	$ 106,300
Miscellaneous and Mobilization	$ 96,900
Engineering Contingencies	$ 71,000
ROW/Const. Easements/Utilities	$ 153,300
TOTAL	$ 753,300

III. Summary of Anticipated Impacts

This section provides a summary of anticipated impacts for the Preferred Alternative. Detailed descriptions of the existing conditions and field survey methods are included in the February 2005 Categorical Exclusion.

A. Terrestrial and Wetland communities

Table 2 lists the anticipated impacts to terrestrial and wetland communities.

Table 2. Anticipated Impacts to Terrestrial and Wetland Communities

Community Type	Alternative A	
	Impact (acres)	Mechanized Clearing (acres)
Cypress-Gum Swamp	0.02	0.09
Man-Dominated Community	0.02	0.01
Totals	**0.04**	**0.10**

B. AQUATIC COMMUNITIES

Table 3 shows impacts to surface waters, both in terms of area and linear feet. Impacts were derived by estimating the footprints of the bridge replacement piers in the water. Linear impacts were calculated by noting the width of the replacement structure over the creek.

Table 3. Impacts to Aquatic Communities

Community	Alternative A	
	Surface Area	Distance
Shingle Landing Creek	0.02 acres	15.0 linear feet

C. THREATENED AND ENDANGERED SPECIES

US Fish and Wildlife (USFWS) records (April 27, 2006) were reviewed in October 2006 for federally protected species occurring in Currituck County. Since the signing of the CE, the shortnose sturgeon (*Acipenser brevirostrum*) was added as Endangered. The shortnose sturgeon was included in the CE due to habitat potential in the study area. The biological conclusion remains May Affect-Not Likely to Adversely Affect. The NMFS concurred with this biological conclusion in a letter dated June 2, 2004. It is included in the appendix to the CE. There have not been any other changes to the federally protected species list for Currituck County.

North Carolina Natural Heritage Program (NCNHP) records (August 11, 2006) indicate that one species, Long beach seed box (*Ludwigia brevipes*), has been removed and one, Grassleaf arrowhead (*Sagittaria weatherbiana*), has been added to the federal species of concern (FSC) list for Currituck County (see Table 5). Habitat for grassleaf arrowhead is present in the project area. According to the NCNHP, there have been no recorded occurrences of any federally protected species or FSC species within one mile of the project area.

Table 5. Federal Species of Concern in Currituck County and State Status

Scientific Name	Common Name	Federal Status	State Status	Habitat Requirements	Habitat Available
Sagittaria Weatherbiana	Grassleaf Arrowhead	FSC	SR-T	Fresh to slightly brackish marshes, streams, swamps and pond margins	Yes
Laterallus jamaicensis	Black rail	FSC	SR	Brackish marshes, rarely freshwater marshes (breeding season only)	No
Trillium pusillum var. virginianum	Virginia least trillium	FSC	E	Mesic to swampy hardwood forests	Yes

D. Historic Architecture

In a concurrence form dated August 30, 2006 (Appendix) the State Historic Preservation Officer (SHPO) determined that Alternative A (preferred) would have no adverse effect on the Moyock Historic District, based upon implementation of several minimization measures noted on the concurrence form. Subsequently, on August 30, 2006, the FHWA issued a *de minimis* impact finding (see meeting minutes in Appendix). In accordance with Section 6009(a) of the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU), the *de minimis* impact finding satisfies the requirements of Section 4(f). A Section 4(f) Evaluation is not required.

E. Archaeology

The SHPO, in a memorandum dated June 29, 2000 stated they are "aware of no properties of ... archaeological significance which would be affected by the project." A copy of the memorandum is included in the Appendix to the February 2005 Categorical Exclusion.

F. Relocations

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

G. Public Facilities/Social Impacts

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

H. Section 4(f) Impacts

The SHPO, in a concurrence form dated August 30, 2006, concurred that the proposed project will have a no adverse effect on the Moyock Historic District, which is eligible for the National Register of Historic Places. This effect is not subject to a Section 4(f) Evaluation (see Section III.D).

I. PRIME FARMLANDS

Since the proposed bridge will be replaced at its existing location, the Farmland Protection Policy does not apply.

J. AIR QUALITY

This project is an air quality neutral project in accordance with 40 CFR 93.126. it is not required to be included in the regional emissions analysis (if applicable) and project level CO or PM2.5 analyses are not required.

The purpose of this project is to improve the functionality and structural integrity of Bridge No. 28 by constructing a new bridge. This project will not result in any meaningful changes in traffic volumes, vehicle mix, location of the existing facility, or any other factor that would cause an increase in emissions impacts relative to the no-build alternative. Therefore, FHWA has determined that this project will generate minimal air quality impacts for Clean Air Act criteria pollutants and has not been linked with any special MSAT concerns. Consequently, this effort is exempt from analysis for MSATs.

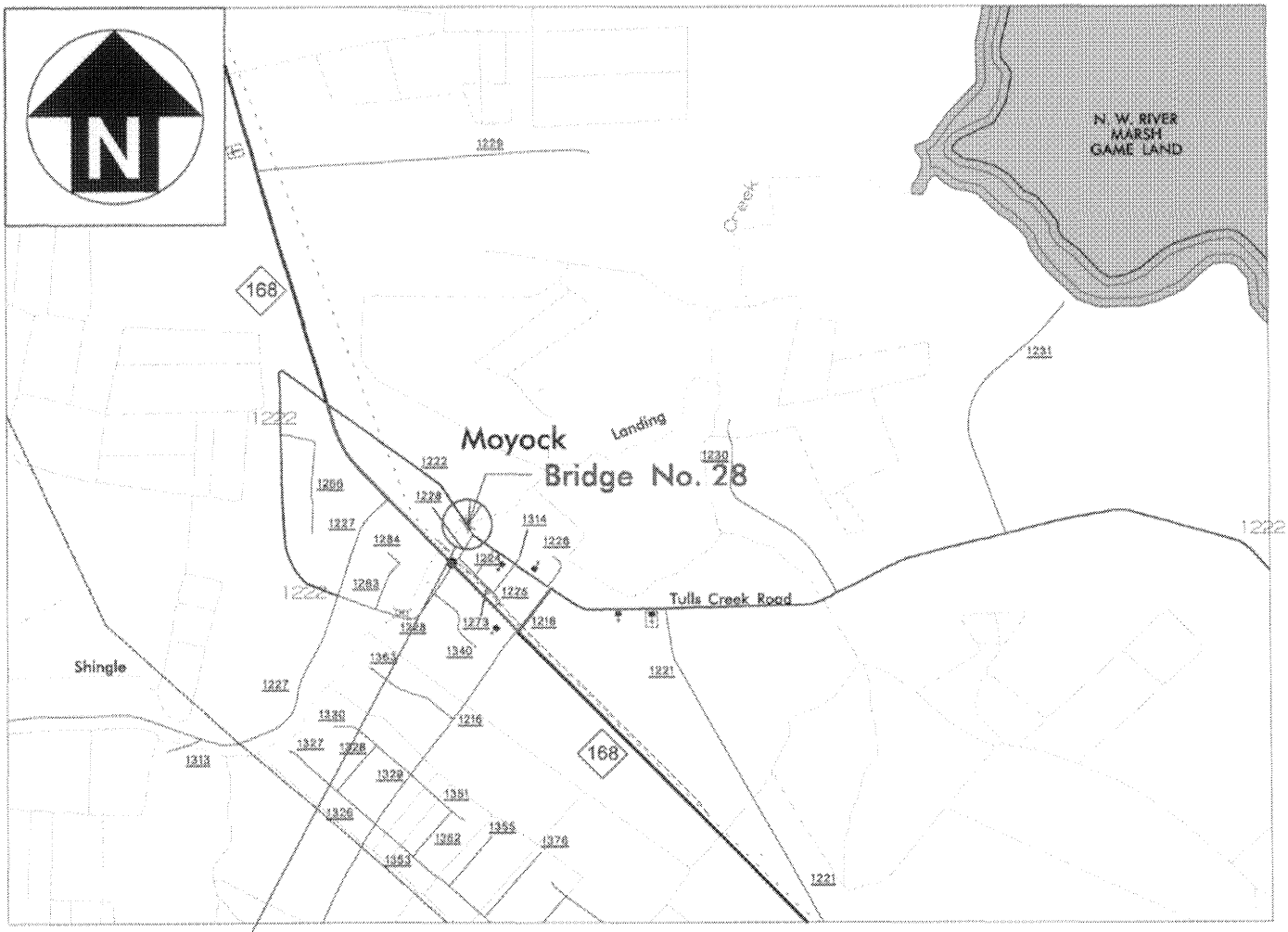
IV. PUBLIC INVOLVEMENT

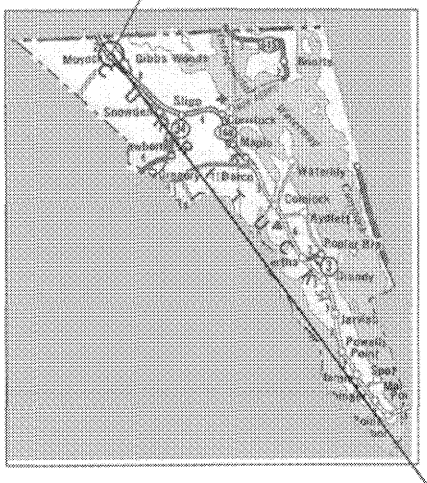
Following approval of the February 2005 CE, many comments were received from the public and local officials regarding selection of Alternative C Option 2 as the preferred alternative. As a result, the NCDOT decided to reassess the alternatives.

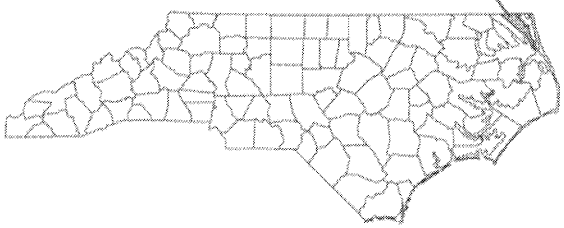
A Citizens Informational Workshop was held from 4:00 p.m. to 6:00 p.m. on September 19, 2005 at the Moyock Elementary School cafeteria in Moyock. At the workshop, Alternative C Option 2 and Alternative A were presented. Twenty-one comment forms were received. Fourteen respondents preferred Alternative C Option 2 and seven preferred Alternative A. The workshop invitation is in the Appendix.

A County Commissioners meeting was held on September 19, 2005 at 7:00 p.m. The County Commissioners voted to recommend Alternative A as the preferred alternative. In addition, the Commissioners requested that NCDOT install a traffic signal at the northern intersection of NC 168/SR 1222 and that SR 1222 (Tulls Creek Road) be realigned north of Sawyer Town Road to Pudding Ridge Road. These improvements are not included as part of this project and will be addressed by Division 1 at a later date.

A newsletter was distributed in January 2006 announcing Alternative A as the new preferred alternative (Appendix).







PROPOSED DETOUR ROUTE

North Carolina Department of Transportation
Project Development & Environmental Analysis

CURRITUCK COUNTY
BRIDGE NO. 28
ON TULLS CREEK ROAD (SR 1222)
OVER SHINGLE LANDING CREEK
B-4094

FIGURE 1

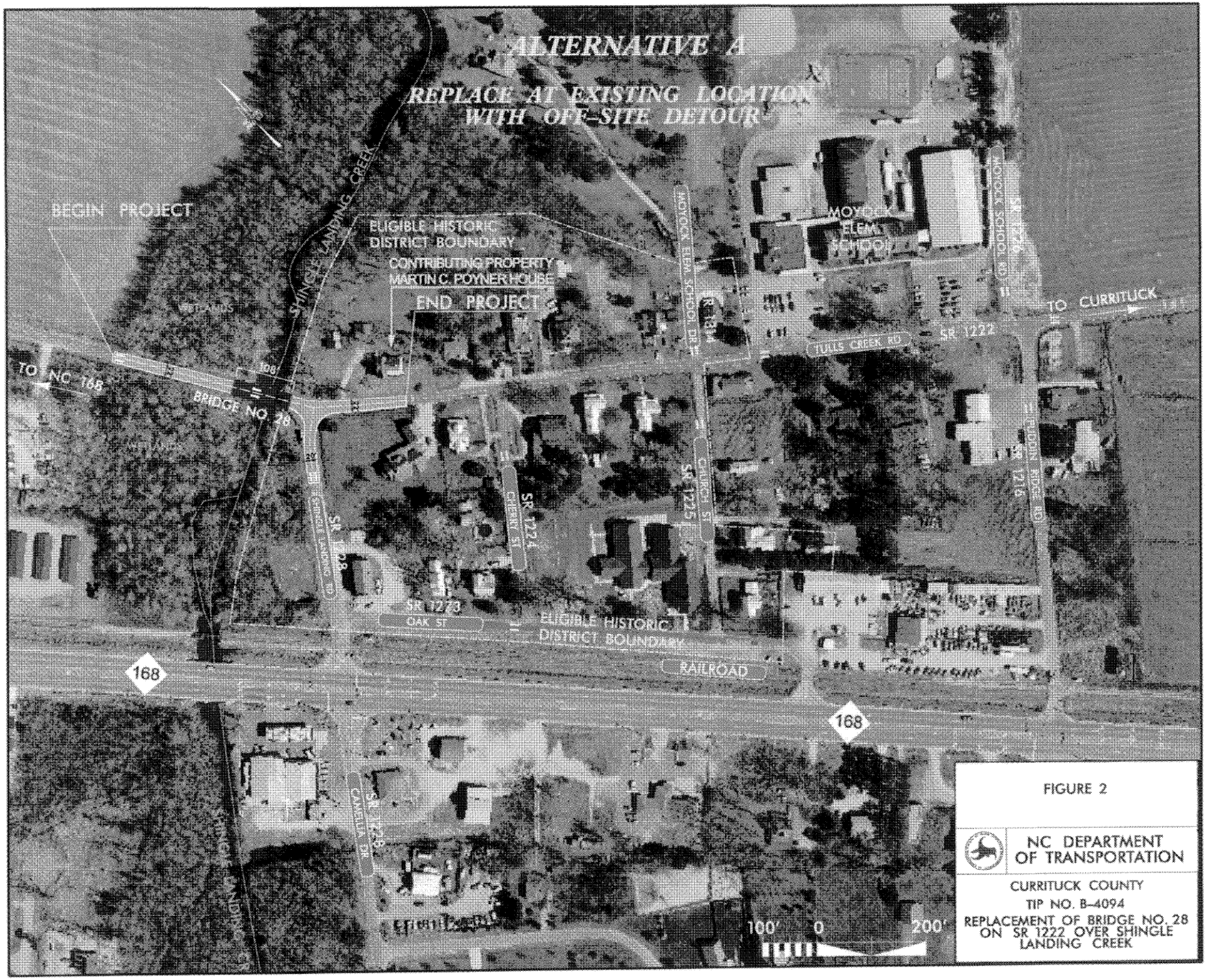


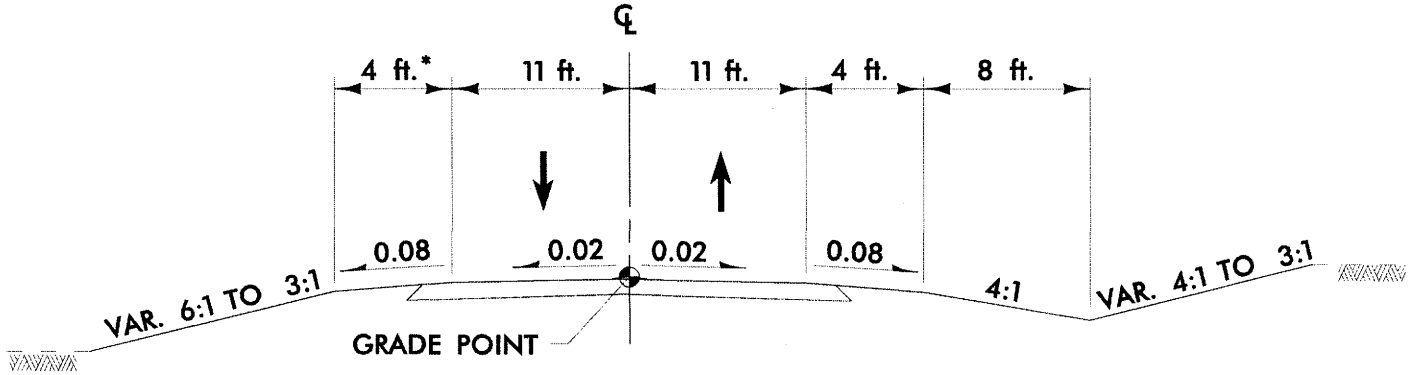
FIGURE 2

NC DEPARTMENT OF TRANSPORTATION

CURRITUCK COUNTY

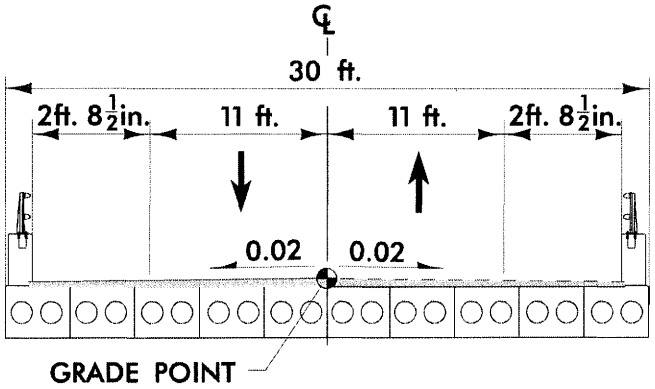
TIP NO. B-4094

REPLACEMENT OF BRIDGE NO. 28 ON SR 1222 OVER SHINGLE LANDING CREEK



TYPICAL APPROACH SECTION
(PROPOSED)

* 6 ft. WHEN GUARDRAIL IS WARRANTED



2 BAR METAL RAIL

2 BAR METAL RAIL

TYPICAL BRIDGE SECTION
(PROPOSED)

TRAFFIC DATA

(EXISTING)	2006 ADT	=	2,300
(CONST. YR.)	2009 ADT	=	2,700
(DESIGN YR.)	2030 ADT	=	5,600
DUAL	3 %		
TTST	1%		

FUNCTIONAL CLASSIFICATION :
LOCAL – RURAL

North Carolina Department
Of Transportation
Project Development &
Environmental Analysis

CURRITUCK COUNTY
BRIDGE NO. 28 ON SR 1222
(TULLS CREEK RD)
OVER SHINGLE LANDING CREEK
TIP NO: B-4094

FIGURE 3

10/14/02

APPENDIX

B-4094 Categorical Exclusion Addendum

Federal Aid #: **BRZ-1222(6)** *TIP#:* **B-4094** *County:* **Currituck**

CONCURRENCE FORM FOR ASSESSMENT OF EFFECTS

Project Description: Replace Bridge No. 28 on SR 1222 (Tulls' Creek Road) over Shingle Landing Creek

On August 30, 2006 representatives of the

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

Reviewed the subject project and agreed

☐ There are no effects on the National Register-listed property/properties located within the project's area of potential effect and listed on the reverse.

☐ There are no effects on the National Register-eligible property/properties located within the project's area of potential effect and listed on the reverse.

☐ There is an effect on the National Register-listed property/properties located within the project's area of potential effect. The property/properties and the effect(s) are listed on the reverse.

☒ There is an effect on the National Register-eligible property/properties located within the project's area of potential effect. The property/properties and effect(s) are listed on the reverse.

Signed:

Vanessa E. Patrick 8-30-06
Representative, NCDOT Date

8.30.06
FHWA, for the Division Administrator, or other Federal Agency Date

8/30/06
Representative, HPO Date

Renee Gledhill-Earley 8-30-06
State Historic Preservation Officer Date

Federal Aid #: **BRZ-1222(6)** *TIP#:* **B-4094** *County:* **Currituck**

Properties within the area of potential effect for which there is no effect. Indicate if property is National Register-listed (NR) or determined eligible (DE).

Properties within the area of potential effect for which there is an effect. Indicate property status (NR or DE) and describe the effect.

Moyock HD (DOE) - no adverse effect

Reason(s) why the effect is not adverse (if applicable).

with conditions:

- tree protection @ ROW SE end of bridge
- landscape restoration
- driveway restoration (Poyner property)
- + 2-bar metal rail for new bridge

no ROW acq. @ contrib. property (Poyner)

Initialed: NCDOT VEL FHWA BA HPO SDM

MULKEY
ENGINEERS & CONSULTANTS

MEETING NOTES

TO: TIP No. B-4094 File: 2002178.00

FROM: Michelle Fishburne, Mulkey Engineers and Consultants

DATE: September 20, 2006

SUBJECT: Historic Preservation Office/NCDOT Monthly Meeting; TIP No. B-4094, Replacement of Bridge No. 28 on SR 1222 Over Shingle Landing Creek in Currituck County

One of the standard monthly meetings between the NCDOT and the HPO NC was held on August 30, 2006 in the small conference room at the NCDOT Parker-Lincoln Office. The subject project, B-4094, was included on this August meeting agenda. The purpose of the meeting was to review the impacts and the measures to avoid and minimize harm to the historic district within the project area. A list of the meeting attendees and meeting discussions are provided below.

MEETING PARTICIPANTS

Donnie Brew, FHWA
Renee Gledhill-Earley, HPO
Sarah McBride, HPO
Mary Pope Furr, NCDOT
Vanessa Patrick, NCDOT
Michelle Fishburne, Mulkey Engineers & Consultants
Paddy Jordan, Mulkey Engineers & Consultants

MEETING NOTES

Ms. Furr and Ms. Patrick opened the meeting by discussing the location of the project and defining the historic district boundaries for the Moyock Historic District. Ms. Furr noted that the bridge is defined as a non-contributing structure to the district. Following this discussion on the district, Ms. Fishburne and Ms. Jordan, representing Mulkey, reviewed the project designs and revisions that had occurred since the previous coordination with representatives with the FHWA and HPO. Ms. Fishburne provided exhibits, design plans, cross sections, and a revised impact table for review. The following information and decisions were discussed during the meeting:

1. Prior to the meeting, Mulkey and NCDOT Roadway Design reviewed the project designs with the Division Office to determine locations where the design of the replacement bridge and approaches could be revised to minimize impacts to the Historic District. The plans had included eleven-foot lanes and based on this coordination with the NCDOT Division Office, narrower lanes could not be incorporated since it would not provide an adequate width for trucks; however, there were several other changes that were incorporated into the design to minimize the impacts.

2. The design revisions incorporated into the plans included:
    a. removing ditches,
    b. holding the existing edge of pavement on the north side of the Martin C. Poyner House (contributing property) boundary,
    c. eliminating the guardrail at the end of the bridge on the north side,
    d. providing a driveway connection to the Martin C. Poyner House while maintaining as many of the existing trees and bushes as possible, and
    e. providing landscaping at the end of the bridge as feasible for aesthetics.

3. With the design revisions, the property required for right of way within the historic district totals less than 0.2 acres. Of that total, the right of way required for the Martin C. Poyner house is less than 0.02 acre. This is necessary for maintenance of the guardrail.

4. Ms. Gledhill-Earley requested that concrete railing (jersey barrier type) not be used on the bridge. For aesthetics she recommended two-bar railing be used on the new bridge.

5. Based on the minimal right of way required and conditions discussed to minimize the impacts to the Martin C. Poyner House within the district and for the district, the HPO determined that the project will have a "no adverse effect" on the Moyock Historic District in accordance with Section 106. FHWA and NCDOT concurred with this determination.

6. Based on the "no adverse effect" determination, Mr. Brew, representing FHWA, stated that the minimal impact of this project is consistent with the criteria for a Section 4(f) "*de minimis*" impact finding.

7. Therefore, FHWA concluded that a Section 4(f) Evaluation would not be required for this project and that the CE Addendum should note the "no adverse effect" determination for Section 106 and include a statement that the impacts to the historic district are minimal and were determined to be within the criteria for a "Section 4(f) de minimis impact finding" and a Section 4(f) Evaluation is not required.

8. Mr. Brew noted that he would send information regarding the this finding to Mulkey to review for the text to include in the CE Addendum. (Mr. Brew followed-up and provided the website http://www.fhwa.dot.gov/hep/qasdeminimus.htm for additional information.)

9. Mulkey was instructed to continue with the preparation of the CE Addendum and include the conditions in the project commitments on the green sheet.

10. The meeting was adjourned following the completion and signing of the Concurrence Form for Assessment of Effects.

cc: Project File

NOTICE

Citizens Informational Workshop

September 19, 2005

North Carolina Department of Transportation

Bridge No. 28 Replacement on SR 1222 (Tulls Creek Road) Over Shingle Landing Creek

Currituck County
T.I.P. B-4094

Invitation

Stacy Baldwin, PE
North Carolina Department of Transportation
Project Development and Environmental Analysis Branch
1548 Mail Service Center
Raleigh, North Carolina 27699-1548

You are invited to attend a

CITIZENS INFORMATIONAL WORKSHOP

Date:

September 19, 2005

Time:

4:00 p.m. to 6:00 p.m.

Location:

Moyock Elementary School Cafeteria
255 Tulls Creek Road
Moyock, NC 27958

Contact Information

Stacy Baldwin, PE
NCDOT-PDEA
1548 Mail Service Center
Raleigh, NC 27699-1548
919-733-7844 ext. 264
stacybaldwin@dot.state.nc.us

Pamela R. Williams
MULKEY Engineers & Consultants
PO Box 33127
Raleigh, NC 27636-3127
919-858-1908
pwilliams@mulkeyinc.com

Project Introduction

Due to the numerous concerns from the public and local offices regarding the proposed permanent closure of Bridge No. 28 on SR 1222 (Tulls Creek Road) over Shingle Landing Creek, the North Carolina Department of Transportation is reassessing the alternatives.

Project Description

There are two build alternatives:

Alternative A involves replacing Bridge No. 28 along the existing alignment. During construction, traffic will be maintained off-site along existing roads. Estimated construction and right-of-way cost is $723,000.

Alternative C involves closing the bridge permanently to vehicular traffic. The bridge will remain accessible for pedestrian use. Estimated construction and right-of-way cost is $95,000.

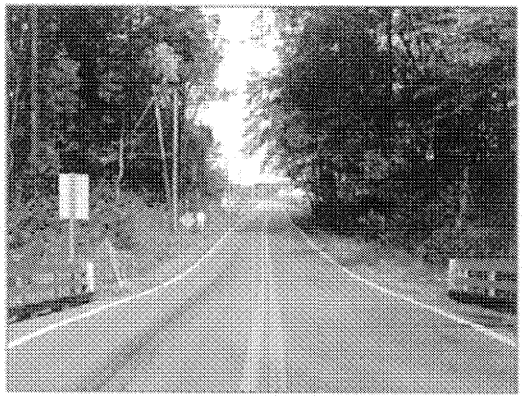
Citizens Informational Workshop

NCDOT realizes that citizens and business owners in the vicinity of the bridge are concerned about the potential impacts that this project may have on their homes and businesses. NCDOT personnel will be available to answer questions at the informal workshop. Drop by any time between 4:00 pm and 6:00 pm for an opportunity to gather more information, voice your concerns, and ask questions.

About Our Organization

Public involvement is an important part of the planning process. The NCDOT encourages citizen involvement on transportation projects, and will consider your suggestions and address your concerns. If you have transportation questions on other projects, call our Customer Service Center toll-free at 1-877-DOT-4YOU, or visit the NCDOT website at www.ncdot.org.

Auxiliary aids and services will be provided for disabled persons who wish to attend this workshop. Contact Ms. Baldwin as soon as possible so that arrangements can be made.



Project Development Process

Step 1
Data Collection

Step 2
Alternative Development

Step 3
Environmental Analysis

Step 4
Citizens Informational Workshop (January 2005)

Step 5
Selection of Preferred Alternative (April 2004)

Step 6
Complete Environmental Document (February 2005)

Step 7
Citizens Informational Workshop (September 2005)

Step 8
Reassessment of Preferred Alternative

Step 9
Environmental Document Addendum

We're on the Web!

www.ncdot.org

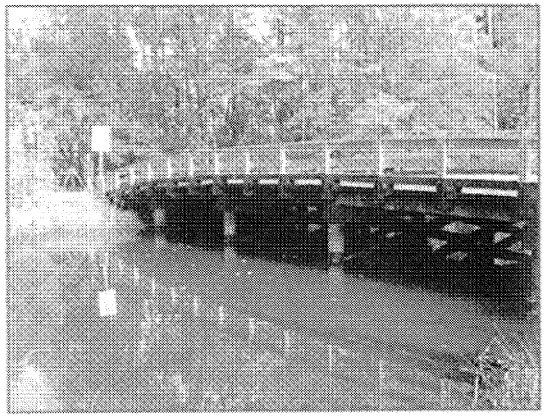
Newsletter

January 2006

North Carolina Department of Transportation

Bridge No. 28 Replacement on SR 1222 (Tulls Creek Road) Over Shingle Landing Creek

Currituck County
T.I.P. Project No. B-4094



Joseph Miller
North Carolina Department of Transportation
Project Development and Environmental Analysis Branch
1548 Mail Service Center
Raleigh, North Carolina 27699-1548

Contact Information

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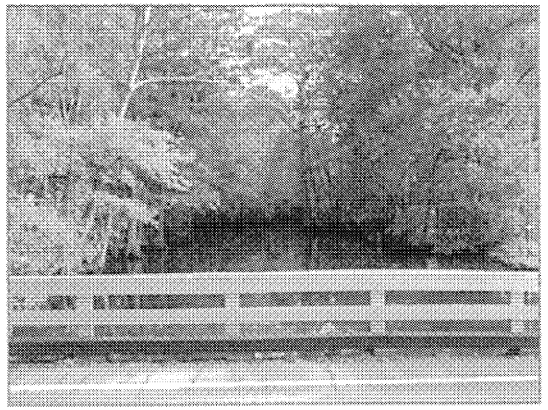
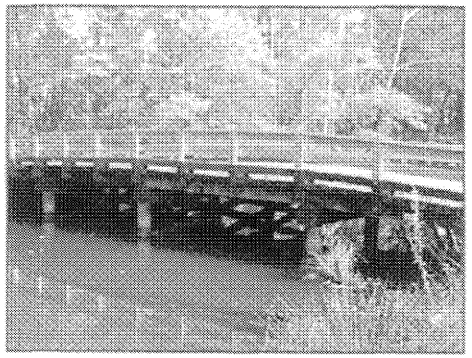


Project Introduction

The North Carolina Department of Transportation (NCDOT) has been in the process of evaluating alternatives and providing environmental documentation for replacing Bridge No. 28 over Shingle Landing Creek. The project is located in Currituck County on SR 1222 (Tulls Creek Road) in Moyock, North Carolina.

The purpose of this newsletter is to provide recent updates on project information to citizens in the vicinity of proposed project.



Project Updates

A Citizens Informational Workshop was held for the project on September 19, 2005. That same evening, a meeting was held by Currituck County commissioners that included discussion of the proposed project. Previously, the preferred alternative for the project was Alternative C Option 2. The county commissioners voted for Alternative A as the preferred alternative, and also requested a traffic signal at the northern intersection of NC 168/Tulls Creek Road, and that Tulls Creek Road be realigned north of Sawyer Town Road to Pudding Ridge Road. An environmental document addendum is now in progress that will change the preferred alternative to Alternative A.

Alternative A involves replacing Bridge No. 28 along the existing alignment. During construction, traffic will be maintained off-site along existing roads. The replacement bridge will be approximately 28 feet wide and 85 feet long. The design speed will be 35 mph. The three-way stop will remain at the intersection of Tulls Creek Road and SR 1228. The county commissioners' request for a traffic signal at the northern intersection of NC 168/Tulls Creek Road and the realignment of Tulls Creek Road north of Sawyer Town Road to Pudding Ridge Road will not be a component of Alternative A.

About Our Organization

Public involvement is an important part of the planning process. The NCDOT encourages citizen involvement on transportation projects, and will consider your suggestions and address your concerns. Questions on this project can be directed to one of the contacts in this newsletter. If you have transportation questions on other projects, call our Customer Service Center toll-free 1-877-DOT-4YOU, or visit the NCDOT website at www.ncdot.org.

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